

# IMPLEMENTATION OF DESIGN THINKING IN THE CREATION OF NIRMALA TAB PRODUCTS

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## Abstract

This study aims to determine consumer interest in clean water filters that are beneficial for Indonesian society. Design thinking, quantitative methods, questionnaires, interviews. Based on the results of testing the Nirmala Tab product prototype using the Design Thinking method, the prototype created attracted many potential consumers to Nirmala Tab. This research was limited in its testing and development of improved products. This research is useful for preventing the impending clean water crisis in Indonesia and for business and management studies.

**Keywords:** *Design thinking, Product innovation, water, SDG's no.6*

## 1. INTRODUCTION

A product is anything that can be offered to consumers for attention, acquisition, use, or consumption (Ariwibowo, 2023). In business, creating the best product that meets consumers' wants and needs is crucial. While various similar products can compete with a company, consumers choose only one product that best meets their needs and solves the problem for which they are choosing the product. Companies must focus on research and development and other product activities to ensure their products are competitive internationally (Hasibuan, 2022). Product quality is a key factor for potential buyers when deciding to purchase goods or services with superior value (Aghitsni, 2022). One marketing strategy aimed at increasing a company's competitiveness is product development (Husniar, 2023).

While some products offer similar solutions to similar problems, creating a different product to address a specific consumer problem is a distinct advantage, also known as product innovation. Innovation is the ability to see things differently and in new ways (thinking outside the box) (Grecia & Puspitowati, 2022). Innovation is the activity of implementing new products and ideas (Lorenza & Hidayah, 2022). To attract more consumers and make them choose a company's products, thus achieving good business performance, companies can create new products in various forms (Muhammad, Rida, & Etty, 2020).

One important product consumed by consumers is clean water. Clean water is a sustainable development issue, or Sustainable Development Goal (SDG) number 6, which aims to provide access to clean water and adequate sanitation for all. According to a 2020 report by the National Development Planning Agency (Bappenas), several regions in Indonesia will experience a clean water shortage or crisis by 2045. The proportion of areas experiencing water crisis is also predicted to increase from 6% in 2000 to 9.6% by 2045.

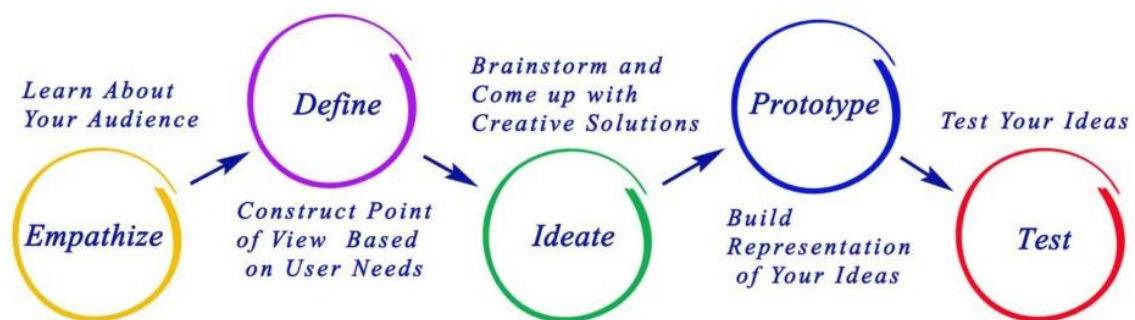
Innovation in providing clean water for the Indonesian people is crucial to prevent an impending clean water crisis. Innovation in the creation of clean water products can be achieved by creating a water filter that converts unsafe water into clean, usable water, known as the Nirmala Tab.

## 2. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Several other researchers have conducted research to prevent the clean water crisis, including research by Kornita (2020), which found that to meet the community's need for clean water in Bengkalis Regency, an SO strategy can be used, namely a strategy to achieve policy objectives by leveraging existing strengths and potential/opportunities through collaboration between stakeholders in meeting these needs. Another study conducted by Pulansari et al. (2022) explained that producing clean water suitable for use involves collecting water from springs into a reservoir, then feeding the water from the reservoir into a water purification machine. Next, a three-stage filtration process is carried out: pre-filtration, filtration with activated carbon, and micro-filtering. After the drinking water has gone through the filtration process, disinfection is carried out. The drinking water packaging is then washed and sanitized. The drinking water is then filled into packaging containers and continued with the packaging process. The importance of product innovation has been emphasized by other researchers, such as Azhari & Ali (2024). Product innovation plays a crucial role in maintaining a company's competitiveness and relevance by introducing new or improved products or services that better meet customer needs and desires than competitors. Product innovation also impacts a company's revenue (Putri & Arif, 2023).

## 3. RESEARCH METHODOLOGY

### *Design Thinking Process*



Picture 1. *Design Thinking Framework*

The design thinking method is used to solve problems quickly. There are five stages in design thinking: empathize, define, ideate, prototype, and test. The research method used was quantitative, using a questionnaire through the Google Forms application. A population is a combination of all elements in the form of people or things that share similar characteristics (Ariwibowo, 2024). The population used in this study were Palcomtech students and several respondents deemed to have similar characteristics to Palcomtech students, such as workers and housewives. The sample is a subset of the population or can be considered representative of the larger population (Ariwibowo, 2024). The sampling technique used was probability sampling, a sampling technique that provides an equal opportunity for each member to be selected. To obtain sample members, simple random sampling was used, where sample

members were drawn randomly because the population was considered homogeneous (Sugiyono, 2022). The respondents obtained were 51 respondents. The results of this study were validation of the prototype results from consumers in positive or negative form.

#### 4. RESULTS AND DISCUSSIONS

Product innovation using the design thinking method is

##### **Empathize**

Based on a consumer survey, it was found that 51% of consumers experience difficulties in dealing with the clean water crisis.

##### **Define**

Based on a consumer survey, it was found that even though consumers have access to clean water, many still experience difficulties in dealing with the clean water crisis.

##### **Ideate**

To address the problems faced by consumers, the research team created a product innovation called "Nirmala tab." This product innovation uses several natural resources found in Indonesia, such as coconut fiber, coarse charcoal, zeolite, and sand.



**Picture 2. Nirmala Tab Product**

Using NirMalaTAB is quite easy. Connect the filter tube to the water tower outlet pipe in an upright and secure position. If using the tablet variant, insert a NirMalaTAB tablet into the top of the filter. Then, open the water tower tap and let the water flow through the filter containing coconut fiber, coarse charcoal, zeolite, and sand. The water coming out of the filter will be cleaner and ready for daily use.

## Testing

After the prototype was completed, the research team conducted a trial to gauge consumer interest in the prototype. The results of the trial, conducted through interviews, were

- The product is considered beneficial, especially for areas with limited access to clean water.
- Guaranteed safety—Respondents felt the product was safe to use.
- Environmentally friendly—The environmentally friendly concept is a preferred added value.
- Attractive concept—The product's idea and design received positive appreciation.
- Product uniqueness—The product has unique characteristics that make it stand out from other solutions.



Picture 3. Nirmala Tab Respondent

## 5. CONCLUSION

Based on the results of testing the Nirmala Tab product prototype using the design thinking method, it was found that the prototype attracted many potential consumers to use Nirmala Tab. The prototype created by the researchers was able to address existing consumer challenges, namely that 51% of respondents still experience difficulty accessing clean water.

## LIMITATION AND STUDY FORWARD

A limitation of this study is the limited validation of the product prototype, and further research is needed to improve the product and ensure it is usable by consumers. Suggestions for other researchers include creating innovations to contribute to solving clean water problems in line with sustainable living programs.

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