



Survey on the Effects of Internet Technology in the Marketing Development of Betta Fish (*Betta splendens* Regan 1910) in the Muara Fish Market, Bandung City

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

This fisheries sector can be used as a mainstay in overcoming the existing economic crisis. Aquaculture is part of fisheries and has quite potential in Bandung, especially ornamental fish cultivation. Ornamental fish in Indonesia has different types and commodities and also has high economic value in the fisheries sector. This is due to the increase in ornamental fish enthusiasts, both domestic and foreign has increased a bit, especially during the COVID-19 pandemic. Ornamental fish commodities from Indonesia have been able to compete to enter various existing markets. One of the ornamental fish favored by the public is the ornamental betta fish (*Betta*

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splendens). However, many traders are still confused about how to market their ornamental betta fish products, especially during the COVID-19 pandemic. The use of social media can be used as a marketing communication tool so that consumer awareness of ornamental fish can increase in both improving product image and ending in increasing of sales in ornamental fish.

Keywords: *Betta fish; fisheries; social media.*

1. INTRODUCTION

Bandung City is one of the ornamental fish producers in West Java. Geographically, demographically, and climatologically, the city of Bandung has considerable suitability in developing the fisheries sector, including in the ornamental fish cultivation and distribution sector. The city of Bandung is also one of the tourism cities visited by many tourists, both local and foreign [1]. Ornamental betta fish have quite promising economic potential in Indonesia, especially in the city of Bandung [2]. However, so far the cultivation of ornamental betta fish has been mostly carried out by small farmers who sell conventionally at the fishery market and do not have access to sales via the internet. Some ornamental betta fish breeders also have a relatively low level of education so they have not been able to empower their potential to improve their welfare [3].

The use of social media can be used as a marketing communication tool so that consumer awareness of ornamental fish can increase both in improving product image and ending in increasing sales of these ornamental fish. Marketing through social media is one way to expand the market because consumers in the region and outside the region can directly buy and get the desired ornamental betta fish without having to go directly to the area or city of the ornamental betta fish breeder. Seeing that the COVID-19 pandemic is still not over because the increase in COVID-19 sufferers is still happening, the need for interest in ornamental betta fish is also increasing and ornamental betta fish breeders need to develop every insight as well as their ability to market their ornamental betta fish.

Online marketing is the use of networks to reach customers. Bringing together a network of users and resources has resulted in more capabilities for new activities. Separators in each activity and change appear very quickly and link users and computers that have been given a transformation into new business and industrial opportunities in a form of communication tools [4].

Digital marketing is at the core of ongoing e-business [5]. Betta fish marketing through social media is something that is currently being carried out because marketing through social media is more practical, easy to access, could reach consumers wider, and promotion on social media can be used in the form of several things, both audio and visual, where most consumers already have accounts personally in the social media that traders also have [6]. The use of the internet has various advantages that are obtained by both companies and producers of goods and services [7]. One of them is making website and marketplace pages that explain the goods and services. E-commerce can be interpreted as transactions in electronic networks such as the internet in existing businesses. Everyone can participate in e-commerce activities if they have an internet network [8]. One of the advantages of marketing using the internet is that sending data and information to consumers can be done more quickly and easily [9].

2. METHODOLOGY

2.1 Place and Time

This research was carried out on Betta fish traders (*Betta splendens*) at The Muara Fish Markets in Bandung City, West Java Province. The research was conducted from September 2022 to February 2023. This research is carried out in several stages of implementation, the preparation of questions, data collection, data processing, and preparation of reports.

2.2 Research Methods

The research method that will be used in this study is the survey method. A survey method is a form of research method or technique in which research this method collects several information from samples in the form of people through questions that have been prepared beforehand [10]. The data collected in this study are primary and secondary. Primary data will be obtained through direct observation and recording in the field or survey site by observing. Primary data

will also be obtained through direct interviews with selected respondents and using the media in the form of questionnaires or lists of questions that have been prepared beforehand. Respondents consisted of several groups of ornamental betta fish cultivators who carried out digital (online) marketing through social media at The Muara Fish Markets in the city of Bandung. While secondary data will be obtained through government or private agencies, libraries, related literature, and through the results of research that has been done before.

2.3 Observed Parameters

Primary and secondary data through the results of this study will be processed and presented in tabular form, percentage ratios, and average values. Identification tools used to identify research data are:

2.3.1 Identification of qualitative data

Identification in this study was carried out to obtain several things, including:

- 1) Marketing Function
- 2) Market Structure
- 3) Market Behavior
- 4) Obstacles faced by traders who promote their fish through social media

2.3.2 Analysis of business income

Analysis of business income is carried out to find out how much results are obtained for each marketing channel. Business income analysis is carried out using the following concepts:

$$\pi = TR - TC$$

Description:

π = profit

TR = Total Revenue

TC = Total Cost

The business criteria are determined as follows:

If $TR > TC$, then the business will be said to be profitable

If $TR = TC$, then the business will be considered neither profitable nor loss (balanced)

If $TR < TC$, then the business will be considered a loss [6]

2.3.3 Net Present Value (NPV)

Net Present Value is the net benefit that has been reduced by the social opportunity cost of

capital (SOCC) as a discount factor. In other words, more simply, the net present value is the difference between the cost of income and expenses that take into account the time value of money. The time value of money at the present value has a formula that is used to determine the current cost value. The NPV calculation is carried out by considering the incremental costs and incremental benefits with the formula:

$$NPV = \frac{B - C}{(1 + r)^t}$$

Description:

B = Benefits

C = Cost

r = Discount Factor

t = time

With the following criteria:

NPV > 0, the business plan is feasible.

NPV < 0, then the business plan is not feasible.

NPV = 0, then the business plan is in a Break Even Point (BEP) state where TR + TC is in the form of present value [11,12].

3. RESULTS AND DISCUSSION

Data analysis in this study was carried out in a quantitative descriptive manner. The analysis will be carried out based on the characteristic data of the various existing respondents. Quantitative descriptive analysis was carried out to identify quantitative data using multiple linear regression analysis which will be analyzed through Microsoft Excel and Statistical Products and Service Solutions.

3.1 Characteristics of Respondents

3.1.1 Characteristics of respondent's age

Respondents consisted of ornamental betta fish retailers who only marketed their fish digitally and conventionally as a comparison. The total number of ornamental betta fish retailers who were respondents was 39 traders. Through the existing questionnaire data, it can be seen that almost all ornamental betta fish retailers in Bandung are of a productive age because 37 out of 39 ornamental betta fish retailers are in the age range of 25-55 years. There are ornamental betta fish retailers who are at an unproductive age, it is 22 and 57 years old. The diversity of characteristics of the age of ornamental betta fish retailers can be seen in Table 1.

Table 1. Overall Age of Ornamental Betta Fish Retailers

Age (Years)	Number (Person)	Percentage (%)
<25	1	2,6
25 – 50	34	87,2
>50	4	10,2
Total	39	100

3.1.2 Respondent’s education level

Education can be one of the factors in the process of forming a mindset that is owned by someone in responding to a change that occurs. The higher the education of the respondents, the more efficient the business processes in marketing and financial management are. The level of formal education held by ornamental betta fish retailers at the Muara Ornamental Fish Market in the city of Bandung as a whole is generally at the high school level/equivalent.

The diversity of formal education levels of ornamental betta fish retailers can be seen in Table 2.

3.1.3 Use of social media

Ornamental betta fish retailers who carry out digital marketing promote their products through e-commerce or a marketplace that exists. Some diverse e-commerce or marketplace which are used by ornamental betta fish retailers can be seen in Table 3.

In addition to using e-commerce or marketplaces to market their fish products, ornamental betta fish retailers are now utilizing new technology via the internet by using social media to market ornamental betta fish products for sale, in line with the increasing trend of using online-based social media as a sales medium. The diversity of social media used by retailers via digital can be seen in Table 4.

3.2 Market Function

In the distribution activities of marketing commodities to be passed on to consumers, it has a marketing function. Digital marketing is involved in the processes of exchange functions, physical functions, and facilitating functions. The exchange function involves buying as well as selling functions. The physical function involves the function of transporting and storing products including grading and the sorting process of the fish to be traded. Meanwhile, the facilitating function involves the function of capital, existing risk sharing, and market information.

Table 2. Education of Ornamental Betta Fish Retailers Overall way

Final Education	Number (Person)	Percentage (%)
SD	0	0
SMP	5	16,13
SMA	17	54,84
Perguruan Tinggi	9	29,03
Total	31	100

Table 3. Diversity E-Commerce/Marketplace used by Ornamental Betta Fish Retailers

E-commerce/ Marketplace	Number (Person)	Percentage (%)
Shopee	9	50
Tokopedia	9	50
Total	18	100

Table 4. The Diversity of Social Media Used by the Retailers via Digital

Social Media	Number (Person)	Percentage (%)
Facebook	28	42,43
Whatsapp	23	34,85
Instagram	14	21,21
Tiktok	1	1,51
Total	66	100

3.2.1 Implementation of the marketing function through social media

Ornamental betta fish retailers through social media or e-commerce or marketplace usually market their ornamental betta fish products through various existing e-commerce or marketplaces such as Shopee and Tokopedia, as well as marketing also through several social media that exist and are often used by the community such as Facebook, Instagram, Whatsapp, and Tiktok. Consumers who want to purchase ornamental betta fish online through marketplaces or e-commerce, as well as existing social media, can immediately make purchases after they have considered which ornamental betta fish they like and want to buy through product descriptions, photos, and video recordings that may have been included by traders in e-commerce or marketplaces as well as the social media of the traders. If consumers have questions about ornamental betta fish products that they like or want to buy, consumers can directly contact the seller contact listed or through the message facility available directly through the e-commerce or marketplace as well as the social media they use. The payment process in the purchase transaction can be via transfer to the seller's account or through the e-commerce platform or marketplace used. After the consumer makes a payment, the ornamental betta fish products they buy will be prepared and shipped by the ornamental betta fish retailer.

The implementation of marketing functions by traders can be seen in Table 5.

3.2.2 Marketing consumers on social media

Consumers generally carry out a price bargaining process in the process of buying these

ornamental betta fish so that in the end they get the best price according to the agreement that has been made with existing traders. Marketing consumers through social media and e-commerce or marketplaces generally take advantage of several existing services. If consumers come from areas around West Java or the city of Bandung, they usually choose to use Cash on Delivery (COD) services that have been provided by merchants. However, ornamental betta fish retailers who are outside the area of the city of Bandung generally choose delivery via several services provided, such as Gojek, Grab, and other services that have been listed on e-commerce or marketplaces.

3.3 Market Structure

Market structure is a market condition that can provide various clues regarding what aspects have an important influence on every business behavior up to the performance of the market. One of these important aspects is the number of sellers and buyers, barriers to entry and exit of traders in the market, and so on [6]. The market structure is grouped into four types, including perfect competition market, monopoly market, monopolistic competition market, and oligopoly market. The market structure that occurs in the marketing of ornamental betta fish in the city of Bandung through social media is an oligopoly market structure. The oligopoly market structure that occurs in the marketing of ornamental betta fish in the city of Bandung is marked by the number of existing sellers and then each existing seller tends to apply a common market price in that market. The existing market structure can be divided into four determining factors, including the number of marketing agencies, product nature, ease of entry and exit of the market, and market information [7].

Table 5. Marketing Function of Ornamental Betta Fish Traders at the Muara Ornamental Fish Market, Bandung City Marketing Function

Marketing Institute	Marketing Function									
	Exchange		Physic				Facility			
	Buy	Sell	Transport	Process	Save	Sorting	Costs	Risk	Market Information	
Traders	√	√	√	-	√	√	√	√	√	

Information:

√ = Perform marketing functions

- = Does not perform marketing functions

3.3.1 Number of marketing agencies

The marketing agencies involved in marketing activities for ornamental betta fish in the city of Bandung are ornamental betta fish retailers. The number of retail traders who became respondents was 39 people, of which 31 people were conventional betta fish traders who marketed their products digitally as well and 8 traders who marketed their products only conventionally at The Muara Fish Market, Bandung City. The characteristics of retailers are traders who sell their ornamental betta fish products individually or piecemeal directly to the end consumer. Ornamental betta fish retailers generally buy ornamental betta fish from cultivators and wholesalers of ornamental betta fish.

3.3.2 Nature of the product

Ornamental betta fish products sold in the city of Bandung are homogeneous (uniform), whereas ornamental betta fish retailers at The Muara Fish Market in Bandung City only sell ornamental betta fish, not combined with other types of fish. However, the ornamental betta fish that are sold have heterogeneous characteristics (various types) such as Halfmoon, Serit, Plakat, and others. The size of ornamental betta fish sold by ornamental betta fish retailers has various prices sold by traders starting from IDR 8,000 to hundreds of thousands sold by traders at the Muara Ornamental Fish Market, Bandung City.

3.3.3 In and out of the fish market

At the retailer level of ornamental betta fish through social media, there were no significant barriers to entering the market. It's just that the majority of traders find it easier to obtain a business license if they live around The Muara Fish Market, Bandung City. Ornamental betta fish retailers also find it easy to get ornamental betta fish products. The biggest obstacle for traders is the relatively small amount of capital because the purchase of ornamental betta fish is also done on a small scale.

3.3.4 Market information

Market information is needed, especially for marketing agencies if they want a level of efficiency in the market mechanism being implemented. Ornamental betta fish retailers need a variety of information about what things need to be prepared and prevent unwanted things from happening in the selling process. As

one example, the application of prices for ornamental betta fish at The Muara Fish Market in Bandung City depends on market prices and consumer demand. If the demand goes up, the price of ornamental betta fish will go up and vice versa if the demand goes down, the price of ornamental betta fish will also go down. Market information for retailers is entirely obtained from fellow traders who also sell ornamental betta fish. Obtaining information from ornamental betta fish retailers from marketing agencies above can also come from existing local collectors. Sources of information for ornamental betta fish retailers are obtained through the prices paid by local collectors to ornamental betta fish farmers or cultivators which will then be used as a benchmark in determining the selling price of ornamental betta fish later.

3.4 Market Behavior

The process of forming or determining the price of ornamental betta fish for retailers to end consumers is generally determined based on the grade, color, or pattern, as well as the type of the ornamental betta fish. The practice of paying prices used in the purchase process from consumers to retailers can be done in several ways, namely using the cash system if the shipment is Cash on Delivery (COD) or can be transferred via a bank account. The cooperative relationship that exists between retailers and marketing agencies is generally a relationship that has the nature of partners or between sellers and buyers to expedite and facilitate existing sales and purchases.

The percentage comparison of respondents in choosing a payment method can be seen in Table 6.

3.4.1 The Practice of buying and selling activities

Retailers at The Muara Fish Market in Bandung City generally buy these ornamental betta fish through local collectors, cultivators, and farmers by ordering ornamental betta fish which is usually done once to two weeks depending on supplies of pre-owned ornamental betta fish. Retailers generally make payments in cash directly to local collectors, cultivators, and farmers. Ornamental betta fish cultivators will usually sell their products to collectors or retailers within one to two months after harvest. This bond is established because there is a sense of trust that is owned both through the level of pricing and payment of existing crops.

Table 6. Percentage comparison way payment of respondents

Payment Type	Number of respondents	Percentage (%)
Cash on Delivery (COD)	16	51,6
Transfer	15	48,4
Total	31	100

3.4.2 Price determination practices

Price determination by ornamental betta fish retailers to end consumers is generally determined based on several aspects such as the grade, type, color, and pattern of the ornamental betta fish. Pricing usually depends on supply where an increase in the price of ornamental betta fish products sold will cause a decreased level of demand and vice versa, as well as demand where the number of goods offered will have a value comparable or directly proportional to the price so that if there is a price increase, the demand for betta fish ornamental will rise anyway and vice versa. In general, cooperation between retailers will not be carried out in the process of determining prices. The prices offered by retailers are still and usually will always be a process of bargaining to reach the best price through an agreement between consumers and traders. However, there are also consumers or ornamental betta fish hobbyists who do not carry out the bargaining process at all in the process of purchasing the ornamental betta fish they like from retailers.

3.4.3 Price payment practices

As previously mentioned, the process of paying for ornamental betta fish prices at The Muara Fish Market in Bandung City to consumers can be done through:

Cash Payment System:

The cash payment system means that ornamental betta fish will be paid directly either to couriers or to delivery services that are already available in the e-commerce or marketplace used. However, this payment can also be applied if there has been an agreement between the parties from both the consumer and the retailer that the payment will be made using the Cash on a Delivery (COD) system if the consumer is around the city of Bandung, West Java.

Payment System by Transfer to a Bank Account:

This payment system by transfer to a bank account means that consumers will make

payments by transferring an amount of money agreed by both parties to the seller's account or the e-commerce or marketplace used. Consumers will process payments by transferring an amount of money whose nominal value has been agreed upon between the two parties and added to the cost of packaging and shipping fish where the rates given will be calculated automatically by the application system according to the area of each customer. After that, the retailer will carry out the packaging which will then be given to the courier or delivery service that has been chosen by the consumer until it finally arrives at the consumer's place properly.

3.4.4 Cooperation between market institutions

The relationship or collaboration between retailers and marketing agencies above them is generally only a relationship as partners or between sellers and buyers which is used to provide smoothness and convenience in the selling and purchasing process. Collector traders are the first to determine the price of ornamental betta fish to be sold later, followed by marketing agencies below. Retailers in general already understand the policy system so there is no bargaining process for the marketing agencies above it.

3.5 Problems Faced

The problem experienced by retailers, in general, is regarding the mortality rate of ornamental betta fish during delivery. Another problem experienced by ornamental betta fish retailers through social media is limited internet access where the internet network is often unstable and the lack of mastery of information technology for retailers. The packaging process is also a problem for this digital marketing because it requires very safe packaging so that the fish does not experience stress, die, and so on that might occur during the shipping process. Weather is also a problem for ornamental betta fish traders because it affects the process of delivering these products to consumers. Next, the declining and unstable demand and interest

rates are also a problem in the marketing process for ornamental betta fish retailers.

Difficulties in the supply of ornamental betta fish when the fish die while being sent to consumer locations experienced by ornamental betta fish retailers through social media is a major problem because consumers may provide complaints or unfavorable comments due to this problem due to perceived disappointment or incompatibility of betta fish decoration that is received with the results of a physical description in the form of photos and even video recordings provided by the seller and makes the sales level decrease. High technology sometimes makes photos of fish displayed by retailers through social media look better than the original. In general, comments or complaints will be handled by giving discounts or price reductions from those previously paid by consumers to retailers or by providing replacement fish to these consumers. In e-commerce or a marketplace, the delivery system will be carried out first by the retailer and will be paid later when the product reaches the consumer. This is a particular difficulty for ornamental betta fish retailers through social media because the process of receiving the funds takes quite a long time for traders to receive.

3.6 Analysis of Business Income

3.6.1 Business cost structure of ornamental betta fish marketing at estuary market, bandung city

The business cost structure is the number of costs incurred in carrying out the main operating

activities of the trader. The structure of business costs in marketing ornamental betta fish through social media includes labor costs, fish feed costs, internet costs, fish packaging costs, and other costs. The following is an example of recapitulating the structure of business costs per month for marketing ornamental betta fish through social media in the city of Bandung which can be seen in Table 7.

3.6.2 Calculation of business income marketing of ornamental betta fish at estuary market, bandung city

Revenue is a nominal amount of money obtained through the proceeds of sales made through the results of ornamental betta fish products. The determination of the amount of income obtained is the result of subtracting the total income per month from the total operating costs per month so that the results obtained are the total net profit per month obtained from each marketing system for ornamental betta fish that is carried out. The calculation of business income analysis of ornamental betta fish marketing at The Muara Fish Market, Bandung City is shown in Table 8.

Based on (Table 8), it is shown that the net profit per month obtained from the ornamental betta fish marketing system via the internet is of greater value than the conventional betta fish marketing system. This is because marketing via the internet is considered more efficient. After all, it can reach a wider range of consumers outside the area where traders are located.

Table 7. Cost Structure of Marketing Ornamental Betta Fish through Social Media in the City of Bandung per Month

No.	Cost Components	Cost (IDR)
1.	Labor	2.000.000
2.	Fish Feeding	500.000
3.	Fish Packaging	450.000
4.	Internet Bills	100.000
Total		3.050.000

Table 8. Business Income of Ornamental Betta Fish Marketing

Marketing System	Total Average Revenue (IDR)	Total Average Operating Costs (IDR)	Total Average Net Profits (IDR)
Internet	4.700.000	1.150.000	3.550.000
Conventional	1.718.000	318.000	1.400.000

3.7 Calculation of Net Present Value (NPV)

To calculate the Net Present Value (NPV) of a sale, an interest rate is required which is used as a discount rate or discount factor. The interest rate is a macro variable that always shows a change from time to time or does not have a constant or stable nature. Therefore it can be concluded that the interest rate is the price for using money expressed in percent (%) for a certain period or period of time. The following presents the results of the calculation of the Net Present Value (NPV) of ornamental betta fish marketing through social media in Tables 9 and 10.

Based on the use of the formula of Net Present Value (NPV) where profit is the result of deducting income (benefit) with total cost (cost) divided by 1 plus r (interest rate) then raised to the power of t (time). The interest rate (r) in 2022 (currently) is 6%. The interest rate used is reviewed based on data obtained from the BI rate (rate), which is the percentage of reference interest issued by the Indonesian monetary authority, which later this monetary authority will be followed by corporations of various banks in Indonesia, which will later be used to raise or lower interest rates respectively. Therefore, the real next 10 years according to r (interest rate) on the marketing of ornamental betta fish in the city of Bandung is shown in Table 11.

Based on the Table 11, it can be seen that the average constant profit of marketing ornamental betta fish through social media at this time or in 2022 is IDR 42,600,000 and will change to IDR 23,788,251 in the next ten years or 2032. Therefore it can be seen that the advantages of marketing ornamental betta fish via the internet or social media are in the profitable category because Benefit (B) – Cost (C) has a positive value. Likewise with the conventional marketing of ornamental betta fish which this year or 2022 has an average profit of IDR 16,800,000 and will change to IDR 9,381,282 in the next ten years, namely in 2032. However, based on real profit data In the next 10 years, it can be seen that the profits from marketing ornamental betta fish via the internet or social media have a greater value compared to conventional marketing of ornamental betta fish.

In addition, it is assumed that the marketing of ornamental betta fish via the internet or social media in the city of Bandung will experience an increase in profit returns of 10% annually because, at this time, the growth of marketing via the internet or social media in Indonesia has the potential to experience rapid development compared to several years earlier as the development of existing technology. The results of calculating the Net Present Value (NPV) of ornamental betta fish marketing via the internet or social media and real next 10 years using the assumption of a profit increase of 10% each year are presented in Tables 12 and 13.

Table 9. Calculation Results Net Present Value (NPV) of Ornamental Betta Fish Marketing through Social Media

Average profit/year (B - C)	r (Interest Rate) 2022 (%)
IDR 42.600.000	6
$NPV = \frac{42.600.000}{(1 + 6\%)^{10}} = \frac{42.600.000}{1,7908} = Rp\ 23.788.251$	

Table 10. Calculation Results Net Present Value (NPV) of Ornamental Betta Fish Marketing through Conventional

Average profit/year (B - C)	r (Interest Rate) 2022 (%)
IDR 16.800.000	6
$NPV = \frac{16.800.000}{(1 + 6\%)^{10}} = \frac{16.800.000}{1,7908} = Rp\ 9.381.282$	

Table 11. Real Profit Data for 10 Years to Come with r (Interest Rate)

Marketing System	Current profit (IDR)	Profit 10 years to come (IDR)
Internet	42.600.000	23.788.251
Conventional	16.800.000	9.381.282

Table 12. Calculation Results Net Present Value (NPV) of Ornamental Betta Fish Marketing via the Internet with Assumption of a 10% Profit Increase per Year

Average profit/year(B – C)	r (Interest Rate) 2022 (%)
IDR 46.860.000	6
$NPV = \frac{46.860.000}{(1 + 6\%)^{10}} = \frac{46.860.000}{1,7908} = Rp\ 26.167.076$	

Table 13. Real Profit Data for the Next 10 Years with an Assumption of 10% Profit Increase per Year

Marketing System	Current Profit (IDR)	Profit 10 Years to Come (IDR)
Internet	42.600.000	26.167.076

Table 14. ANOVA Testing (F test) The Effect of the Number of Sales, Prices, and Costs on Net Present Value (NPV)

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	37694.700	3	1256.890	46.285	.000 ^b
	Residual	7329.120	27	271.486		
	Total	4502.800	30			

a. Dependent Variable: NPV (Y)

b. Predictors: (Constant), Cost (X₃), Price (X₂), Sales Amount (X₁)

$$H_0 : \alpha_1 = \alpha_2 = \alpha_3 = 0$$

H₁ : there should be at least one β ≠ 0

α : 0,05

Based on Table 13 which has been presented above, it can be seen that the average profit of marketing ornamental betta fish via the internet or social media at this time or in 2022 is IDR 42,600,000 which will change to IDR 26,167,076 the next ten years or in 2032 assuming an increase in profit on sales of 10% per year. It can be seen that the advantages of marketing ornamental betta fish via the internet or social media are experiencing profits because the results of Benefit (B) – Cost (C) have positive results.

3.7 Multiple Linear Regression Analysis

To find out whether or not there is an influence between the results or the number of sales, prices, and costs on the NPV value of ornamental betta fish marketing respondents via the internet or social media, a multiple linear regression analysis methods will be used which has the objective of estimating the relationship between the values of the dependent variable and the existing independent variables.

Following the results of the F test in Table 11 above, the P-value is very small, namely 0.000 and this value is smaller than the value α = 0.05. Therefore, it can be concluded that H₀ was rejected so it can be concluded that through the three existing independent variables, there is at least 1 variable that has a significance influence on the Net Present Value (NPV). Then the first regression model can be formed which contains only variables that have significant as follows:

$$Y = 9.527 \times 10^5 + 3.192 X_1 - 13.951 X_2 + 0.169 X_3$$

Information: Y = Net Present Value (NPV)
 X₁ = Sales Amount (tail)
 X₂ = Price (Rp)
 X₃ = Cost (Rp)

Then to find out how well the regression model will be formed, it will be seen through the R square value shown in Table 15.

Table 15. Value of R Square

Model Summary				
Model	R	R Square	Adjusted R Square	Std. an error in the Estimate
1	.915 ^a	.837	.819	16476.35036

a. Predictors: (Constant), Cost (X_3), Price (X_2), Sales Amount (X_1)

In Table 15 above it can be seen that the R square value for the first regression model has a value of 0.837. This indicates that 83.7% of the diversity of values in Net Present Value (NPV) can be explained through the regression model that has been formed, while the remaining value of 16.3% is caused by various other factors that cannot yet be included in the regression model that has been formed. The interpretation of this is:

- a. The coefficient value on the variable number of sales (X_1) has a positive value indicating that when the variable has high number of sales, the variable value on the Net Present Value (NPV) will also increase, and vice versa if the number of sales decreases, the value variables in the Net Present Value (NPV) will decrease. This is also a marker or determinant that when the number of sales has a high value, the Net Present Value (NPV) will also have a high value. However, if the lower the value of the number of existing sales, the lower the value of the Net Present Value (NPV) will also be.
- b. The coefficient value on the price variable (X_2) has a negative value. This means that when the value of the price variable has a high value, the Net Present Value (NPV) variable value will have a low value, and vice versa if the price variable value has a low value, the Net Present Value (NPV) will have a high value. This indicates that the higher the price value, the lower the Net Present Value (NPV), or the lower the price value, the higher the Net Present Value (NPV).
- c. The coefficient value of the cost variable (X_3) has a positive value indicating that when the value of the cost variable is high, the value of the Net Present Value (NPV) variable will also have a high value, and vice versa if the value of the cost variable has a low value, then the value of the variable Net Present Value (NPV) will also have a low value. This indicates that the higher the cost, the higher the Net Present Value (NPV), or the lower the cost, the lower the Net Present Value (NPV).

4. CONCLUSION

Based on research that has been conducted regarding the impact of digital marketing on the level of sales of ornamental betta fish (*Betta splendens*) at the Muara Ornamental Fish Market, Bandung City, it can be concluded that marketing ornamental betta fish via the internet or social media can have a good impact and increase the level of income or income of ornamental fish retailers is increasing. Based on the results of business income analysis calculations on ornamental betta fish marketing via the internet or social media at the Muara Ornamental Fish Market, Bandung City, an average profit per month of IDR 4,244,355 is obtained, while conventional betta fish marketing has an average profit per month of IDR 1,400,000 which proves that marketing is done digitally or via the internet has a higher level of efficiency than conventional marketing. This is also shown through the ease in carrying out the process of promoting ornamental betta fish products through e-commerce, marketplaces, or social media used by sellers or retailers of ornamental betta fish. Ease of obtaining markets, making payments, and shipping, as well as greater profits and operational costs that have a lower value than conventional marketing of ornamental betta fish is one of the advantages and proof of the efficiency of digital marketing through e-commerce or marketplaces and media compared to the conventional marketing of ornamental betta fish.

CONSENT

As per international standards or university standards, respondent's written consent has been collected and preserved by the author(s).

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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