

PRODUCT DESIGN DEVELOPMENT OF SYFOIN USING HOUSE OF QUALITY

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Keyword

Customer Preference, Meal Kit, Product Design, House Of Quality

Abstract

This research attempts to address the business problem that SYFO is currently experiencing, particularly the difficulty of boosting sales and enhancing customer retention for their meal kit product. To discover areas of unhappiness, the search starts by interviewing past clients. The results show a mismatch between client expectations and the business's offers, which calls for a more thorough inquiry using business and root cause analysis. Lack of resources and unambiguous standards for incorporating consumer preferences into product design are determined to be the root of SYFO's issue. Customer preference attributes, technical preference attributes, and information on priority levels are gathered from literature reviews and 102 respondents using the House of Quality (HOQ) framework. The effectiveness of SYFO's products is compared to that of Sumibi and reFresh. The result of the HOQ framework indicates areas that need improvement in the prior product design and offers a priority list for product development. The suggested remedies to the problems mentioned include finding special ingredients and creating appealing, useful packaging

INTRODUCTION

According to a recent Populix research, six out of ten Indonesians are giving their health a higher priority through making dietary and lifestyle choices. While many people work to maintain a healthy lifestyle by watching their calorie intake and exercising frequently, they frequently struggle to keep up with appropriate eating habits. Indonesians are turning to businesses that provide wholesome and diet-appropriate substitutes to remedy this. Around 46% of Indonesians, especially men aged 36 and older, are now more aware of how many calories they consume, while 11% of respondents, mostly women, prefer to follow a diet plan to maintain their health (Populix, 2022)

Despite rising awareness of the necessity of leading a healthy lifestyle, sustaining healthy eating habits remains difficult. Meal planning and preparation is one tactic that hasn't quite popular in Indonesia while growing in popularity in United States (Cho, M., 2020). Ducrot et al. (2017) found that people who planned their meals had higher-quality diets with a wider variety of foods and were less likely to be overweight, particularly women. Meal planning, however, may be time-consuming and require several processes, including choosing a menu, grocery shopping, chopping, and cooking.

Numerous research has looked into why people cook less, and time constraints and a lack of cooking abilities have been found to be significant obstacles to making meals at home (Ducrot et al., 2017). As a result, SYFO, Indonesian business which offers ready-to-cook meal kits, is trying to make the process simpler and relieve them of the stress of meal planning. In a nutshell, meal planning means preparing food ahead of time in large batches to be eaten later as meals or to be used as

ingredients for multiple meals or snacks (Klein, L. C., & Parks, K. A., 2020). With an emphasis on providing high-value products and enhancing customer happiness, this research makes use of the Quality Function Deployment (QFD) approach and House of Quality (HOQ) tools to ascertain client preferences and enhance SYFO's product design.

METHOD

a nutshell this study uses HOQ approaches to combine qualitative and quantitative research in order to explore customer preferences for meal kits and measure how important these preferences are. The HOQ's core principle is that goods should be crafted to satisfy the tastes and preferences of their intended users. Further, HOQ is frequently used to determine the links between needs based on various perspectives (Temponi, C et. al, 1999). Some data needed to complete the HOQ framework are customer preference attributes, technical preference attributes, importance rating, and competitive assessment.

Customer preference is the propensity of consumers to select one good or service over another based on their unique preferences, requirements, and needs. It is a key factor in the development of new products, as it can help companies understand what customers want and need (Vinokurova, 2019). The customer preference attributes were obtained through literature reviews and interviews with previous and potential customer of SYFO. The target market of SYFO are people who aged between 25-39 years old and are living in Bandung and Jakarta. The interviews were conducted to 5 respondents using Zoom platform.

One of the rooms of HOQ involve translating customer preference into design concerns. Company needs to identify measurable attributes that will fulfill customer preferences. The technical preference attributes were collected by doing literature review and looking into internal operational data.

Knowing the importance rating of customer preferences helps the company balance the cost of fulfilling the preferences. This research uses Quantitative approach to collect the data with the Isaac and Michael's as the formula to calculate the sample of population on the respondents which have a total of 3,158,646 people, 582,162 people in Bandung (BPS, 2021), and 2,576,484 people in Jakarta (BPS, 2022). The result of the calculation is 96.02, which means that the approximate respondent needed for this research is 96 respondents. Though, the researchers were able to gain 102 respondents to participate in the questionnaire.

Sumibi and refresh, Indonesian meal kit brands, are to be compared to SYFO's product performance in order to complete the competitive assessment. Competitive assessment is done to provide managers with a complete picture of the competitive landscape confronting a firm. The core idea behind this is to use a systematic approach to identify current and future rivals to a firm, assess the strengths and weaknesses of current and future rivals and determine a match between a competitor's strategies and capabilities. (Fisher, G., Wisneski, J. E., & Bakker, R. M., 2020). To obtain the product performance data, questionnaires were spread to each companies' customers.

The study uses HOQ framework in an effort to bring insight into attributes that could use improvement. As a result, the company will be able to prioritize product development that is in line with customer preferences and optimize product design. The research's ultimate goal is to increase sales and retention rate, operational effectiveness, customer satisfaction, and SYFO's overall performance in providing meal kit goods.

RESULTS

Below is the list of result for customer preference attributes collected from literature reviews

- The key justification for buying the meal kit is the **ease of preparing**. Women frequently express satisfaction with **product quality** and **packaging** (이은., 김유., & 최미., 2021)
- The most significant meal kit qualities were discovered to be two attributes that indicate **high quality food dishes** and **menu variety** since they both significantly

increased hedonic and functional value for consumers (Cho, M., Bonn, M. A., Moon, S., & Chang, H., 2020)

- **Convenience** and price among the selection attributes of chicken soup meal kit products had a significant impact on satisfaction. Among the meal kit purchasing features, ease and cost had an impact on the consumer's propensity to make another purchase. It was established that the intention to repurchase was significantly impacted by satisfaction with the meal kit (Kim, M. S., & Kang, A., 2022)
- **Halal** (Islamically permissible), cost, **service qualities** are **branding** are the order of importance things for foodservice industry in Malaysia. (Abdullah, F., Abdurahman, A. Z. A., & Hamali, J., 2013)

The customer preference attributes used in this research is divided into 7 categories with the total of 11 attributes that are obtained from previous literature review and interviews. The list can be seen in

Table 1.
 Table 1. Customer Preference Attributes

Category	Attribute
Product Quality	Healthy and fresh ingredients
Packaging	Attractiveness
Menu Variety	Various recipes option
	Unique ingredients
Convenience	Time reduction (on preparing, cooking, and cleaning)
	Well-provided (ingredients, recipe, spices, etc)
Service Quality	Easiness to order and track the order
	Helpful customer service
Branding	Well-known brand
	Good ad and promotion
Halal	Serving Halal food

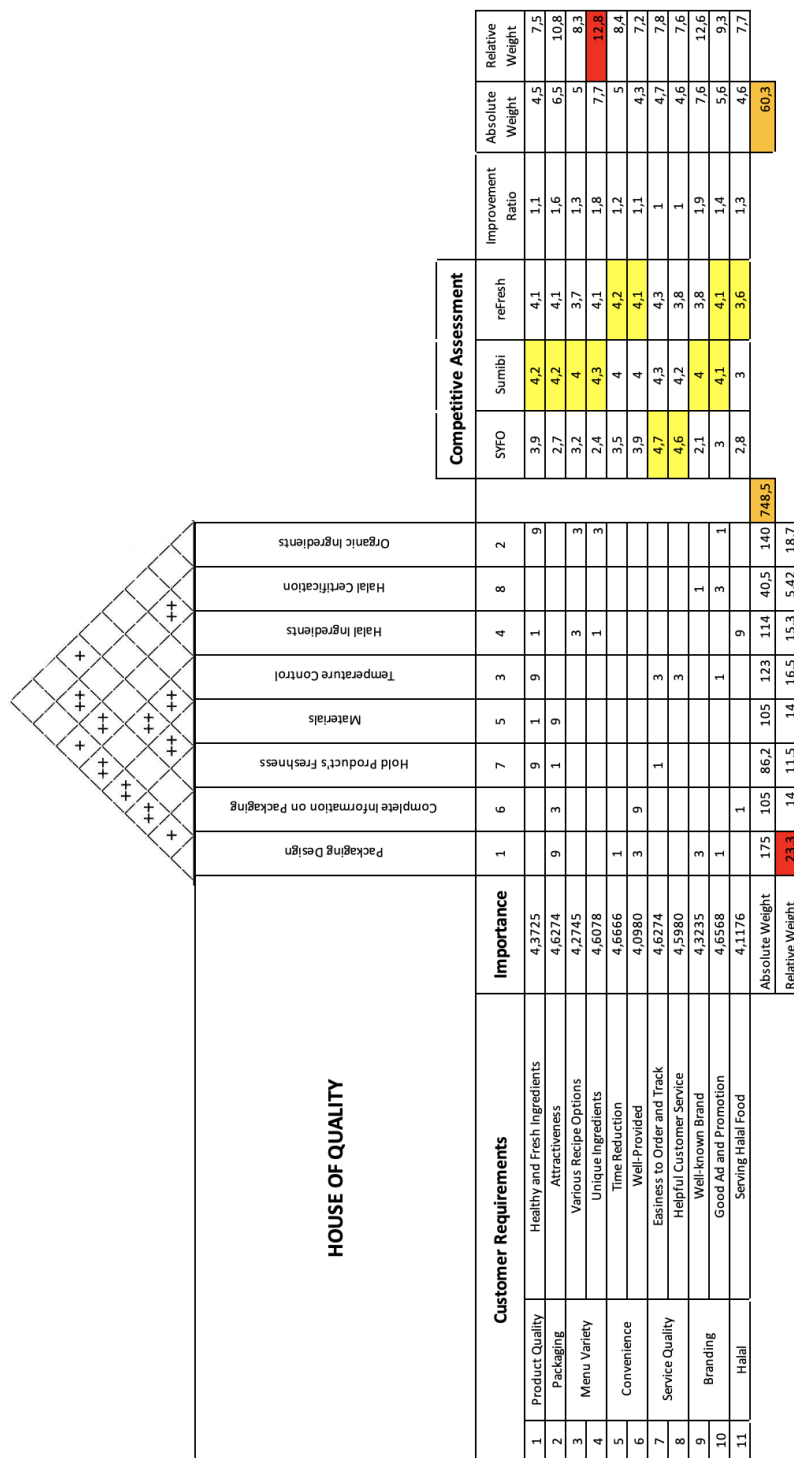


Figure 1. House of Quality Analysis

Data analysis is a process of inspecting, cleansing, transforming, and modeling data with the goal of discovering useful information, informing conclusions, and supporting decision-making (Brown, M. 2014). In today's business, data analysis contributes to more scientific decision-making and helps firms run more efficiently (Xia, B. S., & Gong, P., 2014). The primary and secondary data collected will be analyzed with the House of Quality framework of Quality Function Deployment.

The HOQ analysis shows that the major improvement needed to be done by SYFO is to incorporate unique ingredients into the meal kit product. The other top two priority to make improvement are branding and packaging attractiveness. However, this research was intended to find the priority of attributes to create a better product design. Therefore, the improvements that is being the prime concern to this research is the ingredients uniqueness and the attractive packaging.

Table 2. Customer Preference Result

Attributes	Importance Level	Improvement Ratio	Relative Weight (%)	Ranking of Improvement
Unique Ingredients	4.6	1.8	12.8	1
Well-known Brand	4.3	1.9	12.6	2
Attractiveness	3.6	1.6	10.8	3
Good Ad and Promotion	4.7	1.4	9.3	4
Time Reduction	4.6	1.2	8.4	5
Various Recipe Options	4.3	1.3	8.3	6
Easiness to order and track the order	4.6	1	7.8	7
Serving Halal Food	4.1	1.3	7.7	8
Helpful Customer Service	4.6	1	7.6	9
Healthy and Fresh Ingredients	4.4	1.1	7.5	10
Well-provided	4.1	1.1	7.2	11

Table 2 reveal the summarize result of customer preference regarding meal kit products. It consist of the attributes, importance level, improvement ratio, and relative weight that are listed based on the ranking of improvement priority. Knowing the importance rating of customer preferences helps the company balance the cost of fulfilling the preferences. (Hauser, J. R., & Clausing, D., 1988). It can be seen that SYFO has a lot of enhancements to be done based on the improvement ratio that mostly greater than 1. The result shows that unique ingredients has the highest improvement ratio with 1.8 weighing.

Table 3. Technical Preference Result

Attributes	Absolute Weight	Relative Weight (%)	Ranking of Improvement
Packaging Design	174.6	23.33	1
Organic Ingredients	140.1	18.72	2

Temperature Control	123.1	16.45	3
Halal Ingredients	144.3	15.27	4
Materials	105	14	5
Complete Information in Packaging	105	14	6
Hold Product's Freshness	86.2	11.5	7
Halal Certification	40.5	5.42	8

Other than customer preferences, there are technical aspects needed improvement. The result of technical preference result can be seen in Table 3. According to the analysis, packaging design, organic ingredients, and temperature control are the top three priority for SYFO to improve.

DISCUSSION

4.1 Business Solution Alternatives

4.1.1 Prioritize Unique Ingredients Sourcing

Based on the HOQ result, customers have a huge preference regarding the uniqueness of the ingredients in meal kit products with a relative weight of 12.8% out of the 11 attributes. Having meal kit products with unique ingredients is another thing that sets SYFO apart from competing competitors. There are a few objectives that must be done in order to implement this solution:

4.1.1.1 Conduct Research and Identify Ingredients

The business must first decide which unique ingredients it wants to use in its meal kit products. These ingredients may include organic produce, rare goods, or specialized spices. By researching these items, the business will be able to determine whether it would be possible and practical to use them in the meal kit recipe. These ingredients can be found and researched by the business itself, by consulting specialists (such as the chef we have a connection with), or even by asking customers what they want to see on the menu.

4.1.1.2 Finding Reliable Supplier for Ingredient Sourcing

The business should then look into suppliers to find the necessary elements. When looking for a supplier, some variables including quality, dependability, and sustainability practices will be taken into account.

4.1.1.3 Ensure the Quality of Ingredients

The ingredients' overall quality, taste, and freshness will be evaluated. This is crucial to perform since it will guarantee the uniform quality of the products used in the meal kit product. To preserve the standard of the meal kit product, the company must also create policies for the rejection or replacement of inferior ingredients. Additionally, during product testing, the ingredients will be examined in the actual product.

4.1.1.4 Develop Efficient and Effective Supply Chain Strategies

The business must develop an efficient supply chain strategy while testing the new ingredients in the meal kit product. In order to reduce lead times and preserve the freshness of each ingredient, this method is required.

Feasibility: The company is capable of achieving all of the objectives listed above. The business has the internal resources to carry out all tasks or it can hire outside help to look for the necessary ingredients. This is why it is thought that this solution can be implemented.

Table 4 shows the OKR for the first business solution, prioritizing unique ingredient sourcing that includes the objective, key result, and person in charge for each business solution.

Table 4. Objective Key Result - Prioritizing Unique Ingredient Sourcing

Objective	Key Result	PIC
Conduct research and identify ingredients	Market research regarding ingredients in detail	CMO
	A list of 3 feasible ingredients	COO
	An ingredient database with specification, sourcing information, and cost	COO
Finding reliable supplier for ingredient sourcing	Identify and evaluate 6 potential suppliers	COO
	Onboard 3 suppliers	COO, CEO
	Develop a supplier evaluation framework	COO
Ensure the quality of ingredients	Conduct internal quality testing on 6 samples	COO
	Achieve a customer satisfaction rating of 80% regarding ingredient quality based on further market testing	COO, CMO
Develop efficient and effective supply chain strategies	Optimize ingredient inventory management by reducing 10% inventory holding costs	COO
	Achieve a cost reduction of 20% in ingredient sourcing expenses	COO

4.1.2 Develop an Attractive and Functional Packaging

The third factor that customers prioritize when choosing a meal kit product is attractive packaging. Along with being visually appealing, packaging must also operate properly and be delivered to clients while preserving the temperature and freshness of the goods within. The objectives that follow must be met in order for this solution to be implemented:

4.1.2.1 Define Packaging Objectives

To create attractive and functional packaging, the company needs to determine specific goals and objectives of the packaging. Some factors that will be the considerations are brand representation, product protection, convenience, user-friendliness as well as visual appeal. By having clear objectives the creating process can be done with minimal revision.

4.1.2.2 Develop Effective Packaging Prototype

The prototype will be created based on the objectives needed. This process can be done by the inside resource of the company or outsourcing for packaging design experts and agencies for more professional output.

4.1.2.3 Gather User Feedback and Insight

Prior to finalizing the packaging design, it is important to conduct user testing with a representative sample of the target audience. The company will gather feedback and insight on the design, functionality, and overall user experience.

Feasibility: The company is able to implement the solution of creating appealing and useful packaging. Similar to finding unusual ingredients, this solution can seek input from other sources and does not necessarily need to be done internally.

Table 5. Objective Key Result – Develop Attractive and Functional Packaging

Objective	Key Result	PIC
Define packaging objectives	Conduct deeper market research for packaging specification	CMO
	Create a priority list of the objectives	COO
Develop effective packaging prototype	Create 3 initial packaging design concepts	COO
	Develop physical packaging prototypes based on the initial design concepts	COO
	Conduct internal review	COO
Gather user feedback and insight	Recruit 5 participants from the target audience to participate in the user testing session	CMO
	Analyze the feedback and observations	COO
	Quantify user satisfaction by achieving a minimum satisfaction rating of 75%	COO
	Document the findings and recommendations	COO

4.2 New Product Design Ideation Result

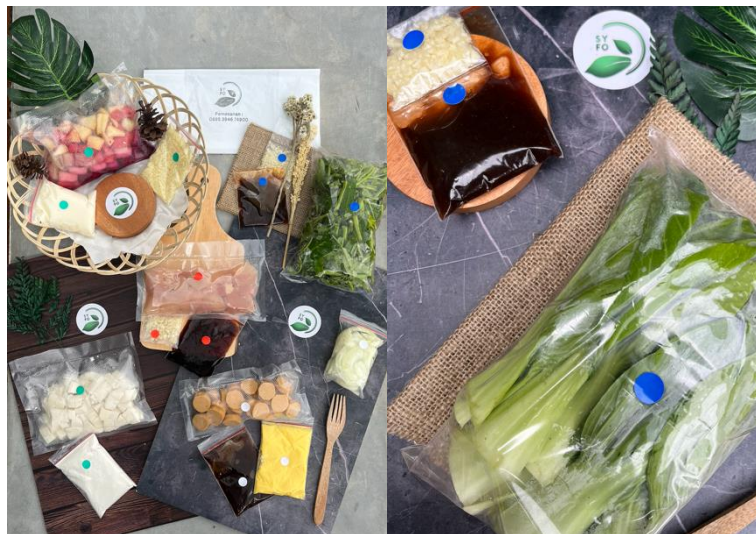
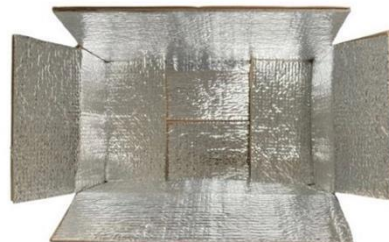


Figure 2. New Product Design Ideation

One of the initial ideas for the new product design of SYFOin meal kit is shown on Figure 2 where all the ingredients are separated and some of the ingredients are vacuum packed so they can last longer. Every ingredient is color-coded based on the dish. There will also be another color-coded sticker that will be used to inform the customer on how to best store each ingredient if they do not want to cook the meal right away.



27x20x14,5 cm

Figure 3. Delivery Box

Above (Figure 3) is the ideation for the delivery box. SYFO might need to find a mobile refrigerator to maximize temperature control. However, that will need another deep research. Therefore, another solution that is most feasible for now is to have a thermal box that will be filled with SYFOin meal kit along with the dry ice so our product will still be fresh and frozen when it arrives at our customer's hand.

CONCLUSION

The House of Quality (HOQ) framework is used in this study's analysis of the prior product design to pinpoint chances for improvement. Through literature research, interviews, and the collection of consumer preference attributes, the study measures the relative value of each attribute from 102 respondents. Eight technical preference attributes are also taken into account, and they were discovered through a literature research and internal operational data from SYFO. The SYFO product performance is compared to that of two rivals, Sumibi and reFresh, in order to complete the HOQ design.

The research creates a priority list for product development and points out areas that need improvement in the previous product design by entering the obtained data into the HOQ framework. SYFO offers alternative solutions as a result, such finding unique ingredients and creating attractive, functional packaging. By filling in the gaps and improving their product, SYFO hopes to better fulfill consumer preferences, increase sales, and increase customer retention.

ACKNOWLEDGEMENT

I would like to express my sincere to God for the support, strength, and guidance in this research journey. His presence has motivated me to continue this research even in hard times.

Next, I extend my deepest gratitude to my supervisor, Yuanita Handayati, for her guidance, expertise, and constant encouragement throughout the entire research process. Her insightful suggestions and constructive feedback have been instrumental in shaping the direction and quality of this work

I owe a debt of gratitude to the study's participants as well, who gave their time and energy freely to help me get the data I needed. The results of this research have been greatly enhanced by their participation and cooperation.

I would like to thank my friends and coworkers for their insightful comments and debates, which have improved my ideas and deepened our understanding of the topic.

Finally, I want to praise myself for never giving up on finishing my thesis. I know I can't. Because of this, I constantly ask to have all of my burdens lifted and to be given the ability to finish everything. I appreciate your efforts to maintain faith in God's mercy..

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