

# Determinants of Food Consumer Satisfaction in Online Marketplaces: The Influence of Website Quality, Product, Price, Responsiveness, and Service

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**Abstract.** Recently, there has been a growing trend of selling food products online through marketplaces. Consumer satisfaction plays a crucial role in supporting the sustainability of online food businesses. This study investigated the roles of website quality, product quality, price, responsiveness, and service on consumer satisfaction with food products on Bedukmutu—an online marketplace. A 5-point Likert scale, Spearman's rank correlation, and ordinal logistic regression were employed to explore consumer satisfaction and identify the factors correlating with and influencing consumer satisfaction with online food products. The results revealed that product quality, price, and service significantly affected consumer satisfaction with online food products in the marketplace.

## 1 Introduction

Online food product marketing has been growing recently, especially in the post-COVID-19 pandemic. In addition to reaching a wider range of consumers and being cost-efficient, online product marketing also provides a unique experience for consumers compared to conventional ones [1].

Various online platforms have been popularly utilized in Indonesia to sell food products, ranging from social media applications such as WhatsApp, Instagram, and Facebook to marketplace platforms such as Tokopedia, Shopee, and Bukalapak [2–4]. A marketplace refers to an e-commerce platform, which can be a website or application that connects sellers with consumers to offer goods and services [5].

The escalating use of the Internet may support the growing development of e-commerce in Indonesia. Datareportal report in 2023 unveiled that 185.3 million active internet users in Indonesia, accounting for around 66.5% of the population, underwent a slight increase of 0.8% compared to the previous year [6]. Accordingly, it has supported the digital economic climate in the country, as stated in the e-Conomy SEA 2023 report by Google, Temasek,

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and Bain & Company. The report revealed that the value of Indonesia's digital economy in 2023 reached USD 83 billion, representing a rise of around 8% compared to 2022 [7].

Bedukmutu, whose name is an acronym for the Indonesian term "*Bela Beli Bermutu Produk Muhammadiyah*", is an online marketing platform developed by Universitas Muhammadiyah Yogyakarta (UMY). This online marketing platform has experienced significant growth since its establishment in April 2017. Its primary objective is to effectively utilize the economic potential of Muhammadiyah citizens—a prominent community organization in Indonesia [8]. Bedukmutu trades a diverse range of food products, including fresh food such as vegetables and fruit, staple food such as rice, flour, cooking oil, and ready-to-eat processed food. Prior to 2020, access to Bedukmutu was restricted to the academic community of UMY, including lecturers, students, and employees who were members of Muhammadiyah. Nevertheless, the potential for future expansion outside UMY remains open [9].

In contrast to other online marketplaces, where consumers come from the public, Bedukmutu's consumer base is currently limited to members of UMY. Membership is incentivized by performance value points awarded to lecturers and employees who engage in transactions on Bedukmutu. Additionally, lecturers and employees receive Bedukmutu shopping vouchers, which can be employed to purchase any product. This performance point and shopping voucher policy encourages lecturers and employees of UMY to boost their participation in making transactions through Bedukmutu.

In an effort to expand the market coverage of Bedukmutu, development needs to focus on customer service and the system adopted. Improvements in customer service and system enhancements, such as the website interface, are expected to encourage consumers to make purchases not only due to external incentives but also from a natural inclination. Good customer service will foster customer satisfaction.

Several studies have explored Bedukmutu marketplace, including its impact on student entrepreneurship. This study found that the use of Bedukmutu app at Universitas Muhammadiyah Yogyakarta over a year yielded impressive results, with the student entrepreneurship initiative generating billions of rupiahs each month [10]. Moreover, a research on Bedukmutu's marketing model highlighted its focus on entrepreneurship, using a consumer-to-consumer (C2C) e-commerce platform and utilizing the Muhammadiyah network as a key market development partner [11]. Additionally, studies on consumer loyalty revealed that product variety is a major factor influencing loyalty at Bedukmutu [12]. Another study on consumer value perception showed that service quality positively impacted perceived value, moderated by corporate image [13]. Additionally, research on consumer behavior during the COVID-19 pandemic found a slight rise in monthly food purchases, especially for cooking oil and beverages, and noted that product compatibility and usability had a significant positive effect on consumers' purchase intentions during the pandemic [9].

There have been several studies related to consumer satisfaction in prominent online marketplaces, such as Shopee and Tokopedia. These studies examine the influence of price, service, and promotions on various types of products [14,15]. Despite its importance, research focused on consumer satisfaction with food products on Bedukmutu remains limited. Earlier studies on Bedukmutu have treated consumer satisfaction as a crucial factor in shaping consumer value perception. However, there has yet to be research that specifically investigates the variables influencing consumer satisfaction on Bedukmutu [13]. Therefore, this paper aims to identify the variables affecting consumer satisfaction, particularly among food product consumers on Bedukmutu. The variables encompass website quality, product, price, responsiveness, and service on Bedukmutu. Consumer satisfaction is a crucial factor in the sustainability of a marketplace business. Therefore, determining the factors influencing consumer satisfaction with Bedukmutu is necessary.

## 2 Methodology

This research employed a quantitative descriptive method aimed at obtaining information, explanations, and conditions and utilized this information to describe things as they truly are, factually and systematically [16]. The research location at UMY was deliberately selected due to its status as the business and development center of Bedukmutu.

Food products examined in this research refer to the food categorization system for the General Standard for Food Additives (GSFA) from the Food and Agriculture Organization (FAO). The FAO classifies food products into 16 groups: milk and its derivatives, oils, ice, fruits and vegetables, meat and processed meat products, eggs and processed egg products, fish, spices, salt, bread, cereals, grains, beverages, and processed foods [17]. Previous research unveiled that 1,809 food products were traded on Bedukmutu in 2018. This number nearly doubled to 3,595 products in 2020 [11]

Primary data for this study were obtained through a survey of Bedukmutu consumers, specifically lecturers and employees of UMY. According to the Bureau of Human Resources (BSDM) at UMY, there were 831 permanent lecturers and employees during the study period [18]. A total of 549 individuals were contacted via email and WhatsApp to complete a questionnaire through Google Forms. Following the distribution of the questionnaire, 128 respondents participated; however, only 104 respondents met the criteria for inclusion in this study.

The bivariate Pearson test revealed that all research variables were valid, as the calculated R for each variable is greater than the R table value at a 5% error rate and a 95% confidence level. Based on the Cronbach's alpha score presented in Table 1, each variable has a value greater than 0.70 ( $r_i > 0.70$ ), attesting to the validity and reliability of all variables in this study.

**Table 1.** Reliability test results of research instruments

Variable	Cronbach Alpha	R critical score
Website quality	0.745	0.700
Product quality	0.734	0.700
Responsiveness	0.928	0.700
Price	0.920	0.700
Service	0.874	0.700
Consumer satisfaction	0.853	0.700

Consumer satisfaction with Bedukmutu was measured using a 5-point Likert scale and analyzed descriptively using the average score of each variable. Five variables were employed to measure consumer satisfaction with food products on Bedukmutu: website quality, product quality, seller responsiveness, price, and service. The relationship between these variables and consumer satisfaction was determined using Spearman's rank correlation. In addition, the Ordinal Logistic Regression (OLR) was employed to examine the determinant factor of Bedukmutu consumer satisfaction. The Ordinal Logistic Regression (OLR) is the most appropriate method for analyzing this categorical data [19].

## 3 Results and Discussion

### 3.1 Respondent profile

The respondents of this study were Bedukmutu food product consumers, encompassing lecturers and permanent employees of UMY. The data served as the basis for characterizing the consumer respondents. Six demographic variables were adopted to describe the

respondents, encompassing gender, age, education level, residence area, income, and household members. Table 2 displays the detailed demographics of the respondents.

**Table 2.** Respondent demographic profile (N=104)

No	Variable	Range	Respondent	
			Number	%
1	Gender	Male	67	64.42
		Female	37	35.57
2	Residence	Urban	51	66.35
		Rural	53	33.65
3	Age (Year)	Millennial (21 - 40)	45	43.27
		Generation X (41 - 56)	54	51.92
		Baby Boomers (57- 75)	5	4.81
4	Education	Senior High School	18	17.3
		Diploma	3	2.9
		Bachelor	13	12.5
		Master	51	49.0
		Doctorate	19	18.3
5	Take-home pay (IDR/month)	<5,000,000	52	50.0
		5,000,000 - ≤10,000,000	41	39.4
		>10,000,000 - ≤15,000,000	8	7.7
		>15,000,000	3	2.9
6	Household member	0 – 2	47	45.2
		3 – 4	47	45.2
		≥ 5	10	9.6

Table 2 depicts males as the majority of respondents, totaling 67 individuals or 64.4%. This finding aligns with the 2020 data from the Human Resources Bureau of UMY, which reported that the majority of UMY employees (522 out of 831) were male [18]. Moreover, when broken down by residence, the numbers were relatively similar, with 49% residing in urban regions and 51% in rural areas. Additionally, the majority of respondents (60 individuals or 57.7%) were also members of Generation X, with ages ranging from 40 to 60 years. Millennials closely followed, constituting 40.4% of the total respondents, while the remaining 1.9% were the Baby Boomers. These data unveiled that Generation X and millennials were the predominant consumers of Bedukmutu products. Previous research on online purchasing of food products highlighted differences in purchasing behavior between consumer cohorts. Safety considerations have become the primary factor for Generation X when selecting products, whereas Generation Y (millennials) tend to prioritize the availability of information [20]. More specifically, Generation X, despite being relatively older than the millennials, still demonstrated a high interest in purchasing online food products. This interest is partly due to the benefits offered by online purchases, such as convenience and satisfaction [21]. The significant online purchasing activity among Generation X is noteworthy. While Generation Y (Millennials) tends to have higher internet usage, earlier studies suggest that Generation X engages more in online shopping due to their higher income levels and greater availability of free time [22].

Regarding educational background, the majority of Bedukmutu consumers held Master’s degrees, comprising 51 individuals or 49% of the total respondents. It is understandable, as many UMY employees were lecturers, and the minimum requirement to become a lecturer is a Master’s degree. The rest of the respondents held three different degrees: 19 (18.3%) had Doctorate degrees, 13 (12.5%) possessed Bachelor’s degrees, and the remaining 21 had either a Diploma or a high school education. Previous research indicates that the quality of education significantly and positively influences customer satisfaction [23]. Having higher education appears to boost satisfaction with online food

shopping, as consumers with higher education levels find it easier to use online platforms for purchasing food [24].

Concerning income, 52 respondents (50%) had a monthly income of IDR 5,000,000. The other 41 respondents (39.4%) earned between IDR 5,000,000 and 10,000,000, while eight respondents (7.7%) had incomes from IDR 10,000,000 to 15,000,000. Only three respondents (2.9%) earned above IDR 15,000,000 monthly. Income has become one of the determinant factors influencing consumer satisfaction with food products [25]. Previous research has emphasized that higher-income consumers tend to purchase food online through Business-to-Consumer (B2C) platforms, such as online marketplaces, compared to lower-income consumers [26]. The final demographic aspect is family size. This study disclosed that 45.2% of Bedukmutu consumers had zero to two dependents, the same proportion as those with three to four dependents. The remaining 9.6% had five or more dependents.

### 3.2 The relationship between consumer satisfaction and website quality, product, price, responsiveness, and service

To better understand consumer satisfaction with online food products on Bedukmutu, an additional analysis was performed to examine its relationship with various factors, including website quality, product quality, seller responsiveness, price, and service. Table 3 lists the findings from Spearman’s rank correlation analysis of these variables.

**Table 3.** Rank Spearman correlation

Variable	Coefficient of Correlation	Sig.	Category
Website quality	0.383	0.000	Moderate
Product quality	0.603	0.000	Strong
Responsiveness	0.542	0.000	Strong
Price	0.580	0.000	Strong
Service	0.630	0.000	Strong

Table 3 indicates that product quality, seller responsiveness, price, and service have strong and positive relationships with consumer satisfaction with food products on Bedukmutu. These variables heavily correlated with Bedukmutu consumer satisfaction, as they all depicted a substantial positive correlation. This correlation is considered significant with a p-value of 0.000. Responsiveness refers to how sellers provide service responses to customers, such as answering questions about products or addressing other inquiries from consumers [27]. A prompt and effective response could enhance consumer satisfaction and reduce consumer uncertainty about online shopping [28].

Additionally, a moderate positive correlation was depicted between website quality and consumer satisfaction. As website quality improves, consumer satisfaction tends to rise. The p-value of 0.000 indicates that this correlation is statistically significant. Although significant, it is less influential than the other factors. Previous studies have disclosed that website quality significantly increases the likelihood of conducting online shopping. The ease of accessing the store on online platforms encourages consumers to make purchases [29].

In summary, focusing on improving product quality, responsiveness, pricing, and service quality would significantly enhance consumer satisfaction with food products on Bedukmutu. Website quality also played a role but to a lesser extent than other factors.

### 3.3 Factors influencing consumer satisfaction with online food products

Table 4 highlights the Ordinal Logistic Regression (OLR) results examining factors affecting online food consumer satisfaction in the Bedukmutu marketplace, comparing two

models. The main variables website quality, product quality, responsiveness, price, and service show varying degrees of significance across the models. The regression analysis unveiled that product quality, price, and service were proven to be significant factors influencing online consumer satisfaction with food products on Bedukmutu. Higher satisfaction was associated with improvements in these areas, as indicated by the positive coefficients. However, website quality and responsiveness are not statistically significant in either model.

**Table 4.** Regression results of the factors affecting consumer satisfaction

Variable	Model 1	Model 2
Website quality	-0.241 (-0.90)	-0.121 (-0.42)
Product quality	1.206** (2.76)	1.083* (2.40)
Responsiveness	0.557 (1.51)	0.495 (1.26)
Price	1.000** (2.69)	1.091** (2.81)
Service	0.872* (2.04)	0.913* (2.01)
Age		-0.034* (-1.65)
Gender		0.115 (0.27)
Education		0.073 (1.00)
Income		-0.199 (-0.62)
Online food expenditure		0.000 (0.36)
Pseudo R Squared	0.1950	0.2067
LR chi2(4)	77.25	81.89
Prob > chi2	.0000	.0000
Number of obs	104	104

Note:\*\*\*, \*\*, and \* denote significance at the 1%, 5%, and 10%. Standard error are in parenthesis.

Product quality is a strong and significant predictor in both models, with coefficients of 1.206 (Model 1) and 1.083 (Model 2), indicating that higher product quality increases consumer satisfaction. This finding aligns with previous research, which found that product quality directly and simultaneously impacts consumer satisfaction [30,31]. A recent study also discovered that product quality has become the most significant factor in post-purchase consumer satisfaction with online purchases despite trends indicating consumer dissatisfaction with issues such as after-sales service and delivery [32].

Moreover, price is also significant in both models, with coefficients of 1.000 (Model 1) and 1.091 (Model 2), showing that favorable pricing positively affects satisfaction. It suggests that the better the pricing, reflected in consumers' perceptions of affordable prices and the appropriateness of prices for the products purchased, positively influences consumer satisfaction. This effect is statistically significant at the 1% level. Price emerged as a determinant factor of consumer satisfaction in both offline and online shopping. Furthermore, on online platforms, consumers could easily compare the prices of different sellers. Consumers who perceive the price of the product as commensurate with its quality would feel more satisfied with their shopping experience [33].

Finally, service quality has a significant positive effect in both models, with coefficients of 0.872 and 0.913, respectively. Therefore, better service would result in higher consumer satisfaction, and this effect is statistically significant at the 5% level. Service quality provides consumer happiness, leading to consumer loyalty and satisfaction [34].

Additionally, website quality had a negative coefficient, implying that an increase in website quality might slightly decrease consumer satisfaction. With a p-value of 0.676, this effect is not statistically significant. Despite prior research indicating that website quality has become a component of consumer satisfaction, this model did not allow the researchers to conclude that website quality significantly impacted satisfaction. The website is where consumers meet the retailer, making it a crucial factor in attracting and satisfying

consumers [35]. Similarly, responsiveness also exhibited a positive coefficient, but the p-value was only 0.132 in model 1 and 0.206 in model 2, signifying that it is not statistically significant. In other words, there might be a positive relationship between responsiveness and consumer satisfaction. Unfortunately, the evidence was not strong enough to confirm this effect.

In conclusion, improving product quality, pricing, and service could significantly enhance consumer satisfaction in the online food market. This study did not discover any significant effects of website quality and responsiveness despite their significance.

## 4 Conclusions

This research aims to identify the variables affecting online food consumer satisfaction consisting website quality, product quality, price, responsiveness, and service. The result concludes that product quality, price, and service positively and significantly affected consumer satisfaction with food products on Bedukmutu marketplace. In addition, correlation analysis unveiled that the variables of product quality, seller responsiveness, price, and service disclosed a strong and significant relationship with consumer satisfaction, while the variable of website quality had a relatively weak relationship. The result also showed that consumers of Bedukmutu food products were predominantly men living in rural areas and belonging to the Generation X cohort with a notable number of millennials. Most consumers hold master's degrees, earn less than IDR 10,000,000 monthly, and have between zero to two dependents.

Several limitations should be noted regarding this study. To begin with, the sample consisted only of employees from UMY, thereby not representing the broader consumer base. In addition, the focus on food products overlooked other product categories. Lastly, the analysis was restricted to a few variables, excluding other significant factors such as trust and payment flexibility. Moreover, the lack of geographical and temporal context has limited the generalizability and robustness of the findings. Hence, future research should include a more diverse demographic, cover a broader range of products, and incorporate additional variables to provide a comprehensive analysis of consumer satisfaction.

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