

CHAPTER I INTRODUCTION

This introductory chapter will discuss the background, the problem statement, research objective, research scopes, research benefits, and systematic writing. At this stage, the background of this research will be explained in detail.

I.1 Background

Fisheries in Indonesia cover a wide range of activities. They positively influence the country's fisheries, aquaculture, a type of activity that promotes aquaculture production, particularly in freshwater ponds and other locations. Fish farming operations encompass a variety of tasks, including maintenance, reproduction, growth, and enhancement of aquatic biota. Freshwater fish are the most extensively farmed fish due to their comparatively simple growth technique. The earnings from aquaculture activities are used to create food, recreational places, and decorative fish, with the primary goal of profit maximization. According to *Kementrian Kelautan dan Perikanan (KKP)* statistics, there was a buildup of fish stocks between 2019 and 2020, resulting in a 70% decline in national fish production. As a result of low buying power, dropping prices during the Covid-19 period, and a decline in demand from importing nations.

Table I.1 Total freshwater fish production in Indonesia (Badan Pusat Statistik, 2020)

Type of Fish	2019	2020	Decrease
Gurame	187.950,73 t	59.924,4 t	68%
Lele	981.623,4 t	347.511,48 t	65%
Mas	535.932,92 t	127.772,13 t	76%
Nila	1.337.831,69 t	364.747,1 t	73%
Patin	384.310,48 t	124.412,55 t	68%

Klaten Regency in Central Java Province it is one of the areas by far the most growth in freshwater fishery agriculture. This is supported by Klaten's geographic position, which is flanked by two major cities, Yogyakarta and Solo. The red tilapia fish is one of the essential aquacultures constantly growing in this area. The development of tilapia villages in the region has a significant influence

on the growth of aquaculture farmers in the area. The topographic factor of Klaten Regency that is positioned in the hose of Mount Merapi and a thousand mountains at the height of 75-160 meters above sea level tends to make this area have clear water and rippling, which is also very good for tilapia fish cultivation so that the fish cultivated is superior to the farmed fish in the reservoir. Nganjat village has flourished but fluctuated ever since its founding as a tourist village in 2013.

Based on surveys in Figure I.1 that have conducted, there are still many costumers buying conventionally fresh fish and processed fish products, one of which is buying as in the market or the tourist center, so that small MSMEs in

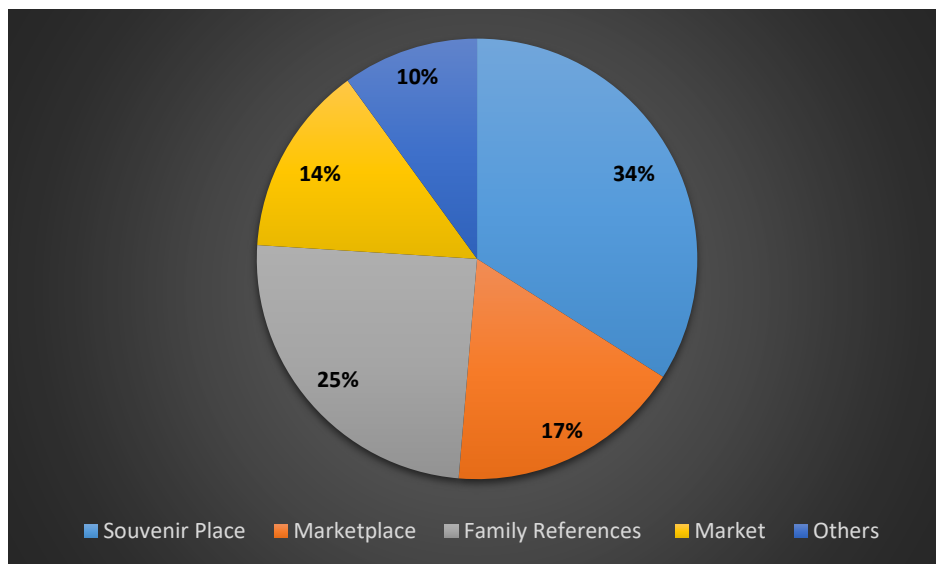


Figure I.1 Diagram user habits in buying fish products

Nganjat village have not been able to operate optimally due to lack of marketing.

As an outcome, it is essential to consider the potential for and alternatives for adequate infrastructure in Nganjat village. With the potential of Nganjat village that must be optimally managed and enhanced, a much more ideal infrastructure investment strategy is required. Digitization is one of the best strategies for expanding the fishing sector in the Klaten regency, specifically in Nganjat village.

Additionally, as a result of studies conducted, customers experience various issues while purchasing fresh fish and processed fish products online, as seen in Table I.2 below.

Table I.2 Table problems of buyer

No.	Problems	Problem Description
1.	Unable to choose fresh fish or processed fish products.	Users can't choose the products because they can't see directly.
2.	Bad Quality of fish products	Users feel some processed fish is not as in the product description.
3.	Delivery takes too long because the seller place is too far	Users feel delivery times are too long fearing fish rotting in the way.
4.	The goods that come are not appropriate	The user feels the product does not fit the description.
5.	Non-diverse payment methods	Users feel the payment methods are less diverse so that the difficulty in payment.

Based on the results of interviews with fish farmers and village devices, there are concerns more about the sale of unstable fish. Perhaps the purchase of Freshwater fish is still controlled by intermediaries, leaving fish farmers powerless to establish a fair rate.

In addition, MSMEs experience several obstacles, especially in product marketing, because entrepreneurs are still focusing on marketing using social media such as WhatsApp and Facebook. This issue causes a lack of market reach that entrepreneurs can attract because those who can see the products sold are only the community and the closest relatives. This issue is undoubtedly a challenge that needs to be studied. All the results of interviews that have been conducted to fish farmers and MSMEs can be seen in table I.3 below, explaining the problems faced by sellers in detail.

Table I.3 Table problem of seller

No.	Problems	Problem Description
1.	Fish water market rates fluctuate significantly.	Due to a complete lack of information amongst the intermediaries, the market rates fluctuate significantly.
2.	MSMEs that is not working properly.	Processing has remained stagnant, strongly dependent on sales alone, as has branding performed solely through Whatsapp stories.
3.	When the fish harvesting season is not entirely sold out.	This leads to losses to farming households since fishes that were too large for the market do not sell.
4.	Fish farmers want an easy money.	Fish farmers are unfamiliar with digitization and want a down payment once the fish are sold.
5.	The farmers do not have the times to sell their fish directly to the customers	Because most of the farmers have two job they found it difficult to send their fish directly to the customer because it takes a lot of time.

After determining the features needed by the user, then a comparison is made with similar platforms to determine what best feature of NuFish. NuFish will compare with some of the same competitors engaged in fisheries or e-marketplaces that sell food products, such as Aruna, eFishery, and the last one is TaniHub. The features that will be compared are chat features, loyalty, cart, payment gateway, packaging, product transaction report, product specification, catalog, tracking systems, rating reviews, creating, updating, and deleting products. The comparison can be seen in Table I.4 below.

Table I.4 Table of comparisons

No	Feature Comparison	Aruna	eFishery	TaniHub	NuFish
1.	Registration	√	√	√	√
2.	Chat	-	-	-	√
3.	Loyalty	-	-	-	√
4.	Cart	-	-	√	√
5.	Payment gateway	-	-	√	√
6.	Packaging	-	-	√	√
7.	Product Transaction Report	-	-	-	√
8.	Product Specification and Catalog	√	√	√	√
9.	Tracking Systems	-	-	√	√
10.	Rating Review	-	-	√	√
11.	Create Product	-	-	√	√
12.	Update Product	-	-	√	√
13.	Delete Product	-	-	√	√

According to data taken from Statista regarding the penetration of internet users in Indonesia reached 196.7 million people. This number increased from 23.5% million or 8.9% compared to 2018. Central Java occupies the second position with 26.5 million internet users (Bayu, 2020, p. 1). The approach that may be done to boost national fish output is to automate fish cultivator company activities. Technology plays a significant role in marketing and delivering fisheries goods to assist fishery economic growth. The information and communication technology employed is increasing quickly in the marketplace.

The marketplace is one of the most recent E-Commerce concepts, in which the marketplace functions as a middleman between buyers and customers (Wahana, 2018). Marketplaces allow users to locate various items and services supplied by different suppliers. With the availability of digital products, the relationship between farmers, fish processors, and end consumers expect to be more efficient and faster.

Concerns about the platform's users will erode trust in the platform's supplier. Because of the previous, a platform that enables users to perform online transactions to purchase and sell fresh fish, tracking the product, loyalty and chat are required. As a result, NuFish wishes to build an online platform to operate as a mediator between fish growers and purchasers. NuFish is a start-up business focused on the marketing and procurement fisheries and processed fish products, acting as a liaison between clients, fish farmers, and MSMEs of processed fish products. NuFish was formed in 2020 to enable fish farmers and merchants of processed fish products to undertake online transactions to sell and purchase fresh fish and processed fish products, hence enlarging the target market. The user interface, which is synonymous with the user experience, is a critical component of NuFish's website design solution to compete with competitors and make a favorable first impression on prospective customers. A User Interface (UI) is a means of communication between a system and a user that involves using instructions or techniques to operate the system, enter data, and utilize the contents. On the other side, user experience refers to the user's behaviors, viewpoints, habits, sentiments, and thought processes when engaging with the system (JOO, 2017). This research chose the Design Thinking method to solve challenges and create information technology innovations that concentrate on Human-Centered Design. Design thinking is characterized as a creative and analytical process that exposes an individual to chances for experimentation, the creation and modeling of prototypes, the collecting of feedback, and the improvement of products (Razzouk & Shute, 2012).

I.2 Problem Statement

Based on the background description, the formulation of the problems of this study is:

1. What are the acceptable criteria for determining user requirements in buying and selling fishery products?
2. How will the NuFish be evaluated utilizing the Cognitive Walkthrough method and the System Usability Scale?
3. What outcomes will follow from merging design thinking and extreme programming in developing the NuFish application?

I.3 Research Objectives

The goal of this study can be summarized as follows, based on the problem statement that already mentioned:

1. Analyze the requirements for the website and its development based on the needs of users conducting buying and selling transactions in the fisheries industry.
2. Evaluate the design of the NuFish website using the cognitive walkthrough and system usability scales.
3. Apply design thinking and extreme programming techniques to developing the NuFish website.

I.4 Research Scopes

In this sub section, describe the focus or the scope of the research project. If the problem statements or research objectives have already define the scope, this subsection can be omitted.

1. Data collection of respondents who are focused in the Klaten area.
2. The appearance of a prototype with a website following the user's needs.
3. Developed the website using extreme programming and design thinking method.

4. Evaluation measurement using Cognitive Walkthrough method and System Usability Scale.

I.5 Research Benefits

Theoretical Benefits

The research findings are designed to continue providing readers and scholars with essential insights into website-based marketplace design, which will contribute to the development of future studies.

Practical Benefits

1. To assist fish farmers and merchants to consumers in the transaction of buying and selling fresh fish products online.
2. Providing a platform for fish farmers and merchants in the form of Marketplace to reach a wider market.
3. As a reference for developers in building website-based e-marketplace applications at startup NuFish

I.6 Systematic Writing

CHAPTER I INTRODUCTION

This introductory chapter will discuss the Problem Context, the Problem Formulation Process, the Final Task Objectives, the Problem Limitations, the Research Benefits, and Systematic Writing.

CHAPTER II LITERATURE REVIEW

The Library Review chapter discusses the description of the flow of thought and scientific development of study topics and discusses literature relevant to the issues studied and discusses the relationships between concepts that become research studies.

CHAPTER III RESEARCH METHODOLOGY

This chapter describes the plans and stages of research, and the research methods used.

CHAPTER IV ANALYSIS AND PLANNING

This chapter contains a description of the analysis and design of research problems based on related methods.

CHAPTER V IMPLEMENTATION AND TESTING

This chapter contains the results of the design in the form of prototypes and tested test results.

CHAPTER VI CONCLUSIONS AND SUGGESTIONS \

This chapter contains a description of the conclusions based on research and advice obtained from this study.