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Resin Coaster Business Innovation Through Design Thinking

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ABSTRACT
The purpose of this study is to establish innovations for an arts & crafts business in the form of resin coasters through solving a common problem from the target users, which is work stress. This research used a design thinking method to yield solutions and the innovations for the product. The research method used in this study is both qualitative and quantitative method through questionnaires with Google Form. The questions given were answered using a scaling system called Likert scale (1 - 5). For the qualitative data, literature review and opinions from respondents were asked through the questionnaire. Questionnaires were done twice, for empathize and testing steps, and both have passed validity and reliability tests. This study used the technique of purposive sampling, with a total of 30 respondents having certain criterias (not required to pass all) such as: Indonesian people, 18-40 years old, coffee/tea/other drinkers, office/desk-job workers, or students. The result of the design thinking method suggested that innovations by adding motivational quotes and adding unique designs/color (thermochromic) is suitable for developing the resin coaster product. It concludes that the prototype made has met the wants and needs of the target users, although there is still some room for improvements as mentioned by the respondents. Further research in looping the design thinking method from step 1 to 5 is needed to create the best version of the prototype that is ready to be sold to the market.

Keywords: design thinking, innovation, resin, coaster, stress

INTRODUCTION

Stress is a common mental health problem faced by many, regardless of their age and gender. One of the most common stress factors is from their workload or task deadlines, hence why stress is one of the primary causes of health problems from a workplace (Dewe & Cooper, 2021). But for the younger ones, stress comes from their school workload or tasks, especially since the corona virus outbreak. Due to the global pandemic, students are forced to study from home and virtually through the internet. Since there are no on-site activities and learning, students are mostly given a lot of work-from-home tasks, projects, learning, and tests. These changes in learning style have affected both students' physical and mental health, one of them being psychosocial stress (Wang et al., 2020).

Both working on a job and studying are time-consuming and require us to spend a lot of time at our desk, that fact doesn't change even during the global pandemic. One of the things people do while working is drinking coffee. Sipping on liquid caffeine in a mug is a primary drinking choice at work as it acts as a fuel and boosts our energy (Beyes et al., 2019).

Based on a research from 491 respondents among workers and students conducted by Liviena and Artini, 91.9% of them consumed coffee (Mertadana, 2022). On the other hand, Indonesian Ministry of Agriculture, Heru Tri Widarto also mentioned that the consumption of coffee in Indonesia increased by 8.22% in 2019 (Sutarjana, 2021). Both data mentioned previously stated that Indonesia's consumption and dependability on coffee is high, for both young people (students) and adults (workers).

Coffee is considered as one of the most highly consumed drinks in a workplace/office. As mentioned by Beyes et al. (2019), it's very common to see workplaces in the western regions that provide coffee for the employees or guests. As quoted by Tucker, coffee machinery is often implemented into the working environment (Beyes et al., 2019).

After such research, an idea to start a business from selling coasters arises. Drinking coasters are often related to drinking coffee, hence the reason behind creating business out of selling resin coasters. Coasters are used to protect table surfaces from liquid drops, which is perfect for coffee drinkers. But that doesn't

rule out the possibility that the ones who use coasters are only coffee drinkers. Anyone who likes to work or study while being accompanied by drinks like tea, juice, milk, canned drinks, etc. may also enjoy using coasters.

The idea is to produce coasters that are made out of resin. The reason behind that choice is because resin is becoming more and more popular these days. Many people shared contents and videos of making resin crafts, resin DIY, small businesses from resin, and many more. That's why arts and crafts trends like the DIY or Do It Yourself trends are very popular and enjoyed by many (Farikha & Guntur, 2021). Other than that, resin is quite easy to get and make as it's widely sold in Indonesia and worldwide. The cost to make is suitable for small business starters that currently don't have much money to begin with.

Resin (coaster) businesses are already becoming common and many resin sellers have competed in the market. That is why, the purpose of this study is to plan on establishing an arts & crafts business from resin coasters while also trying to find an innovation that can solve the problem discussed in this study (work stress). An innovation that has been applied now is by using thermochromic pigments to create a color changing effect when heat is applied to the coaster.

Figure 1 Wu Creatives business logo
Source: Author's documentation

The thermochromic resin coaster business was done for the trial product of Wu Creatives' business, which will be an arts & crafts business. Wu Creatives is owned by Connie Wijaya Utomo and is still in the development process and hasn't launched officially.

The study on the resin coaster business idea planning will use a design thinking method to gather data and insights. Bagli and Soyupak mentioned that design thinking is a method utilized to create a solution from a certain problem with a collaborative process from potential users so that the product yielded can

meet the wants and needs from the users (Wibowo & Setiaji, 2020). Design thinking is a repetitive and quick process that is applicable to some of the most complicated and confounding business ideas, and it is a strategic process that can show clear and direct opportunities that can be done swiftly (Ingle, 2013). It's a creativity-based problem solving method to fulfill target users' needs as it encourages many businesses in innovating ideas that are user focused (Sutadi, 2022). Hence, design thinking is important to roughly understand how well would the business idea compete in the market and will it meet the customer's wants and needs or not.

There are five steps to a design thinking method as mentioned by Kelley & Brown: Empathize, define, ideate, prototype, test (Lazuardi & Sukoco, 2019). Below are the more detailed explanations for each step.

1. Empathize

The first step is trying to have an understanding of the target user (experience, emotion, and situations). The designer's objective here is to see through the target user's perspective, so that they can fully understand their wants and needs. This step can be conducted through interviews, observations of the target user, etc.

2. Define

After empathizing with the target user, the designer needs to identify the target user's point of view that will become the structure of the product that will be made. Things that can be done is by listing user needs and using self knowledge to know what's currently going on.

3. Ideate

With all the needs listed out, the designer needs to draw out the possible problem-solving solutions. This can be done by evaluating with the designer's team to combine creativity from each designer.

4. Prototype

Ideas made from the previous step need to be immediately implemented on a prototype product. There needs to be a real (tangible) product and usage scenarios might be necessary.

5. Testing

After the prototype has been made, there will be testing on the target user. From the previous step, designers will get more insights on how to further develop the existing prototype.

RESEARCH METHOD

The research methods used both quantitative and qualitative methods. Analysis will be based on literature review and questionnaires using Google Form. According to Sugiyono (2019), questionnaire is a technique in collecting data by giving a set of written questions that will be answered by the respondents. Questionnaires will be conducted twice, one for the "empathize" step and another for the "testing" step from the design thinking method. To benchmark the questionnaire answers, respondents will be given answers on a scale using Likert Scale to identify their opinion, gesture, habit, behavior, or perception quantitatively (Sugiyono, 2019). The way Likert scale works is for applying quantitative scale to qualitative measurements. The scale usually ranges from 1 through 5, in which 1 is defined as strongly disagree and 5 is defined as strongly agree (Wexler et al., 2017). Here are the details of the scale (the adjectives may change according to the question):

1. Strongly disagree
2. Disagree
3. Neutral
4. Agree
5. Strongly Agree

For the qualitative answers, respondents will have to answer in short description in the text field provided.

Respondents will be chosen from a specific population, which is Indonesian people. Sugiyono (2019) defines population as a generalized region consisting of subjects or objects that have certain characteristics and quantities that have been determined to be analyzed and drawn to a conclusion.

This study will use the technique of purposive sampling, a technique in determining the sample based on some considerations (Sugiyono, 2019). Sugiyono

(2019) also mentioned that purposive sampling is included in a non-probability sampling, in which the researcher doesn't provide equal opportunities or chance for each element or member of the population to be selected as a sample. The criterias in determining the sample will be further discussed.

The total respondents for this study is 30 people. All 30 respondents did both questionnaires (the first questionnaire "empathize step" and the second questionnaire "testing step"). The reason behind choosing a total of 30 respondents is based on the Central Limit Theorem. According to a research on understanding Central Limit Theorem (CLT), it concludes that the most widely used and recommended sample size is $n \geq 30$ (Brussolo, 2018).

To measure the validity of the questionnaire, Pearson correlation or product moment correlation is used. The tool that will be used to measure the validity test is IBM SPSS Statistics 25. Validity is the degree of accuracy between data that occurs in the object of research and data that can be reported by researchers. Thus, the validity test was carried out to find out whether there was no difference in the data between the data reported by the researcher and the actual data that occurred in the research object (Sugiyono, 2019). The questionnaire is said to be valid if the value of Sig. < 0.05 or Pearson Correlation value > r-table value.

Then, to measure the reliability of the questionnaire, Cronbach's alpha formula is used. The tool that will be used to measure the reliability test is also IBM SPSS Statistics 25. Reliability test shows how far the measurements are reliable and trustworthy (Amanda et al., 2019). Reliability measurements can only be done after a validity test has been executed. The criteria of a data is said to be reliable if the Cronbach's alpha (α) > 0.6.

This research will also use descriptive analysis and identification from a design thinking method's theory, as mentioned in the previous section, with the purpose to show the evaluation of the motivational resin coaster business planning through design thinking method. The data to analyze will come from the questionnaire data, literature review, and self-observations. To understand on how the descriptive analysis will be conducted, here are the details on how each step from the design thinking method will be analyzed as mentioned by Widodo & Wahyuni (2021):

1. Empathize

The purpose of empathizing is to gather preliminary information from potential/target users. Data acquired will be from literature review and through a questionnaire. For the questionnaire, there are few criterias to determine the sample (table 1). Though, the sample is not required to pass all criterias.

Number	Sample Criteria
1.	Indonesian people
2.	People at the age range of 18 - 40 years old (young adults - adults)
3.	Coffee/tea/sugary/soft drinks drinkers
4.	Office/desk-job/tech/computer-relying workers
5.	Students

Table 1 Sample criteria for questionnaire
Source: Author's documentation

The sample will then be asked a set of questions through Google Forms relating to the problems discussed in this study and about the product that will be made out of them (table 2).

Number	Questions
1.	How often do you get stressed while working?
2.	What do you usually do to distract yourself when you start to get stressed while working?
3.	How long does it take for you to work on a desk in a day?

4.	How often do you work while drinking coffee/tea/other drinks?
5.	How often do you use a drinking coaster on your desk?
6.	If your answer ranges from 1-3 in the previous question, state why?
7.	Based on your opinion, what do coasters nowadays lack?
8.	What are the factors that affect your purchase when buying drinking coasters? (Options: Color, material, price, typography/graphics, other)
9.	How interested are you in coasters that can change color when in contact with heat (thermochromic)?
10.	What coaster shape do you think is the most attractive/aesthetically pleasing? (Options: Round, square, hexagon, round with raw abstract edges, other)
11.	From all the options for coaster designs below, which one is the most attractive one? (Options in images: Simple clear, floral, clear+glitter/gold flakes, colored+glitter/gold flakes, others)

Table 2 Questionnaire questions for "empathize" step
Source: Author's documentation

2. Define

The designer will list out problem identifications from data acquired from the previous step. The identification process has the purpose to understand the target user's complaints over a problem that needs to be solved. The designer will then categorize the problems identified to further explain the core of the problem based on the wants and needs of the target user.

3. Ideate

In this step, the designer will have to brainstorm, possibly with other team members (the designer's father as someone who has a role in producing the resin coaster), to share ideas and opinions to create all of the possible effective solutions from the problem.

4. Prototype

In the fourth step, the designer will then create a prototype of the resin coaster, visualizing the ideas that have been brainstormed. The designer will create a few resin coaster prototypes with different designs. Having prototypes will make it easier to get feedback from the target user. The prototype made will be as similar as the real product.

5. Testing

The designer will then test the prototype to the target user with the criterias mentioned previously (table 1). To test the prototype to the target user, the designer will give out a questionnaire showing detailed images of the prototypes and they will be given a set of questions (table 3). Through the questionnaire, the designer will acquire feedback for the prototypes that have been made. If the feedback hasn't met the wants and needs of the user, the designer will have to go through the design thinking process from step 1 to 5, and it will loop continuously until the feedback has met the wants and needs of the target user.

Number	Questions
1.	How interested are you in this motivational resin coaster?
2.	How likely do you consider yourself buying this coaster?
3.	If you buy this coaster, how often will you use it?
4.	Do you prefer a basic colored coaster/a thermochromic coaster (changes color when in contact with heat), state why?
5.	How much will you be willing to pay for this coaster?
6.	If you see motivational quotes on the coaster, how effective is it in changing your mood? (in making you more motivated/less stressed)
7.	How much do you enjoy reading/get inspired by the quotes used in the prototype?
8.	Do you prefer seeing short and simple quotes/longer but deeper ones?

9.	If you use this coaster, how often will you look at the quotes on the coaster?
10.	What do you think this prototype still lacks? What can be improved/needed a change?

Table 3 Questionnaire questions for "testing" step
Source: Author's documentation

RESULT AND DISCUSSION

The business idea here is in the shape of a product, which is a resin coaster. One of the primary purposes in developing the business idea is to solve daily problems of the target user, which is stress from workload. And through this research, the business idea is developed through all the steps of the design thinking method.

Based on literature review (as previously mentioned in the introduction), many people stress over workload. According to Dewe & Cooper (2021) stress is considered as one of the primary causes of health problems from a workplace. That showed that many people suffer stress during work and is considered as one of the most noticeable problems faced by many people daily.

Primary data from Google Form questionnaire is closed and gone into review after it has gathered a total of 30 respondents.

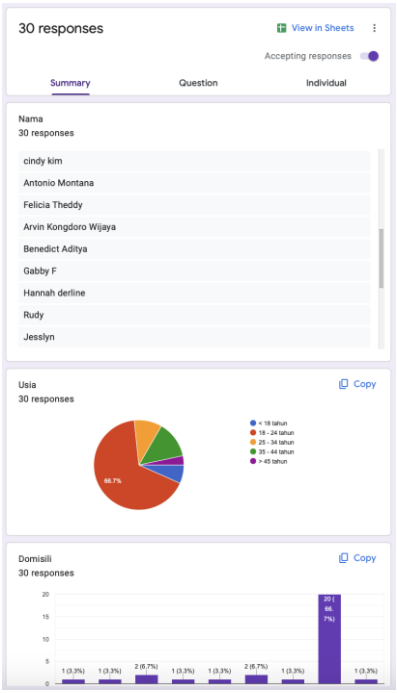

Figure 1 Questionnaire responses proof
Source: Author's documentation

After reviewing the questionnaire, data showed that most of the respondents (66.7%) are at the age range of 18-24 years old and currently live in Surabaya, Indonesia. 53.3% of them haven't worked (currently studying). 43,4% of respondents answered that they often (scale: 4) get stressed and the other 43.4% of respondents answered that they always (scale: 5) get stressed during work. Many respondents mentioned that they combatted work stress by distracting themselves with their phones (chatting, social media). Some others mentioned that they prefer to relax, listen to music, play games, watch movies, eat snacks/drink, and sleep.

53.3% of respondents answered that they spend a very long time (scale: 5) sitting at a desk while working. 36.7% of respondents answered that they often (scale: 4) drink coffee/tea/other drinks while working. 30% of respondents answered that they never use drinking coasters on their desks. Most respondents who don't or rarely use coasters mentioned that they feel it's such a hassle, they are lazy to use them, rarely drink coffee/tea/other drinks, and one mentioned that coasters are usually something a restaurant/cafe would use (not really something you would use at home).

In terms of purchasing decision, 93.3% answered that the material is one of the factors they look at, followed up by the price (73.3%), and color (60%). Some respondents mentioned that the coasters they have used/sold nowadays still make the table wet (liquid still spreads). Most respondents mentioned that the minuses of coasters sold out there are having uninteresting design and not variative. Others also mentioned that coasters are expensive and not durable.

Majority (82.8%) of respondents answered that they are very interested in thermochromic coasters. 40% of respondents answered that they prefer hexagon shaped coasters, followed by round shaped coasters (36.7%). And lastly, 50% of respondents answered that they prefer colored+glitter/gold flakes coasters.

All quantitative data mentioned previously has gone through validity and reliability measurements, in which the questionnaire passed both.

Correlations

		Q1	Q2	Q3	Q4	Q5	Total
Q1	Pearson Correlation	1	.534**	.481**	.285	.115	.698**
	Sig. (2-tailed)		.002	.007	.128	.543	.000
	N	30	30	30	30	30	30
Q2	Pearson Correlation	.534**	1	.382*	.151	.098	.624**
	Sig. (2-tailed)	.002		.037	.425	.605	.000
	N	30	30	30	30	30	30
Q3	Pearson Correlation	.481**	.382*	1	.420*	.266	.789**
	Sig. (2-tailed)	.007	.037		.021	.155	.000
	N	30	30	30	30	30	30
Q4	Pearson Correlation	.285	.151	.420*	1	.338	.734**
	Sig. (2-tailed)	.128	.425	.021		.068	.000
	N	30	30	30	30	30	30
Q5	Pearson Correlation	.115	.098	.266	.338	1	.451*
	Sig. (2-tailed)	.543	.605	.155	.068		.012
	N	30	30	30	30	30	30
Total	Pearson Correlation	.698**	.624**	.789**	.734**	.451*	1
	Sig. (2-tailed)	.000	.000	.000	.000	.012	
	N	30	30	30	30	30	30

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

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

Table 4 Validity test result for questionnaire 1 using SPSS
Source: Author's documentation

In table 4, it is shown that all the significance values are below the value of Sig. < 0.05. From question 1 - 4, the Sig. value showed as .000. Then, for question 5, the Sig. value showed as .012. It can be concluded that the questionnaire here is valid.

Case Processing Summary

		N	%
Cases	Valid	30	100.0
	Excluded[a]	0	.0
	Total	30	100.0

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

Reliability Statistics

Cronbach's Alpha	N of Items
.672	5

Table 5 Reliability test result for questionnaire 1 using SPSS
Source: Author's documentation

In table 5, Cronbach's Alpha value showed as .672. As previously mentioned, the criteria of a data is said to be reliable if the Cronbach's alpha (α) > 0.6. So, it can be concluded that the questionnaire is reliable/has a high reliability.

Define step has the main purpose to narrow down or conclude the varieties of the target users' wants and needs (Amalina et al., 2017). All the different wants will then be categorized in table 6 to make it simpler, clearer, and easier to understand.

Problems	Categories
Many user have complained that they often get stressed while working	User behaviour
Users have mentioned that they don't have/rarely use coasters because they feel it's a hassle/too lazy to use them	Product practicality
Some coasters still allow liquid to spread on table (useless)	Product functionality
Some coasters out there aren't durable	
Coasters out there has uninteresting design and not variative	Product feature
Some of the good coasters out there are expensive	Pricing

Table 6 Categories of problems
Source: Author's documentation

After identifying what's wrong/what needs to be improved with coasters nowadays and adjusting with the target users' problems, wants and needs, the designer discusses the innovation ideas with team members and some other network to find the solutions.

Problems	Solutions
Many user have complained that they often get stressed while working	Adding motivational quotes on the surface of the coaster hopes of lightening up the user's mood every time they pick up their drinking mug from the coaster.
Users have mentioned that the don't have/rarely use coasters because they feel it's a hassle/t lazy to use them	Using a very unique coloring, a thermochromic pigment that can change color depending on the temperature. Gives the coaster a much more interactive and unique feel to it. Might motivate people to use coasters as something unique can excite them.
Some coasters still allow liquid to spread on table (useless)	Using ingredient from epoxy resin (durable, high heat resistance, doesn't absorb water which won't allow liquid spread on table)
Some coasters out there aren't durable	
Coasters out there has uninteresting design, not variative, a lot is not customizable	Coasters made will have different variations, aesthetic designs, and the business might go customizable.
Some of the good coasters out there are expensive	Coasters will be at a fairly reasonable price, ranging from 30,000 - Rp 50,000.

Table 7 Solution to problems
Source: Author's documentation

Through problem-solving ideations, the designer made some prototype sketches before going into the trial and error(s) for the prototype.

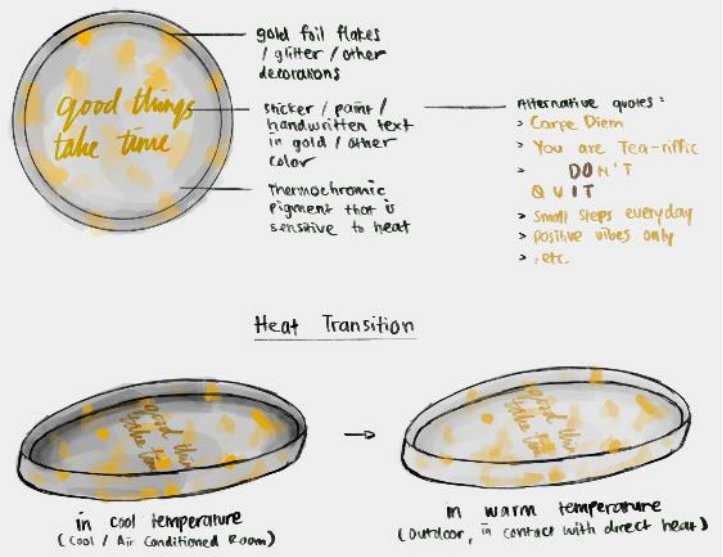

Figure 3 Prototype sketches
Source: Author's documentation

In Figure 1, prototype sketches of how the coaster will look are being visualized. Details from table 7 are implemented onto the prototype sketches, such as the use of thermochromic pigment, adding motivational quotes, and the design of the prototype coaster. A visualization of how the color transitions when in contact with heat is also drawn in figure 1.

Figure 4 Prototype sketches
Source: Author's documentation

Figure 2 explains the visualization of the coaster heat transition when in direct contact with a hot mug. It shows how it slowly turns from opaque black to transparent/murky gray when heat is applied to the coaster surface.

Figure 5 Early resin coaster prototype #1
Source: Author's documentation

Figure 3 shows the early prototype for the motivational resin coaster. In this prototype, the designer was just starting to make the first trial and was trying to experiment on the thermochromic pigment. The result is as expected. The black opaque color in the resin can change to transparent or murky gray color when in contact with heat. In the first prototype trial, there are still many flaws including not using enough gold foil, uneven pigment mixing, bubbles and scratches appearing on the resin coaster surface.

Figure 6 Early resin coaster prototype #2
Source: Author's documentation

The second prototype trial is for the typography trial. In the second trial (figure 4), the designer tried to experiment by mixing acrylic and black thermochromic pigment. Then, to paint the quotes onto the coaster, custom stencil is used. But, the designer used paintbrush and thick acrylic paint and it caused the paint to spread. The paint didn't get transferred as neatly as the writings on the custom stencil, though the heat transition works perfectly fine. After the second trial, the designer decided to not put thermochromic pigment onto the quotes, but only on the resin coaster.

Figure 7 Final prototype for the motivational resin coasters
Source: Author's documentation

The final prototype for the motivational resin coaster has been made based on the ideas from the previous step. The coaster is made from epoxy resin which makes it more durable and high heat resistant. One of the most prominent and unique features from the coaster is that it can change color depending on the temperature. It uses thermochromic pigment that makes the color opaque in cool temperatures and almost transparent in warm temperatures. Motivational quotes are added to help inspire and motivate the user when drinking. The quote here is handwritten and taped onto a clear mica paper. Future changes regarding the technique for the typography might happen, so that it's easier and more efficient.

Based on a research on the effect of visual elements (consumption-inducing message on coasters) and consumers' beverage consumption in a bar, it can be concluded that visual elements have a positive impact in influencing the consumers' behaviors (Kim et al., 2022). Putting short messages in the form of text can evoke certain emotions. And from the research done by Kim et al. (2022),

when giving out coasters to the bar customers with a written message “One more drink!”, it increased the number of drinks consumed by 0.6 per customer.

The testing was done through a questionnaire using Google Form. The 30 respondents who have answered the first questionnaire will then be asked to answer the second questionnaire for the prototype testing.

56.7% of the respondents answered that they are very interested (scale: 5) with the motivational resin coaster. 46.7% of the respondents answered that it’s very likely (scale: 5) for them to purchase the motivational resin coaster for their needs. Most respondents (66.7%) answered that they will always (scale: 5) use the motivational resin coasters when they purchase them.

Almost all of the respondents (99.3%) prefer thermochromic color rather than basic solid color on their coaster, their reasons being: it’s cooler, more unique, not boring, looks interactive, cute, fun, and one mentioned that it might be useful to know when your hot drink has already gone cold.

In terms of pricing, 40% of the respondents answered that they are willing to pay for the coaster at a price range of Rp 30,000 - Rp 40,000.

Regarding motivational quotes, 36.7% of the respondents answered that reading motivational quotes is effective (scale: 4) in changing their mood to become more motivated/less stressed, and the other 30% of the respondents answered that it’s very effective (scale: 5). 40% of the respondents answered that they are very interested/inspired (scale: 5) when they read the quotes as shown in the prototype. Most of the respondents (73.3%) answered that they prefer short and simple motivational quotes to read. 36.7% of the respondents answered that they will always (scale: 5) look or pay attention to the motivational quotes written on the coaster.

For the prototype flaws, there are different opinions from some of the respondents:

1. Open custom orders
2. Develop on other coaster shapes
3. Don’t just use basic black and white color
4. Use less gold foil/decorations (respondent who prefer clear and simple design)
5. Take note on the font usage and the color
6. Make it more neat and finished nicely

7. Have a smaller size variation so that it won't take up a lot of desk space and easier to store. All quantitative data mentioned previously has gone through validity and reliability measurements, in which the second questionnaire passed both of them

Correlations

		Q1	Q2	Q3	Q4	Q5	Total
Q1	Pearson Correlation	1	.698**	.758**	.721**	.641**	.880**
	Sig. (2-tailed)		.000	.000	.000	.000	.000
	N	30	30	30	30	30	30
Q2	Pearson Correlation	.698**	1	.744**	.722**	.585**	.876**
	Sig. (2-tailed)	.000		.000	.000	.001	.000
	N	30	30	30	30	30	30
Q3	Pearson Correlation	.758**	.744**	1	.581**	.606**	.857**
	Sig. (2-tailed)	.000	.000		.001	.000	.000
	N	30	30	30	30	30	30
Q4	Pearson Correlation	.721**	.722**	.581**	1	.657**	.863**
	Sig. (2-tailed)	.000	.000	.001		.000	.000
	N	30	30	30	30	30	30
Q5	Pearson Correlation	.641**	.585**	.606**	.657**	1	.816**
	Sig. (2-tailed)	.000	.001	.000	.000		.000
	N	30	30	30	30	30	30
Total	Pearson Correlation	.880**	.876**	.857**	.863**	.816**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	
	N	30	30	30	30	30	30

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

Table 8 Validity test result for questionnaire 2 using SPSS
Source: Author's documentation

In table 8, it is shown that all the significance values are below the value of Sig. < 0.05. From question 1 - 5, the Sig. value showed as .000. So, it can be concluded that the questionnaire here is valid.

Case Processing Summary

		N	%
Cases	Valid	30	100.0
	Excluded[a]	0	.0
	Total	30	100.0

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

Reliability Statistics

Cronbach's Alpha	N of Items
.908	5

Table 9 Reliability test result for questionnaire 2 using SPSS
Source: Author's documentation

In table 9, Cronbach's Alpha value showed as .908. As previously mentioned, the criteria of a data is said to be reliable if the Cronbach's alpha (α) > 0.6. So, it can be concluded that the questionnaire is very reliable/has a very high reliability.

After Testing

After some considerations from the respondent's suggestions, there were some revisions made for the thermochromic resin coaster. The revisions were to make more shape and color variations, make the font neater, and having the less gold foil and decorations option.

Figure 8 Resin coasters after revisions
Source: Author's documentation

Figure 9 Resin coaster after revisions
Source: Author's documentation

Figure 10 Resin coasters after revisions
Source: Author's documentation

The main objective of this research is to make plans on establishing an arts & crafts business in the form of resin coasters while also trying to find an innovation that can solve the problem discussed in this study, which is work stress. The business innovation planning uses a design thinking method to create a solution(s) from the problem faced by the target users so that the final product made by the designer can meet their wants and needs.

The solution that is produced through this study is by using motivational quotes on the coaster to help the target users face their daily work stress. Some

adjustments on the coaster are also made to meet the wants and needs of the target users, such as using durable materials, innovative designs, and developing the product functionality and practicality. Understanding the favorable price range from the target users (at around Rp 30,000 - Rp 40,000) is also one of the solutions found.

Through testings from the questionnaire, it can be seen that the prototype has met the wants and needs of the target users. From the questionnaire, 56.7% of the respondents answered that they are very interested with the motivational resin coaster and then 46.7% of the respondents answered that it's very likely for them to purchase the motivational resin coaster for their needs. Although some have mentioned that there are still some flaws or there is still some room for improvements. Therefore, further research is recommended to develop the best prototype that is ready to be launched and sold to the market. The further research should involve looping the whole design thinking method back from step 1 to step 5. Moreover, prototype testing is better done directly through real life interactions and not through questionnaires as the target user can directly feel, see, and use it directly.

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