

Action Research of Product Innovation based on The Recent Trends in Improving Sales Performance

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Abstract

This study aims to obtain empirical findings on "how-to" a product innovation based on the recent trends that can improve sales performance. This study uses a quantitative approach to the object of research in sales performance and product innovation at Chandelle Co., a business unit of the craft industry that produces aromatherapy. The research strategy uses action research through a series of plan-act-observe-reflect stages for eight months in a business incubator. The research participants, among other customers, are respondents who will assess the results of action research conducted by the owner as researchers. Data analysis uses a linear regression equation with SPSS20 statistical software on the results of questionnaires distributed randomly to 100 customers of Chandelle Co. as the unit of analysis. Action research result shows that product innovation based on the recent trends was able to have a significant positive impact on Chandelle Co's sales performance through the actions steps that consist of idea generation, idea screening, concept testing, market strategy analysis, product development, market testing, commercialization, monitoring and evaluation. The results of this study are useful for aromatherapy entrepreneurs in the creative industry, especially in the craft subsector, to find the right product innovations that can significantly increase their product sales.

Keywords

Entrepreneurship, Sales Performance, Product Innovation, Action Research, Creative Industry

1. Introduction

Innovation is one of the methods used by companies to adapt in a dynamic industrial environment, where companies are required to pour new creative and innovative ideas into the products offered (Kusumawati 2010). Products have a declining life cycle over time and require innovation to maintain their competitive strength in the market. There is a positive and significant influence between innovation and company performance (Hurley and Hult 1998). There are many innovations that the company can do to improve its sales performance, including product innovation.

The product innovation process can start from discovering, generating, and applying creative new ideas (Aboulnasr et al., 2008). At the same time, other findings state that product innovation can be achieved by developing new knowledge related to products in the market that refers to customer satisfaction (Kim and Huarng 2011). The company's sales performance depends on product innovation that can increase the company's market power and the company's ability to cope with highly competitive market conditions, and company must also consistently develop product innovations in line with the times and adapt to the constantly changing environment to meet various kinds of customer needs and desires. So the company can increase profits (Tung 2012).

Based on the gaps that exist in several previous studies regarding the starting point in product innovation, the researchers formulated the main problem in this study, namely how the stages of product innovation are suitable to be applied to the craft business unit as one of the sub-sectors of the creative industry in Indonesia, to improve performance of the sales. The scope of the study is a Chandelle Co. business as one of the businesses developed by students in a business incubator center within the Bina Nusantara University environment.

1.1 Objectives

1. To find out how product innovation created based on the latest trends can improve Chandelle Co.'s sales performance.
2. To see the factors that make the biggest contribution to the success of product innovation in improving the sales performance of Chandelle Co.

2. Literature Review

Good product innovation can be realized by listening to the voice of the customer, understanding the customer, and using customer knowledge to anticipate the direction of market movements. Trott (2017) states New product innovation development is the process of bringing new products to market. New Product Development (NPD) is carried out due to changes in consumer preferences, increased competition, technological advances, and the use of new opportunities. New Product Development (NPD) is a business strategy in seizing market opportunities that focus on customer needs and wants, analyzing the feasibility of ideas, and developing new ideas. There are several stages in New Product Development, namely: idea generation, idea screening, concept testing, market strategy, product development, market testing, commercialization, monitoring & evaluation. (1) Idea Generation is a key factor in innovation by a company. All innovations start from creative ideas (Amabile et al. 1996). Idea Generation is the process of creating and developing several candidate ideas or solutions that, when implemented, can solve a problem, obtained through innovation and creativity (Valtulina and De Rooij 2019); (2) Idea Screening does not only look at one phase, but the selection of ideas must see and consider the whole process (Ciriello et al., 2019); (3) *Concept testing is used to determine whether the innovation idea to be developed is needed by consumers* (Crawford and Benedetto 2000); (4) Market strategy is a set of goals, rules, policies, and objectives to direct the company in dealing with the ever-changing environment and market conditions or competitors (Assauri 2015); (5) Product development is the activity of making product intermediaries, which means making product adjustments made at the buyer's request (Sunyoto 2014); (6) *Market testing* is the process of testing a real product using an experimental design (McDaniel and Gates 2013); (7) *Commercialization* is the process of transitioning from innovation to business to scale up projects (Cubero et al. 2020); (8) *Monitoring & evaluation can provide access to the right way to implement product innovation* (Abdi et al. 2019).

Performance is the organization's achievement in its work process to achieve goals and can be measured using standards set within a certain period. Mokodompit et al. (2014) Performance measurement is a tool or method used to record and assess the achievement of activities based on goals, objectives, and strategies. Sales performance is the process of selling products to get high profits and selling products exceeding the previously set targets (Scott 2009). One of the measuring tools that can be used to measure business sales performance is Sales Growth Percentage (SGP). Widarjo and Setiawan (2009) sales growth reflects the company's ability from time to time, and the company is said to be successful in carrying out its strategy if the company's sales growth rate from time to time has increased.



Figure 1. Conceptual Model

3. Methods

The research strategy applied by the researcher in this research is action research with a quantitative research approach. The object of this research is the sales performance of Chandelle Co. and the development of product innovations that are created based on the latest trends. The research subject is the Chandelle Co business unit which focuses on manufacturing aromatherapy products, located in Bandung City, West Java, Indonesia. Research participants in this action research are business owners who act as researchers and take corrective actions to problems and customers as respondents who will assess the success of research actions carried out on the variables studied. The action research cycle in this study refers to the action research cycle model through the stages of the plan, act, observe and reflect (Zuber-Skerritt and Perry 2002). Based on these stages, researchers design plans to develop product innovations based on the latest trends that refer to the New Product Development theory (Trott 2017).

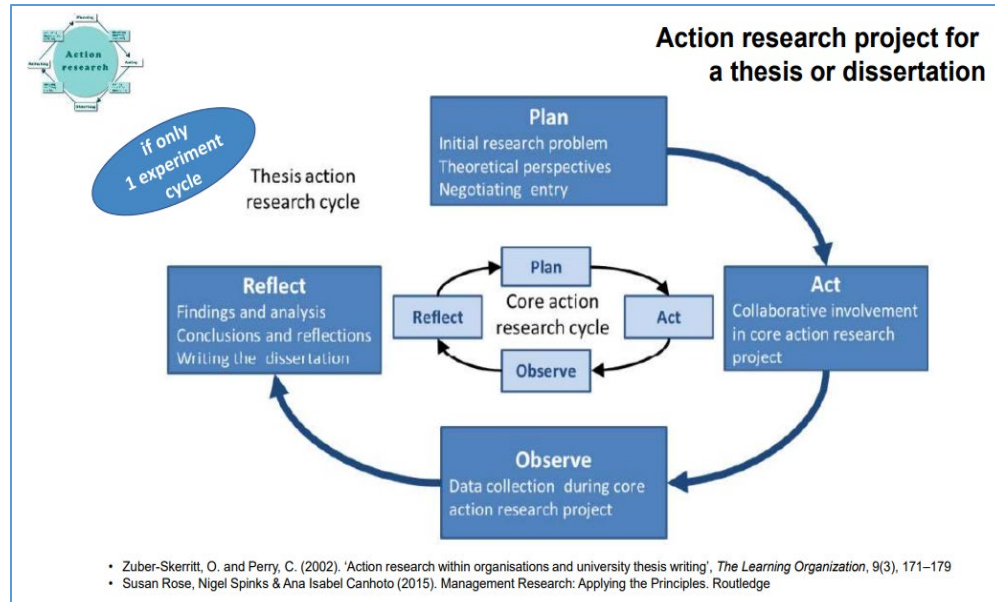


Figure 2. Action Research Cycle

Action

The corrective action taken by the researcher was carried out starting from April 2021-November 2021. The researcher acted referring to Paul Trott's New Product Development (NPD) theory. The following are the action steps taken by the researcher:

- (1) Researchers with a brainstorming process carry out idea generation. In the brainstorming process, the researcher recorded various ideas received for joint analysis.
- (2) Researchers carried out Idea screening by compiling a list of ideas, analyzing the advantages and disadvantages of each idea, narrowing the choices of available ideas, and conducting discussions with experienced people in the field industry (business mentors) to determine the final idea that will be proposed developed as product innovation.
- (3) Concept testing is carried out by researchers by designing a research questionnaire that refers to Paul Trott's New Product Development theory using Google Forms aimed at the target market which has already purchased Chandelle Co products to obtain various information related to customer preferences. In addition, researchers designed Value Proposition Parameters and Gain/Pain ratio to find out the needs, desires, and problems experienced by customers related to aromatherapy products. Information and data from the questionnaires that have been obtained are collected and used as a reference for researchers to develop prototypes. The prototype that has been developed is then distributed to 10 target market people, and researchers collect feedback to be evaluated and used as a reference in the process of perfecting the prototype.
- (4) Market strategy is carried out by researchers using 4P analysis (product, price, place, promotion). Researchers develop and answer draft questions related to products, prices, places, and promotions.
- (5) Product development is carried out by making a Minimum Viable Product (MVP) designed based on an improved prototype. At this stage, the researcher collects various information related to suppliers, compiles the necessary tools & materials, makes a cost plan to make a Minimum Viable Product (MVP), measures the benefits that can be obtained from product development, and carries out the Minimum Viable Product (MVP) production process.
- (6) Market testing is carried out using the beta testing strategy. Researchers carry out beta Testing market testing by launching and selling a Minimum Viable Product (MVP) in small quantities to a group of customers to obtain feedback in the form of ratings, criticisms, and suggestions. The feedback obtained

is used by researchers to improve product functions, features, and product compatibility before being launched to the market.

- (7) Commercialization is carried out by compiling lists and checking the availability of production tools & materials, designing production procedures, implementing SOPs, carrying out production processes, distribution through online platforms (e-commerce & social media), and conducting marketing to reach the target market.
- (8) Monitoring & evaluation is carried out by comparing sales data before and after the research activities by taking measurements using paired t-test on SPSS for the sales data period starting from August 2020-November 2021 and measuring the level of sales growth per month. The researcher analyzes the success rate of launching an innovative product to the market by measuring the business's sales performance during that period by looking at the rate of increase in sales growth in certain months where product innovation is being launched in the market. Researchers conclude the innovation project and evaluate it based on sales growth and reviews or the results of questionnaires given by customers.

Observation

Researchers will observe the results of actions that have been carried out on the object of research. Chandelle Co's sales performance will observe using the results of sales growth calculations made by comparing sales levels before and after corrective action in the form of product innovations created based on the latest trends using paired t-test in SPSS. The researcher's sales growth calculation is based on sales data obtained from sales through e-commerce and social media platforms in the period August 2020 - November 2021. Product innovations based on the latest trends will measure based on consumer assessments through questionnaires distributed using a Likert scale. Researchers distributed questionnaires during the period of the research action, from April 2021-November 2021. The following are some questions related to product innovation that researchers have carried out through action research, then distributed to Chandelle Co consumers as an external research participant who will assess the success of the action.

Idea Generation	<ul style="list-style-type: none"> ▪ I feel that the product innovation idea developed by Chandelle Co is able to answer my problem (became the solution I was looking for). ▪ The product innovation idea that Chandelle Co developed fulfilled my desire.
Idea Screening	<ul style="list-style-type: none"> ▪ I feel that the product innovation ideas developed by Chandelle Co are able to attract the interest of many people and can compete in the market. ▪ I feel that the product innovation idea developed by Chandelle Co has a unique value that distinguishes it from other competing products that I have encountered. ▪ I feel that the product innovation ideas developed by Candelle Co are in line with my expectations.
Concept Testing	<ul style="list-style-type: none"> ▪ I am interested in the further development of the prototype developed by Chandelle Co. ▪ I found the advantages of the prototype developed by Chandelle Co.
Market Strategy/ Business Analysis	<ul style="list-style-type: none"> ▪ I love the fragrance variants from Chandelle Co's product innovation development. ▪ I like the overall concept and design of the product that Chandelle Co has developed ▪ I feel the price that Candelle Co. offers. for innovative products that are affordable and worth it ▪ I feel the price that Candelle Co. offers. for innovative products to be able to compete in the market ▪ Chandelle Co is easy to find in online marketplace ▪ I find it easy to access Chandelle Co's online store and make transactions ▪ I find Chandelle Co's social media content interesting and following the latest trends ▪ I feel that the promo offered by Chandelle Co attracts me to make a purchase
Market Testing	<ul style="list-style-type: none"> ▪ I feel that Chandelle Co's innovative products have a good level of fragrance resistanc ▪ I feel the size of Chandelle Co's innovation products is sufficient and has a fairly lor burning time.
Commercialization	<ul style="list-style-type: none"> ▪ I saw Chandelle Co's product launch through social media ▪ I saw the Chandelle Co product launch through advertising. ▪ I saw the Chandelle Co product launch via Shopee/Tokopedia e-commerce

4. Data Collection

Research data is primary data that comes from internal and external business units. Internal data comes from Chandelle Co. sales data on Chandelle Co.'s e-commerce and social media platforms from August 2020-November 2021 and is divided into 2 periods, namely the period before action research (August 2020-March 2021) and after-action research (April 2021-November 2021). Researchers will measure the success of research actions in improving sales performance by comparing sales data before and after the research action using paired t-test on SPSS.

Meanwhile, external data is data from questionnaires distributed to consumers of Chandelle Co. as the research sample unit. The sample comes from the target population, namely the people who lived in Bandung City, women aged 20-50 years and have bought Chandelle Co. products. Researchers get the target population of 967179 people. Furthermore, using the Slovin formula, the number of research samples was 100 people.

$$n = \frac{N}{1 + Ne^2} = \frac{967179}{1 + (967179)(0.1)^2}$$

Description:

n = sample size/number of respondents to be studied

N = target population size

e = the percentage of leniency of research sampling error that can still be tolerated (e = 0,1)

* Nilai e = 0,1 (10%) for large population

* Nilai e = 0,2 (20%) for small population

5. Results and Discussion

5.1 Instrument Test Result

5.1.1 Validity Test Result

Validity is a measure that describes the level of validity of a measuring instrument, a measuring instrument that is less valid has a low level of validity (Arikunto 2011). In this study, the validity of the data was tested using the Pearson Bivariate Correlation with the SPSS program. The data that was validated by the researcher was in the form of data from an interval scale questionnaire. In this study, the measurement of scores for each question item in the questionnaire used a Likert scale. The following are the results of the Pearson Bivariate Correlation test conducted by researchers on the data from the Chandelle Co. questionnaire using SPSS:

Table 1. The results of the validity test of each question item on the product innovation variable

	X11	X12	X13	X14	X15	X16	X17	X18	X19	X10
Pearson Correlation	.768**	.820**	.820**	.678**	.802**	.832**	.804**	.825**	.818**	.749**
Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
N	100	100	100	100	100	100	100	100	100	100
	X11	X12	X13	X14	X15	X16	X17	X18	X19	X20
Pearson Correlation	.857**	.752**	.841**	.784**	.831**	.813**	.857**	.863**	.667**	.629**
Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
N	100	100	100	100	100	100	100	100	100	100

Based on the table of results of the Pearson Bivariate Correlation test above, the relationship of each question (X1-X20) can be seen to the total X. The Pearson Bivariate Correlation in each question was above 70% with a p-value <1% (very significant). The product innovation variable is valid and can be forwarded to further data processing.

5.1.2 Reliability Test Result

Reliability is an index that shows the level of a measuring instrument that can be trusted (Widi 2011). The data reliability test was carried out after the validity test results showed valid results to determine the consistency and reliability of the measuring instrument if the measurement was repeated. A measuring instrument can be reliable when it produces the same results even though repeated measurements are made at different times or situations. The researcher's type of data reliability test is the Cronbach's Alpha reliability test using SPSS. Researchers used the Cronbach's Alpha reliability test to determine the reliability score of the resulting instrument. Measuring instruments and questionnaire questions can be reliable if Cronbach's Alpha score is greater than or equal to 70%. The reliability test results on the product innovation variable show the Cronbach's Alpha value of 0.968 or 96.8%. It means that researchers' measuring instruments and questionnaire questions in measuring research actions' success are reliable because the Cronbach's Alpha score obtained is greater than 70%.

5.2 Descriptive Statistic for Variables

Table 2. Results Descriptive Statistics for Variables Chandelle Co

	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10
Mean	3.74	3.6	3.58	3.56	3.61	3.67	3.64	3.58	3.7	3.62
Mode	4	4	4	3	3	4	4	3	4	4
Stdev	1.00	1.01	0.97	0.85	1.02	1.06	1.06	1.00	1.02	1.09
	X11	X12	X13	X14	X15	X16	X17	X18	X19	X20
Mean	3.78	3.78	3.71	3.62	3.6	3.64	3.64	3.6	3.59	3.54
Mode	4	4	4	4	4	3	4	4	4	4
Stdev	1.02	1.02	1.01	1.01	0.98	0.95	0.99	1.06	0.95	1.01

Based on the table 2, the average value of the respondents' highest answers is located in X11 and X12 of 3.78. Questionnaire X11 is related to the price offered by Chandelle Co. for its innovative products, whether it can compete in the market, and Questionnaire X12 related to Chandelle Co. products is easy to find in the online marketplace. Based on these results, the researcher concludes that the main variables that most influence the success of the research actions carried out are the price factor that can compete in the market and the product factor that is easy for customers to find on the marketplace platform.

5.3 Paired t-test Result

The results of action research in the form of product innovations created by Chandelle Co. based on the latest trends are analyzed and measured using a T-test or different tests using excel and SPSS programs. Measurements were made by comparing Chandelle Co's sales data before the research action (August 2020-March 2021) and sales data after the research action (April-November 2021) to determine the success of the research action.

Table 3. Paired t-test Result

	<i>After</i>	
Mean	2557625	974137,5
Variance	2,0358E+12	1,04142E+12
Observations	8	8

Hypothesized Mean Difference	0
df	7
t Stat	2,697506457
P(T<=t) one-tail	0,015374893
t Critical one-tail	1,894578605

Before doing research, the average value of sales is Rp. 974,137, lower than the average sales after the action research of Rp. 2,557,625. The value of t-stat=2.69 is greater than the t-Critical one-tail (1.89). The t count > t table shows that H0 is rejected. It means that the product innovation actions carried out in the Chandelle Co business show a positive difference in sales performance after the action. Due to the p-value of 0.015 (or p-value <0.05), this means that the positive difference that occurs in sales performance after-action research is significant.

5.4 Business Growth Performance Dashboard

Next, the author will present a business performance dashboard in the three measures of business performance produced during this action research. Performance measures to be analyzed are marketing, financial, and sales performance.

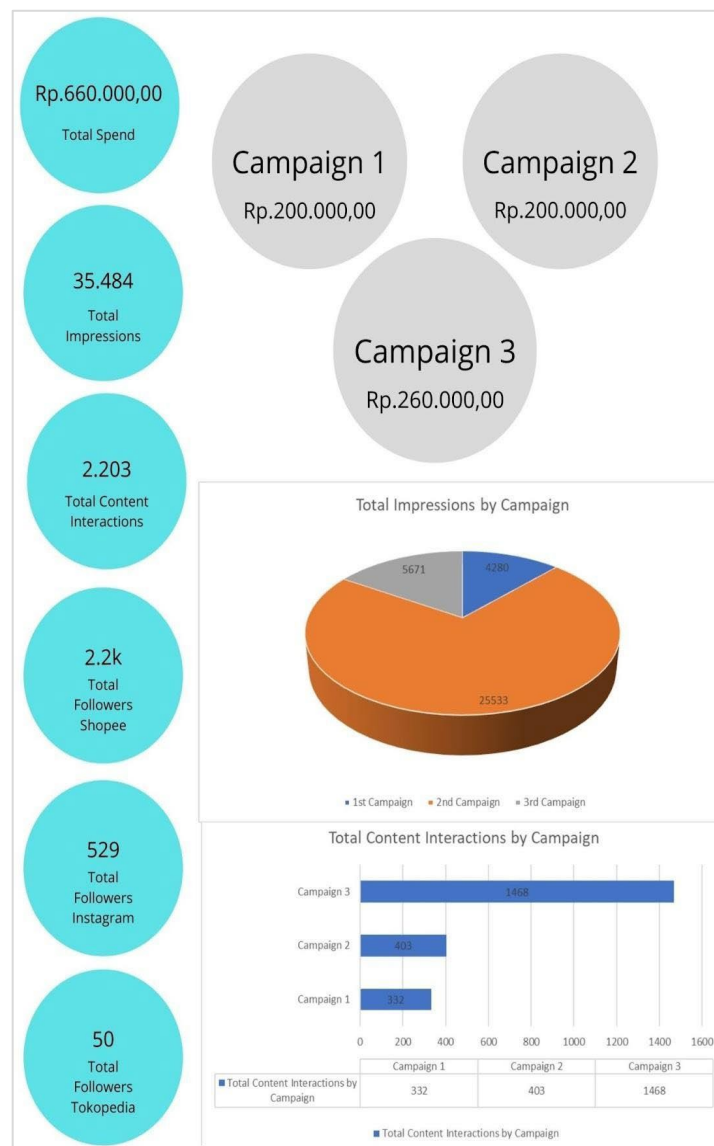


Figure. 3 Marketing Performance Dashboard

Figure .3 is Chandelle Co's marketing performance dashboard for 1 period. Chandelle Co costs Rp. 660.000,00 for advertisement. Chandelle Co's total followers on Instagram are 529, Shopee 2200, Tokopedia 50. The total impressions that Chandelle Co gets from Instagram content are 2,203 impressions. Meanwhile, the total interaction content that Chandelle Co received was 2,203.

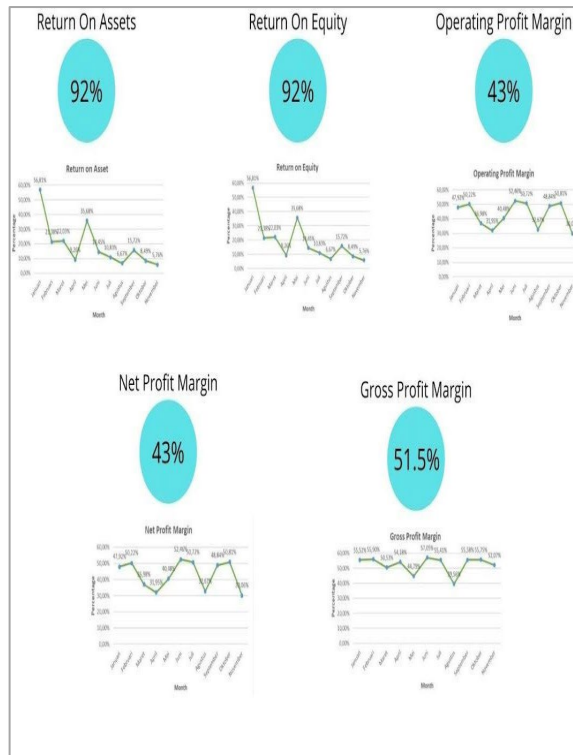


Figure .4 Financial Performance Dashboard

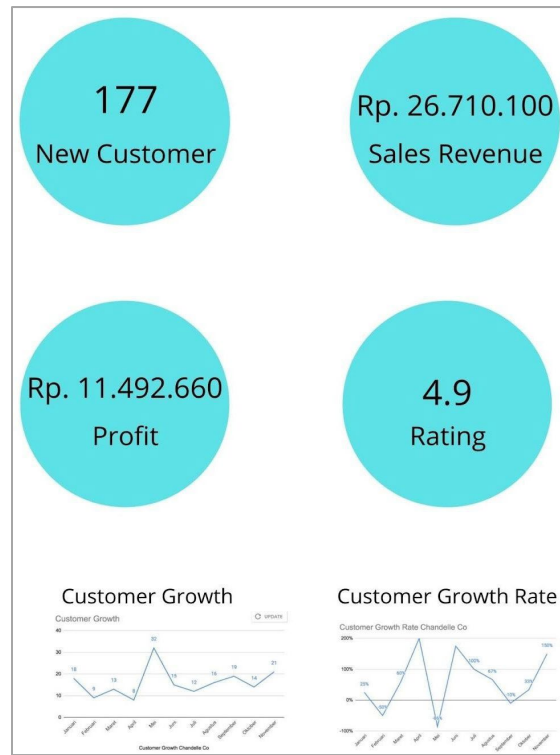


Figure .5 Sales Performance Dashboard

Fig. 4 represents Chandelle Co's Financial Performance Dashboard for 1 period. The total Return on Assets obtained is 92%, Return on Equity is 92%, Operating Profit Margin is 43%, Net Profit Margin is 43%, and Gross Profit Margin is 51.5%. Chandelle Co's total liabilities and equity are proportional to the total assets obtained by Chandelle Co of Rp. 13,628,356. Fig. 5 is Chandelle Co's sales performance dashboard for 1 period. The total new customers obtained by Chandelle Co were 177 customers. Sales revenue obtained by Chandelle Co. Rp. 26,710,100. Chandelle Co's profit was Rp. 11,492,660. From all sales transactions of Chandelle Co., the average rating obtained by Chandelle Co. is 4.9.

6. Conclusion

The researcher concludes that the development of product innovations created based on the latest trends is one strategy that can be considered by businesspeople engaged in the craft sub-sector in improving their sales performance. This product innovation follows stages from idea generation, concept testing, market strategy/ business analysis, market testing, and commercialization. The next conclusion is that the factors that can give the biggest contribution to the success of product innovation based on the latest trends in increasing Chandelle Co's sales performance are the prices offered to the market are competitive, and the products offered by Chandelle Co are easy for customers to find on the marketplace platform.

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