

Consumer Perception on Digital Marketing of Fisheries Product in Lamongan, East Java, Indonesia

M. Khairul Anam¹, Muntalim Muntalim¹, Faisol Mas'ud¹

¹Faculty of Fisheries, Universitas Islam Lamongan, Jawa Timur, Indonesia

khoirulanam@unisla.ac.id

<https://doi.org/bisnisekonomi.v20i1.7865>



Submitted: 12/09/2022

Revised: 22/01/2023

Accepted: 24/02/2023

Abstract

Keywords:
Consumer'
Perception;
Digital
Marketing;
Behavior;
Fishery Product

Digital marketing has recently become a serious concern for economic actors. Consumer perceptions and behavior towards digital marketing of fishery products are very important to determine marketing strategies and market segmentation. This study aims to analyze consumer perceptions and satisfaction of online fishery products using Importance Performance Analysis (IPA) and Customer Satisfaction Index (CSI). This study used accidental sampling with 135 respondents. The results showed that product quality, price, discount availability, delivery time, packaging, security, and COD (Cash on Delivery) system had high performance values. While shipping costs have low performance. While the results of consumer satisfaction show that the CSI score is 62.4%, meaning that consumers are satisfied with the online fishery product sales service. However, business actors need to maintain and improve their service performance.

Abstrak

Kata kunci:
Persepsi Konsumen;
Pemasaran Digital;
Perilaku; Produk
Perikanan

Digital marketing akhir-akhir ini menjadi perhatian serius bagi pelaku ekonomi. Persepsi dan perilaku konsumen terhadap pemasaran digital hasil perikanan sangat penting untuk menentukan strategi pemasaran dan segmentasi pasar. Penelitian ini bertujuan untuk menganalisis persepsi dan kepuasan konsumen produk perikanan online menggunakan Importance Performance Analysis (IPA) dan Customer Satisfaction Index (CSI). Penelitian ini menggunakan accidental sampling dengan responden sebanyak 135 orang. Hasil penelitian menunjukkan bahwa Kualitas produk, harga, ketersediaan diskon, waktu pengiriman, kemasan, keamanan, dan sistem COD (Cash on Delivery) memiliki nilai kinerja yang tinggi. Sedangkan biaya pengiriman memiliki kinerja yang rendah. Sedangkan hasil kepuasan konsumen menunjukkan bahwa skor CSI 62.4%, artinya konsumen puas terhadap layanan penjualan produk perikanan secara online. Walaupun demikian, pelaku usaha perlu memperhatikan dan meningkatkan kinerja pelayanannya.

1. Introduction

Recently, digital marketing has become a serious concern for economic actors. A type of marketing widely used to promote products and services and reach consumers through digital channels (Yasmin, et al. 2015). This includes using our business website in combination with online advertising techniques such as banner advertising, search engine, PPC advertising, email, links, or services from other websites to attract new customers. (Bala and Verma, 2018).

Gangeshwer (2013) stated that in order to promote competition and popularize internet technology many countries in Asia are embracing e-commerce by opening up. In Indonesia, people are already dependent on the internet from the city to the rural level. According to Internet Service Providers Association/APJII (2021), 73.3 percent of the population is accessible to the internet. This is due to digital marketing being able to convey various information more quickly and easily efficiently, reach all regions, cost-effective

(Alemu, et al. 2020), and able to pursue new opportunities in a digital international business environment (Tolstoy, et al. 2021).

The use of social media as a promotional medium to accelerate the marketing of a product. Some studies stated that WhatsApp (WA), Instagram (IG), Facebook (FB), and other social media facilities can significantly increase the revenue of sellers. The media makes it easier for them to market the products they produce (Muafi et al. 2021; Naushad, 2021). Research conducted by Al-azzam and Al-mizeed (2021); Amri et al. (2021) and Asbari et al (2021) have revealed that digital marketing has an impact on increasing start-up business revenue.

Lamongan is one of the regencies in East Java Province which has a population of approximately 1.4 million people and 80% are internet users. This data is supported by 68% of whom are in productive age 15-64 years (BPS, 2021). This is in line with data on social media users in Indonesia in 2020, dominated by the age range of 25-34 years (Annur, 2020).

Regarding digital marketing, one of the products that are widely marketed digitally or online is food products made from the fishery, both fresh and processed. Digital marketing of fishery products can enhance the efficiency of the distribution chain and facilitate interaction with consumers; hence the benefits can be felt by fishermen and businessmen. In addition, advertising and sales of fishery products are more optimal through digital marketing (Homaidi, 2017).

The location of Lamongan is near to the coast makes the prospect of marketing fishery products very high and will be in great demand by consumers (Saad, et al. 2020). The large business opportunity for digital marketing of fishery products in Lamongan makes business actors seek to develop their businesses. This development effort requires the ability to design segmentation and marketing strategies to attract consumer interest. This is because the final purchase decision is influenced by various factors, including perceptions, characteristics, and consumer behavior. Perception is the result of processing information which is the consumer's view of digital marketing of fishery products. At least, there are five indicators that influence consumers' perceptions such as benefits, trust, self-efficacy, ease of use, and security (Teoh, et al. 2013). Kotler (1999) also stated that purchase behavior consists of five steps, recognition of consumer needs, information search, evaluating various alternative decisions, consumer decisions in the buying process, and consumer behavior after purchase.

The problem of this research is incomplete information related to consumer behavior and perceptions of digital marketing of fishery products in Lamongan. If this information is not available, it is possible that businessmen will find difficulty to determine market segmentation, product quality desired by consumers, and appropriate marketing strategies. Marketplaces are part of online food and non-food marketing. Using this model marketing tip is very useful. You don't have to provide a location to deploy the product.

Some fish sellers in Lamongan market their products using marketplaces such as Shopee, Tokopedia, Lazada, and Bukalapak. A study of Istianingsih (2021) showed that consumers decide to buy a product from Shopee's shop due to the ease of transaction and it can affect the online purchase of consumers. However, in this study, it was not determined for the type of platform used. Ani, et al. (2017) study on consumer behavior shows that there is a strong relationship between the characteristics and consumer behavior of marine fish

marketing in the traditional market of Pekanbaru, Riau Province. Meanwhile, the resulting study of [Khoirinnisa, et al. \(2016\)](#) concluded that the factors that influence consumer behavior toward processed dragon leg fish products in the fishing industry in Bogor Regency are purchase satisfaction, trust, product appearance, popularity, promotion, product knowledge, taste, and texture. Meanwhile, research on consumer perceptions of digital marketing of fishery products in Lamongan has not been carried out. Further, this research will be useful for digital marketing business players of fishery products to improve their performance and income in order to design marketing strategies based on consumer satisfaction. Hence, this study aims to identify consumer behavior and measure consumers' perceptions of digital marketing of fisheries products in Lamongan. The results of this study are expected to give a big contribution to marketers to enhance their performance, especially in selling their products through an online marketplace and making them more *profitable*.

2. Literature Review

Consumer Perception

Consumers cannot be categorized based on only one sort of behavior, as is generally known. Consumer behavior is influenced by the products that are accessible to satisfy their requirements, which is how their behavior and the situation in which it occurs interact. However, the psychological element of perception has a significant impact on behavior. [Troy and Kerry \(2010\)](#) stated that perception is defined as the act of receiving information through the senses and/or the mind. Perception thus refers not just to basic senses like sight, flavor, and taste qualities, but also to created learning or experiences. Conditioning and imitation are two widely used non-cognitive learning strategies for early dietary acquisition. As a result, perception involves complex elements of consumer behavior such as learning, motivation, and context.

[Peter, et al. \(1999\)](#) defined consumer perception as a dynamic interplay of emotional and cognitive, behavioral, and environmental events. Through this, people achieve the exchange aspect of their lives. Consumer perceptions are fluid and subject to change. Because of the complicated dynamic that causes the transformation, it is impossible to foresee how and in what direction customer views will change. As a result, consumer perceptions are dynamic, and there are frequent discrepancies between what consumers perceive and what they do. Models for predicting customer behavior based on perceptions have been created, some of which do not take context into account ([Troy and Kerry, 2010](#)).

[Phoolsawat, et al. \(2022\)](#) studied Online Marketing for Promoting Striped Snake-Head Fish Products between Cooperative and Online Platform. The results showed that Facebook, Shopee, and Lazada are the distribution channels with the most buyers. A handful of stores are for sale on Shopee and Lazada, and they already have a customer base. When searching on these platforms, these stores appear on the first page, rendering the cooperative unable to compete on Shopee and Lazada. Unlike Facebook, which may buy more focused advertisements for their customers. It can better determine the features of the cooperative's target clients, allowing it to produce more sales.

Digital Marketing

This is a type of marketing that reaches customers through the internet, mobile services, social media, satellite television, search engines, and other digital channels. Digital marketing is increasingly a component of all other forms of marketing, particularly in online or click-and-mortar firms that accept orders online and then deliver the products to the customer (Mayor, 2022). Non-Internet outlets that supply digital media, such as television and mobile phones, are included in digital marketing. Desai (2019) observed that businesses are increasingly adopting digital platforms into their marketing campaigns, drawing new customers while decreasing customer visits to conventional stores.

Digital marketing can be defined as using digital technology to achieve marketing goals. Digital marketing is the use of technology to support marketing efforts and improve customer knowledge to meet customer needs (Bala and Verma, 2018). Businesses in developed countries recognize the value of digital marketing. For businesses to succeed, they must combine online and traditional means to more precisely meet their customers' needs. With the advent of new technologies, marketers have new business opportunities to manage their websites and achieve their business goals. Online advertising is a key marketing tool for building your brand and driving traffic for your business to thrive (Tran, 2017).

The relevance of digital marketing is demonstrated by the study's findings, which show that if a developing country implements e-commerce successfully and efficiently, it may be rationalized and mechanized. This improves performance and gives a competitive advantage. Information technology (IT) has boosted e-commerce around the world. Entering new markets and analyzing product and company performance has become easier. Reduce operating costs and improve corporate governance (Sabha, 2017).

Study of Purba, et al. (2021) about the effect of digital marketing toward MSMEs. The results showed that digital marketing and e-commerce had significant effect on business sustainability. In order to raise customer awareness, digital marketing has been implemented. Marketplace as an e-commerce manifestation is employed as an innovation or modification in sales strategies.

3. Methodology

The research was carried out from May to July 2022. The research method was a case study with the unit being consumer perceptions of marketing digital products cases located in Lamongan Regency. The study was carried out during restricted regulation due to the Covid 19 pandemi. Therefore, data collection was carried out by online. Data collection through filling out a questionnaire compiled using the google form application. The google form link containing the questionnaire was distributed through social media in term of WhatsApp, Twitter, Facebook and Instagram.

The measurement of consumer perception uses a Likert scale with 5 scales ranging from strongly disagree (scale 1), disagree (scale 2), agree (scale 3), agree (scale 4) to strongly agree (scale 5). The research population is people who live in Lamongan who consume fishery products through digital marketing. Research respondents are consumers who live in Lamongan Regency, are over 15 years old and have at least one transaction to purchase fishery products from digital marketing in the last three months. Determination of

respondents was carried out using an accidental sampling approach, where the sample of this study were digital marketing consumers of fishery products who coincidentally found the link on social media and were able to answer every question on the questionnaire and meet the criteria.

The number of respondents is 135 people. The calculation is according to [Hair \(2009\)](#) that the minimum number of samples for the unknown population is five to ten times the number of statement items to be analyzed in the questionnaire. The statements analyzed in the questionnaire are 23 statements of performance and the importance of each attribute in measuring consumer perceptions, hence the number of samples taken is a minimum of 120 people.

The formula for determining the number of samples taken in this study is as follows:

$$n = k \times 5 \quad (1)$$

Where:

n = number of respondent samples

k = research statement

5 = minimum number of observations for each analyzed statement

Descriptive Analysis of Consumer Behavior

Analysis of consumer behavior in digital marketing is carried out descriptively through Kotler's five-stage approach. Some of the reasons analyzed in consumer behavior are listed in Table 1.

Table 1. Consumer behavior in purchasing fishery products by digital marketing

Steps	Consumer' Reason
A. Needs	<ul style="list-style-type: none"> - Affordable prices - Practices - Good Quality - Quantity and size can be made to order - Hard to get offline
B. Source of Information	<ul style="list-style-type: none"> - Market Place (Shopee, Tokopedia, Lazada, and etc.) - Search Engine (Website/Google) - Social Media (WA, IG, Facebook, and etc.) - People Recommendation - Magazines, posters, billboards, banners, newspaper
C. Alternative Evaluation	<ul style="list-style-type: none"> - Quality level - Price - Shipping fee - Delivery time - Stock availability - Packaging - Security and trust - Ease of transaction

	-	The diversity of types and sizes of commodity weights
	-	COD (Cash on Delivery) service available
	-	Discount available
D. Purchase decision (number of purchases per month)	-	< 1 kg
	-	1 – 3 kg
	-	3 – 5 kg
	-	5 – 7 kg
	-	7 – 10 kg
	-	> 10 kg
E. Behavior after purchasing	-	Do repurchase
	-	Do not repurchase

Source: Kotler (2016), has been modified

Important Performance Analysis (IPA) and Customer Satisfaction Index (CSI)

IPA and CSI analysis are carried out through measuring consumer perceptions of the process of purchasing fishery products through digital marketing. In this case, the company that is assessed is not determined because consumers assess the performance of digital marketing activities in general. The importance of measuring consumer perception is to know the positive and negative picture of fishery products from digital marketing. The level of consumer opinion is measured through four options in the questionnaire where each choice option is given a value range of 1-5. The Likert scale used in determining consumer perceptions is listed in Table 2.

Table 2. Parameters determining consumer perception

No.	Parameter
1	Fishery products from digital marketing have a good quality
2	Product prices are more affordable
3	Always on time delivery
4	Fishery products from digital marketing have a good packaging
5	Affordable shipping cost/fee
6	Have a high level of security and trust
7	Abundant stock availability
8	Have an ease of transaction
9	The products offered have various types and forms
10	There is a discount for every purchase quantity
11	COD (Cash on Delivery) Available

Source: Observation results

The consumer perception assessment is based on an analysis of the digital marketing performance of fishery products. This analysis aims to determine the importance and performance of each variable from the factors of consumer satisfaction. The level of importance in question is how important the digital marketing attributes of fishery products are to consumers or how much consumers expect the performance. While the level of performance is an attribute that is actually perceived by consumers. The results of the calculation are the average weight (\bar{X}) for performance and the average weight (\bar{Y}) for the

interest calculated using the following equation:

$$\bar{X} = \frac{\sum X_i}{n} \quad (2)$$

$$\bar{Y} = \frac{\sum Y}{n} \quad (3)$$

Where:

\bar{X} = average score of performance level;

\bar{Y} = average score of importance level;

$\sum X_i$ = total score of performance level of all consumers;

$\sum Y_i$ = total score of importance level of all consumers; and

n = the number of fishery product consumer (135 respondents)

In order to construct the IPA matrix using the following equation:

$$\bar{\bar{X}} = \frac{\sum_{i=1}^n \bar{X}}{k} \quad (4)$$

$$\bar{\bar{Y}} = \frac{\sum_{i=1}^n \bar{Y}}{k} \quad (5)$$

Where:

$\bar{\bar{X}}$ = average score of the performance level of all attributes;

$\bar{\bar{Y}}$ = average score of the importance level of all attributes;

\bar{X} = average score of the performance level of attributes i ;

\bar{Y} = average score of the importance level of attributes i ;

n = number of consumers (135); and

k = number of attributes can affect customer satisfaction is 10.

The IPA matrix is needed to describe the level of performance and customer satisfaction. The division of quadrants in the IPA matrix is shown in Figure 1.

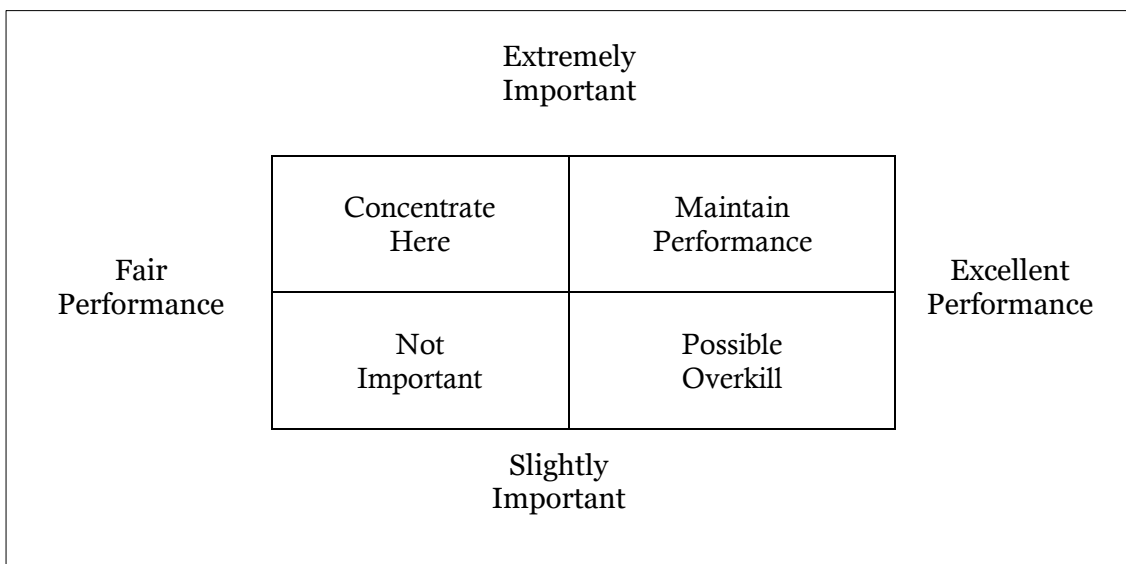


Figure 1. Importance Performance Matrix (Martilla dan James, 1977)

Customer Satisfaction Index (CSI)

The consumer satisfaction index method aims to measure the level of consumer satisfaction. The formula for calculating the satisfaction index based on [Hill and Alexander \(2006\)](#), as follow:

1. Calculate the average level of importance and performance of each consumer.

$$MIS = \frac{\sum_{i=1}^n Y_i}{n} \quad (6)$$

$$MSS = \frac{\sum_{i=1}^n X_i}{n} \quad (7)$$

Where:

MIS = Mean Importance Score;

MSS = Mean Satisfaction Score;

n = Number of consumers;

Y_i = Importance Value of attribute i ; and

X_i = Performance Value of attribute i

2. Calculate Weight Factor (WF)

$$WIFI = \frac{MIS_i}{\sum_{i=1}^p MIS_i} \times 100\% \quad (8)$$

Where:

p = number of importance attributes;

i = attributes i ;

MIS_i = average score of importance attributes i :

3. Calculate Weight Score (WS)

$$WS_i = WFI \times MSS_i \quad (9)$$

Where:

i = attributes i ;

WF = Weighting Factor;

MSS = average score of performance attributes i

4. Calculate Customers Satisfaction Index

$$CSI = \frac{\sum_{i=1}^p WS_i}{HS} \times 100\% \quad (10)$$

Where:

p = importance attributes i ;

WS = Weight Score; and

HS = Height Score or minimum scale (5)

Furthermore, a scale range is made to explain the value of the consumer satisfaction index based on the [Simamora \(2002\)](#) scale range equation.

$$RS = \frac{m-n}{b} \quad (11)$$

Where:

RS = Scale Range;

m = highest score;

n = lowest score;

b = number of categories (in this study uses maximal scale 5)

The highest satisfaction if the consumer satisfaction index reaches 100%, so the scale range

can be calculated as follows:

$$RS = \frac{100\% - 0\%}{5} = 20\% \quad (12)$$

Next, the index values and criteria for the consumer satisfaction index are made as shown in Table 3.

Table 3. Interpretation of consumer satisfaction index numbers

Index Value	Satisfaction Index Criteria
80% < Satisfaction Index < 100%	Very Satisfied
60% < Satisfaction Index < 80%	Satisfied
40% < Satisfaction Index < 60%	Quite Satisfied
20% < Satisfaction Index < 40%	Less Satisfied
0% < Satisfaction Index < 20%	Unsatisfied

Source: [Martilla dan James, \(1977\)](#)

4. Empirical Result and Discussion

Consumer Characteristic

Consumer characteristics are distinguished by age, education, occupation, monthly income, and gender (Table 4). These characteristics can influence the behavior of the purchasing process. Therefore, it is expected to be a source of information for the purpose of evaluating and preparing marketing strategies for fishery business using digital marketing.

Table 4. Respondent Characteristics

Age Group (Year)	Frequency	Education	Frequency/
17-25	37	Elementary School	0
26-32	55	Junior High School	2
33-40	29	Senior High School	20
41-47	5	Diploma	35
48-55	7	Bachelor	68
56-63	2	Postgraduate	10
Total	135	Total	135
Type of Works	Frequency	Income per month (Rp)	Frequency
Housewife	18	<1.000.000	2
Student	12	1.000.001-2.500.000	33
Government Employee	32	2.500.001-5.000.000	72
Private Employees	41	5.000.001-10.000.000	28
Professional	17	>10.000.000	0
Self-employed	15	Total	135
Total	135		
Gender			
Male	37		
Female	98		
Total	135		

Source: Analysis Result (2022)

Table 4 shows that respondent who use digital marketing to purchase fishery product either in terms of fresh or not are diverse. Respondent is dominated by age range 26-32 (40.74%) who are in productive age and often use social media or digital platforms. While bachelor or graduated student dominate to make online transaction (50.37%) by working as

private employees (30.37). Consumer' job as one factors that affect toward purchasing product (Yuliati, 2011). Meanwhile, the average of consumers profile has income Rp. 2.500.001 – Rp. 5.000.000, indicate that respondents in the lower middle income, it can be understood because the respondents age is still relatively young and just starting a career. According to Ramya and Ali (2016), income levels create consumption patterns, lifestyles, and increase a person's purchasing power. In terms of gender, respondents are dominated by female (72.60%). It indicates that a women have domestic roles to manage the household such as cooking and shopping (Putri and Lestari, 2015; Setiawati and Nurhayati, 2020).

Consumer Behavior in Purchasing Fishery Product

Respondents make transactions to purchase fresh fish or processed fish through online platforms are dominated by practical reasons (65%). Due to digital purchases offer practicality in terms of easy to use, no need to spend transportation costs, no need to leave the house, jostle at shopping places, get accepted quickly, save time, and can be accessed anywhere and anytime (Tambunan, et al. 2018; Kavitha, 2017). In addition, digital marketing has become an alternative for most people when social restrictions are implemented during the Covid 19 pandemic. The results of analysis are presented in Table 5.

Table 5. Consumer behavior in purchasing fishery products by digital marketing

Steps	Consumer' Reason	Percentages (%)
A. Needs	- Affordable prices	20
	- Practical/Simple	52
	- Good Quality	15
	- Quantity and size can be made to order	5
	- Hard to get offline	8
	Total	100
B. Source of Information	- Market Place (Shopee, Tokopedia, Lazada, and etc.)	37
	- Search Engine (Website/Google)	10
	- Social Media (WA, IG, Facebook, and etc.)	40
	- People Recommendation	8
	- Magazines, posters, billboards, banners, newspaper	5
	Total	100
C. Alternative Evaluation	- Quality level	15
	- Price	22
	- Shipping fee	4
	- Delivery time	7
	- Stock availability	5
	- Packaging	2
	- Security and trust	5
	- Ease of transaction	1
	- The diversity of types and sizes of commodity weights	5
	- COD (Cash on Delivery) service available	31
	- Discount availability	3
Total	100	
D. Purchase decision (number of	- < 1 kg	9
	- 1 – 3 kg	22
	- 3 – 5 kg	53

purchases per month)	per	-	5 – 7 kg	8
		-	7 – 10 kg	5
		-	> 10 kg	3
			Total	100
E. Behavior purchasing	after	-	Do repurchase	82
		-	Do not repurchase	18
			Total	100

Source: Processed Data (2022)

According to Table. 5, much consumers get information about fish selling from social media (40%) and Marketplace (37%). Social media has become a tool that facilitates not only discussion in business activities but also information sharing and various information sharing. Social media is an effective medium for selling goods and services. Social media is also seen as a news channel tool chain that is constantly shared by other users. Also, it can influence purchase decision (Artanti, et al. 2019). Social media platforms provide users with features such as profiles, friend lists, chat options, sending private or public messages, creating events, posting comments, and receiving feedback. In 2022, Facebook will dominate the social media block with his 2.93 billion users (Statista, 2022), but recently, TikTok and Instagram are dominant and become best-selling platform to promote a product (Haenlein, et al. 2020; Mou, 2020).

Further, the consumer behavior to purchase fishery product by online is based on quality (15%), price (22%) and COD available (31%). A study of Thamariselvan, et al. (2019) showed that Cash and Delivery system has increased the consumer convenience. Recognizing the risks of sharing credit card information online, there are several studies highlighting cash on delivery as a payment method in emerging markets that could increase online purchases (Chiejina & Olamide, 2014; Kandulapati & Bellamkonda, 2014; Sahney et al., 2013).

Meanwhile, the number of purchasing fish per month 3-5 kg on average. Currently, the number of fish consumption in Lamongan is 48.27 kilograms per capita and almost equals the national level of 55.37 kilograms per capita on 2021 (KKP, 2021). This number is still relatively low, due to habits of Indonesian people who have obstacles in consuming fish in the form of boredom, allergies, fishy smell, and expensive price. Therefore, the majority of Indonesian people choose substitute goods as a source of animal protein other than fish which are considered more practical, easy to cook, satisfying when consumed, delicious, and affordable, such as eggs and chicken (Ariani, et al. 2018). Variations in consuming fish food can also be influenced by several factors such as socio-economic aspects, demographics, geographical location and eating habits (Ahmad, et al. 2016).

82% of consumers decide to repurchase fish product by Online. Shyam, et al (2018) stated that online marketing, in addition to benefiting consumers in terms of quality and time, will aid in the elimination of these middlemen, ensuring that the fisherman receive their fair part. On the one hand, it assists manufacturers in obtaining a legitimate portion of the consumer's rupiah; on the other hand, it protects consumers' rights against high pricing.

Important Performance Analysis (IPA)

The measurement of IPA able to show attributes that can influence consumer satisfaction. The result of performance value and importance of IPA is listed in Table 6.

Table 6.

Table 6. Importance and Performance' Value of Consumer Perceptions

No.	Parameter	Mean of Performance	Mean of Importance
1	Good quality	2.85	3.56
2	Affordable Prices	2.77	3.50
3	On time delivery	3.19	3.49
4	Good packaging	3.36	3.46
5	Affordable shipping cost/fee	2.90	3.07
6	Have a high level of security and trust	3.39	3.52
7	Abundant stock availability	3.24	3.17
8	Have an ease of transaction	3.18	3.22
9	The products offered have various types and forms	3.57	3.10
10	Discount Availability	3.01	3.55
11	COD (Cash on Delivery) Availability	2.93	3.72
	Total	34.39	37.36
	Mean (\bar{X} , \bar{Y})	3.13	3.40

Source: Processed Data (2022)

The IPA matrix contains attributes that are in four quadrants as an evaluation material whether an attribute needs to be improved or not to be prioritized for improvement yet. The IPA matrix in the form of a Cartesian diagram or Scatter Plot is the result of data analysis using SPSS. The interpretation of IPA matrix is explained below.

1. Quadrant I (Concentrate Here)

This quadrant indicates that product quality, affordable prices, discount availability and COD System have a high level of importance with a low level of performance. Hence, Fisheries business actors using digital marketing need to enhance the performance of these four attributes. Price and product quality are important, but the COD system is currently more in demand by online shop consumers, due to the risks perceived of sharing credit card information online (Chiejina & Olamide, 2014; Kandulapati & Bellamkonda, 2014; Sahney et al., 2013).

2. Quadrant II (Maintain Performance)

Quadrant II shows that on time delivery, good packaging and security have a high value of importance and performance. This needs to be maintained in order to enhance customer satisfaction. Perception of packaging refers to the perception of each individual towards the packaging and packaging carried out by business actors of fishery products to maintain the quality of their products. Packaging means all forms of packaging and processes used to wrap a product (Kuspriyono, 2017). The packaging of fishery products from digital marketing has a function provide convenience in the process of use (operating), distribution (shipping), and protection to maintain the quality of fishery

products from the seller to the hands of consumers during the time of delivery.

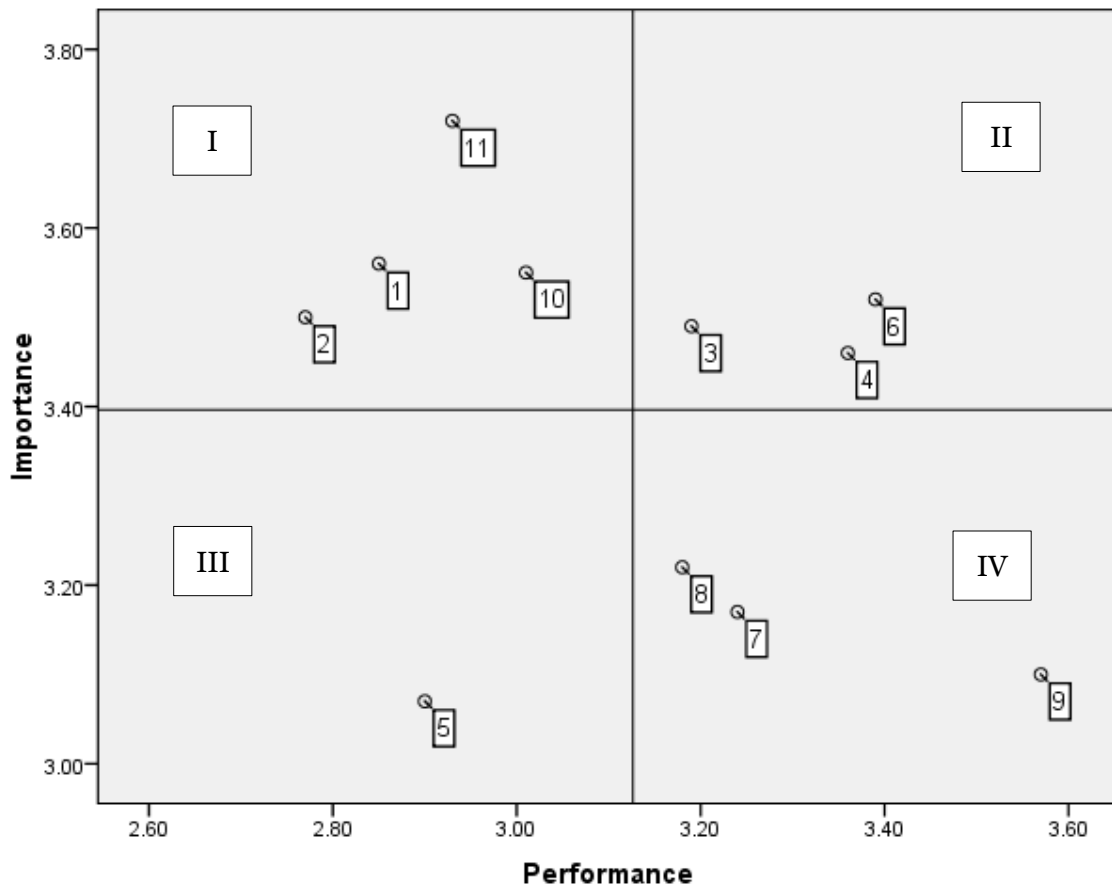


Figure 2. IPA's Matrix of Purchasing Fishery Product Using Digital Marketing

3. Quadrant III (Not Important)

The shipping cost/fee has a low of importance and performance. Although some of consumers not paying attention of shipping charge, but if online retailer starts charging a shipping cost, they would turn to another one that offered free shipping. For online retailing operations, shipping policy is an important decision. As study of [Yao and Zhang \(2012\)](#) Internet retailers will increase base prices when they offer free shipping. The shipping price differential between standard and expedited delivery modes for Internet retailers grows with standard shipping time but reduces with expedited shipping time and the Internet retailer's on-time probability. It implies that, in order to optimize profits, Internet retailers of fishery product can strategically select base and shipping rates, as well as carefully pace menu pricing for different delivery alternatives.

4. Quadrant IV (Possible Overkill)

Stock availability, ease of transaction and the product varies are a less important attribute for consumers. Meanwhile, they have a pretty high score of importance and performance. [Wu and Chen \(2019\)](#) suggest that the more choices consumers have, the more self-control that makes consumers pay more attention to their desires and inner satisfaction. The more choices business actors offer to consumers, the more sensitive consumers' needs are, and the more satisfied they are in choosing.

Customer Satisfaction Index (CSI)

The Score of Customer Satisfaction Index of Purchasing Fishery Product Using Digital Marketing is Shown in Table 7. The tool used to estimate CSI's score by using Microsoft Excel.

Table 7. Customer Satisfaction Index of Purchasing Fishery Product Using Digital Marketing

No.	Parameter	MSS	MIS	WF	WS
1	Good quality	2.85	3.56	9.53	27.16
2	Affordable Prices	2.77	3.50	9.37	25.95
3	On time delivery	3.19	3.49	9.34	29.80
4	Good packaging	3.36	3.46	9.26	31.12
5	Affordable shipping cost/fee	2.90	3.07	8.22	23.83
6	Have a high level of security and trust	3.39	3.52	9.42	31.94
7	Abundant stock availability	3.24	3.17	8.49	27.49
8	Have an ease of transaction	3.18	3.22	8.62	27.41
9	The products offered have various types and forms	3.57	3.10	8.30	29.62
10	Discount Available	3.01	3.55	9.50	28.60
11	COD (Cash on Delivery) Available	2.93	3.72	9.96	29.17
	Total	37.36	34.39		
				WT	312.09
				CSI	62.4%

Source: Processed Data (2022)

The score of Customer Satisfaction Index is 62.4%. it is found on a scale range of 60-80 % (it means consumers are satisfied). Based on this, there are still 37.6% of performance attributes that have not met customer satisfaction. This means that the attributes of purchasing online fishery product provided overall still not satisfied the customers and it is necessary to improve and maintain the service performance.

Conclusion

This study analyzes consumer' perception and consumer satisfaction of purchasing fishery product using Digital Marketing in Lamongan. This study using Importance Performance Analysis (IPA) and Customer Satisfaction Index (CSI) based on accidental approach with 135 respondents. Customer behavior is analyzed using five indicators, consumer's need, source of information, alternative evaluation, purchase decision per month, and repurchasing decision. The result of consumer behavior suggest that the reason of consumer do online purchasing of fishery product due to practical transaction (52%). Consumers get information about fish selling from social media (40%) and Marketplace (37%). The consumer behavior to purchase fishery product by online is based on quality (15%), price (22%) and COD available (31%). Then, 82% of consumers decide to repurchase

fish product by Online.

We argue that a truly successful recommendation system should be the one that maximizes customer satisfaction after the sale, rather than one that simply entices customers to buy. We emphasize that a good recommendation system takes into account not only what the customer requires, but also ensures the customer's satisfaction. The main contribution of this research is provided attribute alternative that customer able to be used to purchase fishery product by online.

Despite the contribution of this research, there are limitations, and further works can be done. The first important work is to investigate the factors that impact a customer's satisfaction of purchasing online fishery product. Many attributes such as the demographic and psychological characteristics, purchase and consumption environment, and customers' expectation, may well have significant influence on customers' satisfaction toward a specific fishery product. Therefore, it is crucial to identify the factors important for modeling rating classification, so as to predict the customer's satisfaction level effectively.

Another task is to ascertain the demands and preferences of consumers. The rating classification aims to recommend the best products based on consumer attributes in order to attain high levels of satisfaction. As a result, the authenticity of consumers' demands and preferences has a significant impact on the recommendation system's effectiveness. Consumers do not always have distinct requirements and preferences. As a result, finding an effective technique to assist customers in expressing their genuine requirements and preferences is critical for recommendation systems.

Acknowledgement

The authors would like to thank the Institute for Research and Community Service at Universitas Islam Lamongan, East Java, Indonesia, for Providing funds of this research.

Author's Declaration

Authors' contributions and responsibilities

The authors made substantial contributions to the conception and design of the study. The authors took responsibility for data analysis, interpretation and discussion of results. The authors read and approved the final manuscript.

Funding

The Institute for Research and Community Service at Universitas Islam Lamongan, East Java, Indonesia

Availability of data and materials

All data are available from the authors.

Competing interests

The authors declare no competing interest.

Additional information

No additional information from the authors.

References

- Ahmad, N. I., Wan Mahiyuddin, W. R., Tengku Mohamad, T. R., Ling, C. Y., Daud, S. F., Hussein, N. C., Nor A. A., Rafiza S., Sulaiman, L. H. (2016). Fish consumption pattern among adults of different ethnics in Peninsular Malaysia. *Food & nutrition research*, 60(1),
- Alemu, M. H., Sigurdsson, V., Fagerstrøm, A., & Foxall, G. R. (2020). Developing the e-commerce sector for the fishery industry: What business are we really in? *Managerial and Decision Economics*, 41(2), 274-290.
- Al-azzam, A. F., & Al-Mizeed, K. (2021). The effect of digital marketing on purchasing decisions: A case study in Jordan. *The Journal of Asian Finance, Economics and Business*, 8(5), 455-463.
- Amri, W. A. A., Asbari, M., Gazali, G., Novitasari, D., & Purwanto, A. (2021). The effect of religiosity and service quality on job satisfaction: A case study of MSME employees. *International Journal of Social and Management Studies*, 2(1), 53-63.
- Ani, N. R., Kusai, K., & Zulkarnain. (2017). Analysis of Sea Fish Consumer Behavior in Traditional Markets Arengka City of Pekanbaru Riau Province. *Jurnal Online Mahasiswa Fakultas Perikanan dan Ilmu Kelautan Universitas Riau*, vol. 4, no. 2, 2017, pp. 1-12.
- Annur C. M. 2020. Pengguna Media Sosial di Indonesia Berdasarkan Umur & Gender. (Online). Diakses pada 28 Agustus 2022. <https://databoks.katadata.co.id/datapublish/2020/11/23/berapa-usia-mayoritaspenggunamedia-sosial-di-indonesia>.
- Ariani, M., Suryana, A., Suhartini, S. H., & Saliem, H. P. (2018). Performance of Animal Food Consumption based on Region and Income at Household Level. *Analisis Kebijakan Pertanian*. 16(2). 147-163.
- Artanti, Y., Prasetyo, F. H., & Sulistyowati, R. (2019). How Social Media Marketing Influences Online Purchasing Decision: Study of the Viral Marketing and Perceived Ease of Use. *KnE Social Sciences*, 988-1004.
- Asbari, M., Hidayat, D. D., & Purwanto, A. (2021). Managing employee performance: From leadership to readiness for change. *International Journal of Social and Management Studies*, 2(1), 74-85.
- Bala, M., & Verma, D. (2018). A Critical Review of Digital Marketing. *International Journal of Management, IT and Engineering*, 8(10), 321-339.
- Badan Pusat Statistik (BPS) Kabupaten Lamongan. 2020. Kabupaten Lamongan Dalam Angka 2021. (Online). Diakses pada 18 Mei 2022. https://lamongankab.go.id/arsiptahunan/portal/Kabupaten_Lamongan_Dalam_Angka_2021.pdf.
- Chiejina, C., & Olamide, S. E. (2014). Investigating the significance of the 'pay on delivery' option in the emerging prosperity of the Nigerian e-commerce sector. *Journal of Marketing and Management*, 5(1), 120–135.
- Desai, V. (2019). Digital marketing: A review. *International Journal of Trend in Scientific Research and Development*, 5(5), 196-200.
- Gangeshwer, D. K. (2013). E-commerce or Internet Marketing: A business Review from Indian context. *International Journal of u-and e-Service, Science and Technology*, 6(6), 187-194.
- Hair, Joseph F., et al. (2009). *Multivariate Data Analysis: A Global Perspective*. 7th ed. Upper Saddle River: Prentice Hall. Print.

- Haenlein, M., Anadol, E., Farnsworth, T., Hugo, H., Hunichen, J., & Welte, D. (2020). Navigating the New Era of Influencer Marketing: How to be Successful on Instagram, TikTok, & Co. *California management review*, 63(1), 5-25.
- Hill, N., & Jim, A. (2006). *Customer satisfaction and loyalty measurement*. Great Britain: TJ International LTD, Padstow, Cornwall
- Homaidi, A. (2017). Analisis perancangan e-commerce untuk pemasaran olahan hasil perikanan. *Jurnal AiTech*, 3(1), 1-8.
- Internet Service Providers Association. (2021). Peluang Penetrasi Internet dan Tantangan Regulasi Daerah. (Online). Retrieved from <https://apjii.or.id/downfile/file/BULETINAPJIIEDISI79Januari20211.pdf> Accessed on August 28, 2022.
- Istianingsih, I. (2021). Behavior of Using the Food Marketplace System in the New Normal Era of COVID-19 in Indonesia. *Preprints*.
- Kandulapati, S., & Bellamkonda, R. S. (2014). E-service quality: A study of online shoppers in India. *American Journal of Business*, 29(2), 178–188
- Kavitha, T. (2017). Consumer buying behavior of online shopping-a study. *International Journal of Research in Management & Business Studies*, 4(3), 38-41.
- Kementerian Kelautan dan Perikanan. (2021). Angka Konsumsi Ikan RI Capai 55,37 Kg per Kapita pada 2021. (online). Retrieved from [https://databoks.katadata.co.id/datapublish/2022/06/23/kkp-angka-konsumsi-ikan-ri-capai-5537-kg-per-kapita-pada-2021#:~:text=Kementerian%20Kelautan%20dan%20Perikanan%20\(KKP\)%20mencatat%2C%20angka%20konsumsi%20ikan,54%2C56%20kg%2Fkapita](https://databoks.katadata.co.id/datapublish/2022/06/23/kkp-angka-konsumsi-ikan-ri-capai-5537-kg-per-kapita-pada-2021#:~:text=Kementerian%20Kelautan%20dan%20Perikanan%20(KKP)%20mencatat%2C%20angka%20konsumsi%20ikan,54%2C56%20kg%2Fkapita). Accessed on August 29, 2022.
- Khoirinnisa, E., Gumilar, I., & Nurhayati, A. (2016). Analisis Perilaku Konsumen Dalam Keputusan Pembelian Produk Kaki Naga (Studi Kasus di CV. Bening Jati Anugrah, Kabupaten Bogor). *Jurnal Perikanan Kelautan*, 7(1).
- Kotler, P. (1999). *Marketing management: The millennium edition* (Vol. 199). Upper Saddle River, NJ: Prentice Hall.
- Kuspriyono, T. (2017). Pengaruh promosi online dan kemasan terhadap keputusan pembelian kosmetik merek Sariayu Martha Tilaar. *Jurnal Perspektif*, 15(2), 147-154.
- Martilla, J. A., & James, J. C. (1977). Importance-performance analysis. *Journal of marketing*, 41(1), 77-79.
- Mayor, E. (2022). Digital Marketing and The Operation of Small And Medium Scale Enterprises In Benin City During The Covid-19 Pandemic Lockdown Obeki, OS (PhD). *JEBI*, 56.
- Mou, J. B. (2020). *Study on social media marketing campaign strategy--TikTok and Instagram* (Doctoral dissertation, Massachusetts Institute of Technology).
- Muafi, M., Syafri, W., Prabowo, H., & Nur, S. A. (2021). Digital Entrepreneurship in Indonesia: A Human Capital Perspective. *The Journal of Asian Finance, Economics and Business*, 8(3), 351-359.
- Naushad, M. (2021). Investigating determinants of entrepreneurial leadership among SMEs and their role in sustainable economic development of Saudi Arabia. *The Journal of Asian Finance, Economics and Business*, 8(4), 225-237.
- Peter, J. P., Olson, J. C., & Grunert, K. G. (1999). *Consumer behaviour and marketing strategy* (pp. 329-348). London, UK: McGraw-hill.
- Phoolsawat, S., Limkhunthammo, S., Kaewchur, P., & Sansook, J. (2022). An Approach to

- Online Marketing for Promoting Striped Snake-Head Fish Products. *International Journal of Early Childhood*, 14(01), 2110-2116.
- Putri, D. P. K., & Lestari, S. (2016). Pembagian peran dalam rumah tangga pada pasangan suami istri Jawa. *Jurnal Penelitian Humaniora*, 16(1), 72-85.
- Ramya, N., & Ali, S. M. (2016). Factors affecting consumer buying behavior. *International Journal of Applied Research*, 2(10), 76-80.
- Saad, M., Muntalim, M., Anam, M. K., & Sativa, D. O. (2020). Strategi Pemasaran Usaha Pembekuan Ikan Laut Dengan Metode Matriks BCG dan SWOT di CV. Jioen Fishery di Desa Wedung Kecamatan Brondong Kabupaten Lamongan. *Groupier: Jurnal Ilmiah Fakultas Perikanan Universitas Islam Lamongan*, 11(2), 18-26.
- Sabha, S. (2017). SWOT Analysis of Business or Electronic Commerce (E- Commerce). *International Journal of Education and Research*. 5(5), pp. 105-112.
- Sahney, S., Ghosh, K., & Shrivastava, A. (2013). Buyer's motivation for online buying: An empirical case of railway eticketing in Indian context. *Journal of Asia Business Studies*, 8(1), 43-64
- Setiawati, F. A., & Nurhayati, S. R. (2020). Kualitas perkawinan orang Jawa: Tinjauan faktor jenis kelamin, usia perkawinan, jumlah anak, dan pengeluaran keluarga. *Jurnal Ilmu Keluarga & Konsumen*, 13(1), 13-24.
- Simamora, B. (2002). *Panduan riset perilaku konsumen*. Gramedia Pustaka Utama.
- Tambunan, B., Sihombing, H., Doloksaribu, A., & Muda, I. (2018, September). The effect of security transactions, easy of use, and the risk perception of interest online buying on the e-commerce tokopedia site (Study on Tokopedia. id site users in Medan city). In *IOP Conference Series: Materials Science and Engineering* (Vol. 420, No. 1, p. 012118). IOP Publishing.
- Teoh, W. M. Y., Chong, S. C., Lin, B., & Chua, J. W. (2013). Factors affecting consumers' perception of electronic payment: an empirical analysis. *Internet Research*. Vol. 23 No. 4, pp. 465-485
- Tolstoy, D., Nordman, E. R., Hånell, S. M., & Özbek, N. (2021). The development of international e-commerce in retail SMEs: An effectuation perspective. *Journal of World Business*, 56(3), 101165.
- Tran, T. P. (2017). Personalized ads on Facebook: An effective marketing tool for online marketers. *Journal of Retailing and Consumer Services*, 39, 230-242.
- Troy, D. J., & Kerry, J. P. (2010). Consumer perception and the role of science in the meat industry. *Meat science*, 86(1), 214-226.
- Wu, Y., & Chen, H. (2019). The influence of product diversity on consumers' impulsive purchase in online shopping environment. *American Journal of Industrial and Business Management*, 9(3), 680-698.
- Yao, Y., & Zhang, J. (2012). Pricing for shipping services of online retailers: Analytical and empirical approaches. *Decision Support Systems*, 53(2), 368-380.
- Yasmin, A., Tasneem, S., & Fatema, K. (2015). Effectiveness of digital marketing in the challenging age: An empirical study. *International journal of management science and business administration*, 1(5), 69-80.
- Yuliati, U. (2011). Faktor-faktor yang mempengaruhi konsumen dalam pembelian makanan jajan tradisional di Kota Malang. *Manajemen Bisnis*, 1(1), 7-20.