

1 **Original Research Article**

2 **THE IMPACT OF DIGITAL MARKETING ON**  
3 **SALES LEVELS OF ORNAMENTAL BETTA FISH**  
4 **(*Betta splendens* Regan 1910) IN THE MUARA**  
5 **FISH MARKET, BANDUNG CITY**

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**ABSTRACT**

This fisheries sector can be used as a mainstay in overcoming the existing economic crisis. Aquaculture in the city of Bandung has quite potential, especially ornamental fish cultivation. Ornamental fish in Indonesia have quite a lot of types and commodities and have high economic value in the fisheries sector. This is due to the increase in ornamental fish enthusiasts, both domestic and foreign, which has increased quite 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 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 both in improving product image and ending in increasing sales of these ornamental fish.

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19 *Keywords: Betta Fish, Fisheries, Social Media*

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21 **1. INTRODUCTION**

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

33 The use of social media can be used as a marketing communication tool so that consumer  
34 awareness of ornamental fish can increase both in improving product image and ending in

35 increasing sales of these ornamental fish. Marketing through social media is one way to  
36 expand market because consumers in the region and outside the region can directly buy and  
37 get the desired ornamental betta fish without having to go directly to the area or city of the  
38 ornamental betta fish breeder. Seeing that the COVID-19 pandemic is still not over because  
39 the increase in COVID-19 sufferers is still happening, the need for interest (hobby) for  
40 ornamental betta fish is also increasing and ornamental betta fish breeders need to develop  
41 every insight as well as their ability to market their ornamental betta fish.

42 Online marketing is the use of networks to reach customers. Bringing together a network of  
43 users and resources has resulted in more capabilities for new activities. Separators in each  
44 activity and change appear very quickly and link users and computers that have been given  
45 a transformation into new business and industrial opportunities in the form of communication  
46 tools [3].

47 Betta fish marketing through social media is something that is currently being carried out  
48 because marketing through social media is more practical, easy to access, could reach  
49 consumer wider, and promotion on social media can be used in the form of several things,  
50 both audio and visual, where most consumers already have accounts personally in the social  
51 media that traders also have. The use of the internet has various advantages that are  
52 obtained by both companies and producers of goods and services. One of them is making  
53 website and marketplace pages that provide an explanation of the goods and services. E-  
54 commerce can be interpreted as transactions in electronic networks such as the internet in  
55 existing businesses. Everyone can participate in e-commerce activities if they have an  
56 internet network [4]. One of the advantages of marketing using the internet is that sending  
57 data and information to consumers can be done more quickly and easily [5].

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## 59 **2. METHODOLOGY**

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### 61 **2.1 Place and Time**

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63 This research will be conducted on Betta fish traders (*Betta splendens*) at The Muara Fish  
64 Markets in Bandung City, West Java Province. When the research will be conducted in  
65 September 2022 to January 2023. This research is carried out in several stages of  
66 implementation, namely preparation of questions, data collection, data processing and  
67 preparation of reports.

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### 69 **2.2 Research Methods**

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71 The research method that will be used in this study is survey method. The survey method is  
72 a form of research method or technique in which research with this method collects a  
73 number of information from samples in the form of people through questions that have been  
74 prepared beforehand. The data collected in this study are primary and secondary data.  
75 Primary data will be obtained through direct observation and recording in the field or survey  
76 site by observing. Primary data will also be obtained through direct interviews with selected  
77 respondents and using the media in the form of questionnaires or lists of questions that have  
78 been prepared beforehand. Respondents consisted of several groups of ornamental betta  
79 fish cultivators who carried out digital (online) marketing through social media at The Muara  
80 Fish Markets in the city of Bandung. While secondary data will be obtained through  
81 government or private agencies, libraries, related literature, and through the results of  
82 research that has been done before.

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### 84 **2.3 Observed Parameters**

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

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90 **2.3.1 Identification of Qualitative Data**

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

93 1) Marketing Function

94 2) Market Structure

95 3) Market Behavior

96 4) Obstacles faced by traders who promote their fish through social media

97 **2.3.2 Analysis of Business Income**

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

$$\pi = TR - TC$$

100 Description:  $\pi$  = profit

101 TR = Total Revenue

102 TC = Total Cost

103 With the business criteria determined as follows:

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

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

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

107 **2.3.3 Net Present Value (NPV)**

108 Net Present Value is the net benefit that has been reduced by social opportunity cost of  
 109 capital (SOCC) as a discount factor. In other words, in a simpler way, the net present value  
 110 is the difference between the cost of income and expenses that takes into account the time  
 111 value of money. Time value of money at the present value has a formula that is used to  
 112 determine the current cost value. The NPV calculation is carried out by considering the  
 113 incremental costs and incremental benefits with the formula:

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

114 Description: B = Benefits

115 C = Cost

116 r = Discount Factor

117 t = time

118 With the following criteria:

119  $NPV > 0$ , the business plan is feasible.

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

121  $NPV = 0$ , then the business plan is in a Break Even Point (BEP) state where  $TR + TC$  is in  
 122 the form of present value. [5]

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124 **3. RESULTS AND DISCUSSION**

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

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132 **3.1 Characteristics of Respondents**

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134 **3.1.1 Characteristics of Respondents Age**

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

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145 **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

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147 **3.1.2 Respondents Education Level**

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

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

157 **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

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159 **3.1.3 Use of Social Media**

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

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

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

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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 the retailers via digital can be seen in **Table 4**.

**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

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### **3.2 Market Function**

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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.

#### **3.2.1 Implementation of the Marketing Function through Social Media**

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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.

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

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

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

206 Information:     √ = Perform marketing functions  
 207                     - = Does not perform marketing functions

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 210 **3.2.2 Marketing Consumers on Social Media**

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

220 **3.3 Market Structure**

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

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 235 **3.3.1 Number of Marketing Agencies**

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

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 245 **3.3.2 Nature of the Product**

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

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### 254 **3.3.3 In and Out of the Fish Market**

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

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### 262 **3.3.4 Market Information**

263 Market information is needed, especially for marketing agencies if they want a level of  
 264 efficiency in the market mechanism being implemented. Ornamental betta fish retailers need  
 265 a variety of information about what things need to be prepared and prevent unwanted things  
 266 from happening in the selling process. As one example, the application of prices for  
 267 ornamental betta fish at The Muara Fish Market in Bandung City depends on market prices  
 268 and consumer demand. If the demand goes up, the price of ornamental betta fish will go up  
 269 and vice versa if the demand goes down, the price of ornamental betta fish will also go  
 270 down. Market information for retailers is entirely obtained from fellow traders who also sell  
 271 ornamental betta fish. Obtaining information from ornamental betta fish retailers from  
 272 marketing agencies above can also come from existing local collectors. Sources of  
 273 information for ornamental betta fish retailers are obtained through the prices paid by local  
 274 collectors to ornamental betta fish farmers or cultivators which will then be used as a  
 275 benchmark in determining the selling price of ornamental betta fish later.

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## 277 **3.4 Market Behavior**

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

287 Percentage comparison of respondents in choosing a payment method can be seen through  
 288 **Table 6.**

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290 **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

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### 292 **3.4.1 The Practice of Buying and Selling Activities**

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

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#### **3.4.2 Price Determination Practices**

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

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#### **3.4.3 Price Payment Practices**

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

##### 319 1. Cash Payment System

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

##### 325 2. Payment System by Transfer to a Bank Account

326 This payment system by transfer to a bank account means that consumers will make  
327 payments by transferring an amount of money agreed by both parties to the seller's account  
328 or the e-commerce or marketplace used. Consumers will process payments by transferring  
329 an amount of money whose nominal value has been agreed between the two parties and  
330 added to the cost of packaging and shipping fish where the rates given will be calculated  
331 automatically by the application system according to the area of each customer. After that,  
332 the retailer will carry out the packaging which will then be given to the courier or delivery  
333 service that has been chosen by the consumer until it finally arrives at the consumer's place  
334 properly.

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#### **3.4.4 Cooperation between Market Institutions**

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

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344 **3.5 Problems Faced**

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

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

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371 **3.6 Analysis of Business Income**

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373 **3.6.1 Business Cost Structure of Ornamental Betta Fish Marketing at Estuary Market,**  
 374 **Bandung City**

375 The business cost structure is a number of costs incurred in carrying out the main  
 376 operational activities of the trader. The structure of business costs in marketing ornamental  
 377 betta fish through social media includes labor costs, fish feed costs, internet costs, fish  
 378 packaging costs and other costs. The following is an example of recapitulating the structure  
 379 of business costs per month for marketing ornamental betta fish through social media in the  
 380 city of Bandung which can be seen in **Table 7**.

381

382 **Table 7.** Cost Structure of Marketing Ornamental Betta Fish through Social Media in the City  
 383 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

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385 **3.6.2 Calculation of Business Income Marketing of Ornamental Betta Fish at Estuary**  
 386 **Market, Bandung City**

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

394 **Table 8.** Business Income of Ornamental Betta Fish Marketing  
 395

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

396 Based on (Table 8), it is shown that the net profit per month obtained from the ornamental  
 397 betta fish marketing system via the internet is of greater value than the conventional betta  
 398 fish marketing system. This is because marketing via the internet is considered more  
 399 efficient because it can reach a wider range of consumers outside the area where traders  
 400 are located.  
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403 **3.7 Calculation of Net Present Value (NPV)**  
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405 In order to calculate the Net Present Value (NPV) of a sale, an interest rate is required which  
 406 is used as a discount rate or discount factor. The interest rate is a macro variable that  
 407 always shows a change from time to time or does not have a constant or stable nature.  
 408 Therefore it can be concluded that the interest rate is the price for using money expressed in  
 409 percent (%) for a certain period or period of time. The following presents the results of the  
 410 calculation of the Net Present Value (NPV) of ornamental betta fish marketing through social  
 411 media in **Table 9** and **10**.

412 **Table 9.** Calculation Results Net Present Value (NPV) of Ornamental Betta Fish Marketing  
 413 through Social Media  
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Average profit/year (B - C)	r (Interest Rate) 2022 (%)
IDR 42.600.000	6

$$NPV = \frac{42.600.000}{(1 + 6\%)^{10}} = \frac{42.600.000}{1,7908} = Rp 23.788.251$$

415 **Table 10.** Calculation Results Net Present Value (NPV) of Ornamental Betta Fish Marketing  
 416 through Conventional  
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Average profit/year (B - C)	r (Interest Rate) 2022 (%)
IDR 16.800.000	6

$$NPV = \frac{16.800.000}{(1 + 6\%)^{10}} = \frac{16.800.000}{1,7908} = Rp 9.381.282$$

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

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**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

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Based on the table above, 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 in 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.

442 In addition, it is assumed that the marketing of ornamental betta fish via the internet or social  
 443 media in the city of Bandung will experience an increase in profit returns of 10% annually  
 444 because at this time, the growth of marketing via the internet or social media in Indonesia  
 445 has the potential to experience rapid development compared to several years earlier as the  
 446 development of existing technology. The results of calculating the Net Present Value (NPV)  
 447 of ornamental betta fish marketing via the internet or social media and real next 10 years  
 448 using the assumption of a profit increase of 10% each year are presented in **Tables 12** and  
 449 **13**.

450  
 451  
 452

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

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

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

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

455

456 Based on Table 13 which has been presented above, it can be seen that the average profit  
 457 of marketing ornamental betta fish via the internet or social media at this time or in 2022 is  
 458 IDR 42,600,000 which will change to IDR 26,167,076 in the next ten years or in 2032  
 459 assuming an increase in profit on sales of 10% per year. It can be seen that the advantages  
 460 of marketing ornamental betta fish via the internet or social media are experiencing profits  
 461 because the results of Benefit (B) – Cost (C) have positive results.  
 462

463 **3.7 Multiple Linear Regression Analysis**  
 464

465 To find out whether or not there is an influence between the results or the amount of sales,  
 466 prices, and costs on the NPV value of ornamental betta fish marketing respondents via the  
 467 internet or social media, a multiple linear regression analysis method will be used which has  
 468 the objective of estimating the relationship between the values of the dependent variable and  
 469 the existing independent variables.  
 470

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

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

a. Dependent Variable: NPV (Y)

b. Predictors: (Constant), Biaya (X<sub>3</sub>), Harga (X<sub>2</sub>), Jumlah Penjualan (X<sub>1</sub>)

473 H<sub>0</sub> : β<sub>1</sub> = β<sub>2</sub> = ...β<sub>1</sub> = 0

474 H<sub>1</sub> : minimal ada satu nilai β yang ≠ 0

475 α : 0,05

476

477 In accordance with the results of the F test in Table 11 above, the P-value is very small,  
 478 namely 0.000 and this value is smaller than the value α = 0.05. Therefore, it can be  
 479 concluded that H<sub>0</sub> rejected so that it can be concluded that through the three existing  
 480 independent variables, there is at least 1 variable that has a significant influence on the Net  
 481 Present Value (NPV). Then the first regression model can be formed which contains only  
 482 variables that have significant as follows:

483 
$$Y = 9.527 \times 10^5 + 3.192 X_1 - 13.951 X_2 + 0.169 X_3$$

484 Information: Y = Net Present Value (NPV)

485 X<sub>1</sub> = Sales Amount (tail)

486 X<sub>2</sub> = Price (Rp)

487 X<sub>3</sub> = Cost (Rp)

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

490

491 **Table 15.** Value of R Square

<b>Model Summary</b>				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.915 <sup>a</sup>	.837	.819	16476.35036

a. Predictors: (Constant), Biaya (X<sub>3</sub>), Harga (X<sub>2</sub>), Jumlah Penjualan (X<sub>1</sub>)

492

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

498 a. The coefficient value on the variable number of sales ( $X_1$ ) has a positive value indicating  
499 that when the variable has a high number of sales, the variable value on the Net Present  
500 Value (NPV) will also increase, and vice versa if the number of sales decreases, the value  
501 variables in the Net Present Value (NPV) will decrease. This is also a marker or determinant  
502 that when the number of sales has a high value, the Net Present Value (NPV) will also have  
503 a high value. However, if the lower the value of the number of existing sales, the lower the  
504 value of the Net Present Value (NPV) will also be.

505 b. The coefficient value on the price variable ( $X_2$ ) has a negative value. This means that  
506 when the value of the price variable has a high value, the Net Present Value (NPV) variable  
507 value will have a low value, and vice versa if the price variable value has a low value, the  
508 Net Present Value (NPV) will have high value. This indicates that the higher the price value,  
509 the lower the Net Present Value (NPV), or if the lower the price value, the higher the Net  
510 Present Value (NPV).

511 c. The coefficient value of the cost variable ( $X_3$ ) has a positive value indicating that when the  
512 value of the cost variable is high, the value of the Net Present Value (NPV) variable will also  
513 have a high value, and vice versa if the value of the cost variable has a low value, then the  
514 value of the variable Net Present Value (NPV) will also have a low value. This indicates that  
515 the higher the cost, the higher the Net Present Value (NPV), or the lower the cost, the lower  
516 the Net Present Value (NPV).

517

#### 518 **4. CONCLUSION**

519

520 Based on research that has been conducted regarding the impact of digital marketing on the  
521 level of sales of ornamental betta fish (*Betta splendens*) at the Muara Ornamental Fish  
522 Market, Bandung City, it can be concluded that marketing ornamental betta fish via the  
523 internet or social media can have a good impact and increase the level of income or income  
524 of ornamental fish retailers is increasing. Based on the results of business income analysis  
525 calculations on ornamental betta fish marketing via the internet or social media at the Muara  
526 Ornamental Fish Market, Bandung City, an average profit per month of IDR 4,244,355 is  
527 obtained, while conventional betta fish marketing has an average profit per month of IDR  
528 1,400,000 which proves that marketing done digitally or via the internet has a higher level of  
529 efficiency than conventional marketing. This is also shown through the ease in carrying out  
530 the process of promoting ornamental betta fish products through e-commerce, marketplaces,  
531 or social media used by sellers or retailers of ornamental betta fish. Ease of obtaining  
532 markets, making payments and shipping, as well as greater profits and operational costs that  
533 have a lower value than conventional marketing of ornamental betta fish is one of the  
534 advantages and proof of the efficiency of digital marketing through e-commerce or  
535 marketplaces and media compared to the conventional marketing of ornamental betta fish.

536

551 **CONSENT**

552

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

555

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