Research Article

Analysis of Factors Affecting Customer Revenue from Waste bank in Kerobokan Village, Badung Regency

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Abstract: Waste management issues are becoming a serious challenge due to population growth and increasing economic activity. In Kerobokan Village, waste bank are present as an effort for communitybased waste management as well as a means of increasing community revenue, although there are differences in the level of revenue between customers The purpose of this study is to examine the simultaneous and partial effects of age, education level, family size, occupation type, waste management knowledge, and working hours on customer revenue from waste bank in Kerobokan Village, Badung Regency. Primary data was used in this research. Using the proportional stratified random sampling technique, the sample of this study was waste bank customer in Kerobokan Village, Badung Regency, comprising 85 respondents. In this study, questionnaires and observation were the methods utilized to collect data. Multiple regression analysis was the data analysis method employed. The study's findings indicated that age, education level, family size, occupation type, waste management knowledge, and working hours simultaneously influenced the customer revenue from waste bank. Partially, education level, family size, occupation type, waste management knowledge, and working hours demonstrated a positive and significant impacy, while age showed a positive but not significant effect on customer revenue from waste bank in Kerobokan Village, Badung Regency.

Keywords: Waste Bank ; Revenue ; Social and Economic Factors ; Demographics Factors.

1. Introduction

Waste management has become an increasingly pressing issue worldwide, especially with the increasing world population. According to the "What a Waste 2.0" World Bank research from 2023, the amount of waste produced worldwide is currently over 2 billion tons, and it is expected to rise in tandem with rising public consumption, economic activity, and population expansion [1].

As the world's fourth most populous nation, Indonesia also faces significant waste management challenges. With a population of 279 million and an estimated population growth rate of 1.19 percent [2]. This rapid population growth not only has a positive impact in terms of workforce potential, but can also give rise to various serious challenges. According to Fasiri (2020) the rapid population growth in Indonesia can cause problems, including social, economic, and environmental problems if not anticipated properly. Careless disposal of waste is one of the reasons why human activity leads to environmental issues, when generated in large quantities, waste can have a negative impact on the environment.

Waste is an inevitable byproduct of human life, as nearly all human activities generate waste on a daily basis [4]. The Ministry of Environment and Forestry estimates that 40 million tons of trash will be produced in Indonesia in 2023. In Indonesia, waste production continues to increase every year, with an average increase in waste generation reaching 1 million tons each year. Based on data on waste management performance achievements in 2023, as much as 60.4 percent of the total waste in Indonesia has been managed properly, while the waste that has not been managed is 39.6 percent [5].

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In Figure 1 it is known that of the 40 million tons of waste produced in Indonesia, households are the largest source of waste, reaching 60.53 percent of the waste produced throughout 2023. The dominance of household waste contributions shows that waste management is still a major challenge in maintaining environmental cleanliness, especially in densely populated areas such as Indonesia. The high contribution of waste produced by households indicates that intensive efforts are needed to increase the capacity of integrated, efficient, and community-based waste management.

As one of the main tourist destinations in Indonesia, Bali Province also faces similar problems related to waste management. Based on data from the Bali Provincial Forestry and Environment Service in 2023, waste generation in Bali Province reached 1,229,234.65 tons per year, where this waste generation increased by 13.24 percent from the previous year. During the 2024 Bali International Airshow coordination conference, Luhut Binsar Pandjaitan, the Coordinating Minister for Maritime Affairs and Investment (Menkomarves), said that handling garbage issues in Bali is the most challenging task [6]. Bali Province, as a leading tourism area in Indonesia which is an attraction for domestic and international tourists, faces major challenges due to high tourism activities and increasing migration of immigrants. This condition has resulted in a significant increase in waste production in Bali Province.

_ /	Waste	Waste	Waste	Unmanaged
Regency/City	Generation	Reduction	Management	Waste
	(tons/year)	(tons/year)	(tons/year)	(tons/year)
Jembrana Regency	59,765.28	13,751.92	31,025.00	14,988.36
Tabanan Regency	84,922.73	1,286.30	51,100.00	32,536.43
Badung Regency	195,222.49	45,066.53	78,955.34	71,200.62
Gianyar Regency	196,698.50	18,864.07	169,725.00	8,109.43
Klungkung Regency	40,239.61	6,636.02	29,532.96	4,070.63
Bangli Regency	41,195.36	8,133.21	30,944.70	2,117.45
Karangasem Regency	102,643.48	7,911.41	22,162.80	72,569.27
Buleleng Regency	150,562.50	15,801.87	56,612.70	78,147.93
Denpasar City	357,984.70	58,546.77	286,561.31	12,876.62
Bali Province	1,229,234.65	175,998.10	756,619.81	296,616.74

Table 1. Waste Management Performance Achievements by Regency/City in Bali Province in 2023

Source: Bali Provincial Forestry and Environment Service, 2024

According to Table 1, Badung Regency generated 195,222.49 tons of waste annually in 2023, ranking among the regions in Bali Province with the largest waste volume, after Denpasar City and Gianyar Regency. Although efforts to reduce waste by 45,066.53 tons per year have been carried out in Badung Regency, in reality there are still 71,200.62 tons per year or around 36.5 percent of the total waste generation in Badung Regency that is not managed and is still a problem. The high volume of unmanaged waste shows that the waste management system in Badung Regency faces major challenges in terms of infrastructure, management effectiveness, and community participation. As a major tourist destination in Bali, Badung Regency faces additional pressure from waste generated by the tourism sector, which also complicates the waste management system.

As a legal framework for the regency's waste management implementation, the Badung Regency Government has implemented Badung Regency Regional Regulation Number 7 of 2013 concerning Waste Management in response to the waste problem. The regulation describes the responsibility of the Regional Government as the implementer of waste management which aims to change the paradigm of society to utilize waste as stated in Law Number 18 of 2008 concerning Waste Management. As part of this effort, the Badung Regency Government also held a waste bank program by involving the community in each environment/banjar in Badung Regency. This program aligns with the Regulation of the Minister of Environment and Forestry Number 14 of 2021 concerning Waste Management in Waste bank, which highlights the adoption of a circular economy and covers the role of waste banks as a platform for behavior change education. Through this program, it is expected that environmental and public health issues caused by waste can be addressed, while also transforming waste into a resource with economic value.

One of the village that has participated and made efforts to reduce waste generation in Badung Regency is Kerobokan Village. There are five waste bank in Kerobokan Village, namely Kancil Lestari Waste Bank, Resik Pertiwi Waste Bank, Mangu Srikandi Waste Bank, Bumi Lestari Waste Bank, and Ratna Lestari Waste Bank. According to the Kerobokan Village waste bank's management, the waste bank program has improved the socioeconomic standing of the community and the surrounding environment, as well as the health of the ecosystem.

According to the findings of field observations, the waste bank program's implementation in Kerobokan Village demonstrates that it has substantial economic value in addition to serving as an environmental management initiative as shown in Graph 1 below.



Graph 1. Revenue of the Kerobokan Village Waste Bank in 2018-2024 (Rupiah)

Source: Kerobokan Village Waste Bank Management, 2024

From Graph 1 above, it is evident that the waste bank revenue in Kerobokan Village shows a fluctuating trend during 2018-2024. In 2018, the total revenue was recorded at only IDR2,791,560, but continued to experience a consistent increase until it reached its peak in 2022 with a total revenue of IDR47,528,781. Although in 2023 the waste bank revenue in Kerobokan Village experienced a decline, in 2024 the waste bank revenue of Kerobokan Village increased again to IDR48,485,908, surpassing the highest revenue in 2022. This demonstrates that Kerobokan Village's waste bank program is not only an effective environmental management initiative but also offers a significant financial benefit to the community. This claim is consistent with research findings by Fikriyyah & Adiwibowo (2018) and Warlina et al. (2022), who found that the waste bank program increased revenue through the receipts that clients received from the waste bank.

The income obtained by customers from waste bank not only provides additional economic benefits for individuals who become customers, but also has a direct impact on the economy of the customer's family. According to research by Ruski (2014) and Paputungan (2023), the revenue obtained by customers from waste bank can be a source of additional income that helps families cover essential expenses like daily necessities and their children's school pocket money. These benefits have a major impact, especially on low-income families who depend on waste management to increase their income. In Kerobokan Village, income generated through waste savings is usually received every six months and is often used to

prepare for Hindu holidays. Therefore, the income obtained from waste bank shows that simple waste management can provide economic benefits for families, especially those with low incomes.

Table 2. Customer Revenue	from the Waste Bank	Program in Kero	bokan Village (Per Month)
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No.	Name of Waste Bank	Customer Revenue from the Waste Bank Program (In Rupiah)
1.	Kancil Lestari	5,000 - 135,000
2.	Resik Pertiwi	3,000 - 130,000
3.	Mangu Srikandi	2,000 - 70,000
4.	Bumi Lestari	1,000 - 88,000
5.	Ratna Lestari	2,000 - 142,000

Source: Kerobokan Village Waste Bank Management, 2024

According to data from the Kerobokan Village Waste Bank Management, there is a notable variation in the customer revenue from waste bank in Kerobokan Village. The range of income obtained by customers each month is from IDR1,000 to IDR142,000 per month, this reflects the existence of a fairly striking difference in the economic benefits obtained by customers from the waste bank program in Kerobokan Village. Some customers are able to obtain quite significant income, while other customers only receive little or no significant increase in income. This problem is important to note because it shows a difference in the economic benefits obtained by customers from the waste bank program. This difference can affect customer participation, especially customers with relatively low income. Therefore, an in-depth analysis is needed to identify the factors that cause this difference in income.

The revenue obtained by customers from waste bank can be influenced by various factors. According to Sekardadi & Sutrisna (2022), there are several factors that are estimated to influence customer income from waste bank, including education level, family size, and participation. Meanwhile, Widiana & Marhaeni (2018) stated that the income earned by waste bank customers is essentially influenced by various factors, including education level, perception of the benefits waste bank, and employment status. The higher the education level and the more positive the perception of the waste bank's benefits, the greater the income received. In addition, a person's occupation type can also determine the income obtained because it affects the involvement and flexibility of time available to take advantage of economic opportunities from waste bank. In line with that, according to Harahap et al. (2019) there are still other variables that can influence customer income from waste bank, including age, waste selling price, outflow of working hours, work experience and waste transportation radius.

Various prior research have proved the importance of waste bank in raising community income and lowering environmental consequences. However, the majority of research, including those done by Wulandari et al. (2017), Malik et al. (2018), Iftitah et al. (2018), Firmansyah et al. (2021), and Mudviyadi (2021) tend to only focus on the environmental aspects and operational management of waste bank without examining in depth the socio-economic and demographic factors that can influence customer revenue from waste bank. From the background of the problem and previous studies that have been described, the researcher is interested and seeks to fill this gap through this study. The purpose of this study is to examine the simultaneous and partial effects of age, education level, family size, occupation type, waste management knowledge, and working hours on customer revenue from waste bank in Kerobokan Village, Badung Regency.

2. Literature Review

A conceptual framework is a model that outlines the theory or concept to be studied or connects the variables involved in a study [23]. This study examines the factors which affect customer revenue from waste bank in Kerobokan Village, Badung Regency.

Age is one of the factors that can influence customer revenue from waste bank. According to Suprapti (2018) the older a person is at productive age, the greater the responsibility to themselves and their families. This encourages someone to work harder to earn income, but a person's income in old age can decrease because their physical ability to work has decreased. In accordance with this, Meidiana et al. (2021) found that the age variable has a positive and significant influences on the willingness to participate in the waste bank program in Surabaya City, these results highlight that productive age tends to increase participation which can support the income obtained from waste bank. However, Harahap et al. (2019) found that the age variable has a positive but not significant impact on the household income of waste bank customers in Medan City, this indicates that although increasing age can increase income, the age variable is not the main factor because its influence is not strong enough. The differences in the results of these studies emphasize the importance of understanding the contribution of the age variable to customer revenue from waste bank in Kerobokan Village, Badung Regency.

One of the factors that can affect a person's income is their education level, the more educated they are, the more knowledge they acquire [26]. According to the research findings of Widiana & Marhaeni (2018) indicate that the income of waste bank customers in Badung Regency, Bali Province, is positively and significantly impacted by the education level variable. Accordingly, the results of research by Sekardadi & Sutrisna (2022) demonstrate that the income of Mandiri Waste Bank (BSM) members in Punggul Village is positively and significantly impacted by the education level variable. The results of this positive and significant influence mean that the more educated waste bank customer are, the greater their knowledge about managing waste so that they have a greater opportunity to understand the economic value of waste and adopt more efficient waste management methods which will ultimately affect the income obtained.

Another factor that is thought to influence customer revenue from waste bank is the family size. According to Ghorbani et al. (2007) the amount of waste produced in a household is influenced by the family size living together in the same house. In line with this, the research findings by Harahap et al. (2019) showed that the household income of waste bank customers in Medan City, is positively and significantly impacted by the family size variable. Another study conducted by Sekardadi & Sutrisna (2022) stated that the income of Mandiri Waste Bank (BSM) members in Punggul Village is positively and significantly impacted by the family size variable. The results of this positive and significant influence indicate that the more family members there are, the more waste is produced and if waste is appropriately handled and stored in a waste bank, it will produce economic value and generate a bigger income for the waste bank customer.

According to Nofriza (2022) the occupation type is one of the factors that can affect a person's income, because each occupation type has a different income level. According to the research findings by Widiana & Marhaeni (2018) idicated that the occupation type variable had a positively and significantly impact on the income of waste bank customers in Badung Regency. Other research conducted by Meidiana et al. (2021) stated that the willingness to join in the Surabaya City waste bank program was positively and significantly impacted by the profession type variable. The results of this positive and significant influence have implications that a individual's occupation has an impact on how actively they participate in the waste bank program, which in turn has an impact on their income. A person with an informal sector occupation tends to get higher income from a waste bank compared to someone who works in the formal sector, because informal sector workers have easier access to waste sources and tend to have free time to sort waste so that the waste deposited into the waste bank is of better quality and has a higher economic value.

One of the primary factors influencing community involvement in waste banks is waste management knowledge, which will ultimately help maximize customer revenue through efficient waste management [25]. According to the research findings by Arifa et al. (2019) showed that the community participation in the waste bank program in Nijang Village, is positively and significantly impacted by the waste management variable. Other studies result by Auliani et al. (2023) indicated that the participation of housewives in the Diski Mandiri Waste Bank program in Deli Serdang Regency, is positively and significantly impacted by the waste management variable. This positive and significant results indicate that the broader the knowledge a person has, especially knowledge about waste management, the more active their participation in managing waste will be, which will have an impact on the income obtained.

Siahaan & Renol (2024) state that the one of the variables influencing an person's income is the amount of working hours, the more time devoted to work, the more income is obtained.

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In accordance with this, Harahap et al. (2019) found that the household income of waste bank customers in Medan City, is positively and significantly impacted by working hours variable. However, Puspaningrum (2023) indicate that the the income of Emak.id Waste Bank managers is unaffected by the working hours variable. The differences in the results of these studies emphasize the importance of understanding the contribution of the variable of the amount of working hours to customer income from waste bank in Kerobokan Village, Badung Regency.

3. Proposed Method

Associative quantitative research methods are used in this study design. Research that identifies cause-and-effect issues between independent and dependent variables is known as associative research. Quantitative research aims to analyze two or more variables which are carried out by analyzing age, education level, family size, occupation type, waste management knowledge, and working hours as independent variables and customer revenue from waste bank in Kerobokan Village, Badung Regency as dependent variables. Primary data was used in this investigation. Using the proportionate stratified random sampling approach, the study's sample consisted of 85 respondents who were waste bank customers in Kerobokan Village, Badung Regency. In this study, questionnaires and observation were the methods utilized to collect data. The data analysis technique used was multiple regression analysis. The effect between the independent and dependent variables is ascertained using this multiple linear regression analysis technique. The equation can be mathematically expressed in Equation 1 as follows.

 $\begin{aligned} re\widehat{venue} &= \alpha + \beta_1 age + \beta_2 age^2 + \beta_3 education \ level + \beta_4 family \ size + \\ \beta_5 occupation \ type + \beta_6 waste \ management \ knowledge + \\ \beta_7 working \ hours + e \end{aligned} \tag{1}$

Information:

Ŷ	= customer revenue from waste bank
α	= constant
$\beta_1 - \beta_7$	= regression coefficient of each variable
X_1	= age
$X_{1^{2}}$	= age in quadratic form
X_2	= education level
X_3	= family size
X_4	= dummy occupation type
	D = 0, if working in the formal sector
	D = 1, if working in the informal sector
X_5	= dummy waste management knowledge
	D = 0, if do't have waste management knowledge
	D = 1, if have waste management knowledge
X_6	= working hours
e	= error

4. Results and Discussion

4.1. Multiple Linear Regression Analysis Results

This study uses multiple linear regression analysis techniques for data processing. According to Sugiyono (2017:277), this technique is also used to predict the value of dependent variables using more than one independent variable.

		Unstanda Coeffic	urdized ients	Standardized Coefficients		
Μ	odel	В	Std. Error	Beta	t	Sig.
1	(Constant)	-108,762.65	41,662.53		-2.61	0.01
	Age	3,320.13	1,994.26	0.671	1.66	0.10
	Quadratic Age	-26.87	23.13	-0.472	-1.16	0.24
	Education Level	1,594.80	649.05	0.134	2.45	0.01
	Family Size	3,133.14	1,474.95	0.109	2.12	0.03
	Occupation Type	11,822.17	5,052.58	0.134	2.34	0.02
	Waste Management Knowledge	15,799.85	4,994.51	0.179	3.16	0.00
	Work Hours Outpouring	2,796.19	249.39	0.550	11.21	< 0.001

Table 3. Results of Multiple Linear Regression Analysis

Source: SPSS data processing results, 2025

Based on the results of multiple linear regression analysis in Table 3, the estimation model can be subtituted as follows.

revenue = -108,762.65 + 3,320.13 age - 26.87 age² + 1,594.80 education level + 3,133.14 family size + 11,822.17 occupation type + 15,799.85 waste management knowledge + 2,796.19 working hours + e

4.2. Results of Simultaneous Coefficient Significance Test (F Test)

The F test is used to test the significance of the influence of the variables of age, education level, family size, occupation type, waste management knowledge, and working hours simultaneously on the dependent variable, namely customer revenue from the waste bank. The following are the results of the simultaneous regression coefficient significance test (F test) which can be seen in Table 4.

Mo	odel	Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	140,761,037,287.02	7	20,108,719,612.43	64.43	< 0.001
	Residual	24,031,289,785.75	77	312,094,672.54		
	Total	164,792,327,072.77	84			
	0000 1	1 2025				

Table 4. Significance Test Results Coefficient In general Simultaneous (F Test)

Source: SPSS data processing results, 2025

Based on the results of the simultaneous regression coefficient significance test (F Test) that has been carried out and can be seen in Table 4. it shows that F_{count} 64.43 > F_{table} 2.22 or a significance value of less than 0.001 \leq 0.05, it can be concluded that H_0 is rejected and H_1 is accepted. This shows that age, education level, family size, occupation type, waste management knowledge, and working hours simultaneously affect customer revenue from waste bank in Kerobokan Village, Badung Regency.

4.3. Results of Partial Coefficient Significance Test (t-Test)

The t-test is used to determine the effect of independent variables, namely age, education level, family size, occupation type, waste management knowledge, and working hours partially on the dependent variable, namely customer revenue from the waste bank with the assumption that other independent variables are constant. The results of the partial regression coefficient significance test (t-test) can be seen in Table 5.

	Unstanda Coeffic	Unstandardized Coefficients			
Model	В	Std. Error	Beta	t	Sig.
1 (Constant)	-108,762.65	41,662.53		-2.61	0.01
Age	3,320.13	1,994.26	0.671	1.66	0.10
Quadratic Age	-26.87	23.13	-0.472	-1.16	0.24
Education Level	1,594.80	649.05	0.134	2.45	0.01
Family Size	3,133.14	1,474.95	0.109	2.12	0.03
Occupation Type	11,822.17	5,052.58	0.134	2.34	0.02
Waste Management Knowledge	15,799.85	4,994.51	0.179	3.16	0.00
Work Hours Outpouring	2,796.19	249.39	0.550	11.21	< 0.001

Tab	ole 5.	Significance	Test Results	Coefficient	In general	Partial	(t-test	I)
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Source: SPSS data processing results, 2025

Based on the test results that have been carried out and can be seen in Table 5, it shows that the value t_{count} 1,66 $\leq t_{table}$ 1.99 or a significance value of 0.10 > 0.05, it can be concluded that H₀ is accepted and H₁ is rejected. This shows that partially the age variable has a positive and insignificant effect on customer revenue from waste bank in Kerobokan Village, Badung Regency.

Based on the test results that have been carried out and can be seen in Table 5, it shows that the value of $t_{count} 2.45 > t_{table} 1.990$ or a significance value of $0.01 \le 0.05$, it can be concluded that H_0 is rejected and H_1 is accepted. This shows that partially the education level variable has a positive and significant effect on customer revenue from waste bank in Kerobokan Village, Badung Regency.

Based on the test results that have been carried out and can be seen in Table 5, it shows that the value of $t_{count} 2.12 > t_{table} 1.99$ or a significance value of $0.03 \le 0.05$, it can be concluded that H₀ is rejected and H₁ is accepted. This shows that partially the variable of the family size has a positive and significant effect on customer revenue from waste bank in Kerobokan Village, Badung Regency.

Based on the test results that have been carried out and can be seen in Table 5, it shows that the value of $t_{count} 2.34 > t_{table} 1.99$ or a significance value of $0.02 \le 0.05$, it can be concluded that H_0 is rejected and H_1 is accepted. This shows that partially the occupation type variable has a positive and significant effect on customer revenue from waste bank in Kerobokan Village, Badung Regency.

Based on the test results that have been carried out and can be seen in Table 5, it shows that the value of $t_{count} 3.16 > t_{table} 1.99$ or a significance value of $0.00 \le 0.05$, it can be concluded that H₀ is rejected and H₁ is accepted. This shows that partially the variable of waste management knowledge has a positive and significant effect on customer revenue from the waste bank in Kerobokan Village, Badung Regency.

Based on the test results that have been carried out and can be seen in Table 5, it shows that the value of t_{count} 11.21 > t_{table} 1.99 or a significance value of less than 0.001 \leq 0.05, it can be concluded that H₀ is rejected and H₁ is accepted. This shows that partially the variable of working hours has a positive and significant effect on customer revenue from waste bank in Kerobokan Village, Badung Regency.

4.4. Results of the Determination Coefficient Test (R²)

The determination test is conducted to determine and measure how much the dependent variable can be explained by the independent variable in a regression model. If the determination coefficient (R^2) value approaches 1, the better the regression model created. The results of the determination coefficient test (R^2) can be seen in Table 6.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.92	0.85	0.84	17,666.20

Table 6. Results of the Determination Coefficient Test (R²)

Source: SPSS data processing results, 2025

Based on the results of the determination coefficient test (R²) in Table 6, the Adjusted R Square value is 0.84, which shows that 84.1 percent of customer revenue from the waste bank is influenced by age, education level, family size, occupation type, waste management knowledge, and working hours, while the remaining 15.9 percent is influenced by other factors outside the regression model.

4.5. Simultaneous Influence of Age, Education Level, Family Size, Occupation Type, Waste Management Knowledge, and Working Hours on Customer Revenue from Waste Bank in Kerobokan Village, Badung Regency

The variables of age, education level, family size, occupation type, waste management knowledge, and working hours on customer revenue from waste bank in Kerobokan Village, Badung Regency produce a significance value of F-statistics of less than $0.001 \le 0.05$. Thus, the relationship between age, education level, family size, occupation type, waste management knowledge, and working hours simultaneously has been proven to have a significant effect on customer revenue from waste bank in Kerobokan Village, Badung Regency. In addition, the results of the determination coefficient test (R^2) also show that all independent variables have an effect of 84.1 percent on the dependent variable. It can be concluded that H_0 is rejected and H_1 is accepted. This shows that the variables of age, education level, family size, occupation type, waste management knowledge, and working hours simultaneously have an effect on customer revenue from waste bank in Kerobokan Village, Badung Regency.

The results of this study are in line with the results of the study by Sekardadi & Sutrisna (2022) which stated that the education level and the family size simultaneously affect the income of members of the Mandiri Waste Bank (BSM) in Punggul Village. This means that the higher the education level of waste bank customers, the better their ability to manage and understand the economic value of the waste deposited, thus having an impact on increasing the income obtained from the waste bank. In addition, the greater the family size, the greater the opportunities for household workers who can help collect and sort waste, which will affect the increase in income.

In line with that, research conducted by Widiana & Marhaeni (2018) also stated that education level, family size, occupation type, and waste management knowledge simultaneously affect the income of waste bank customers in Badung Regency, Bali Province. This means that customers who work in the informal sector have a greater opportunity to be involved in waste bank activities, because they have more flexible working hours. Likewise, customers who have better waste management knowledge will be able to sort waste that has high sales value, which will affect the income they receive.

4.6. Partial Influence of Age on Customer Revenue from Waste Bank in Kerobokan Village, Badung Regency

Based on the results of the analysis of the influence age on customer revenue from waste bank in Kerobokan Village, Badung Regency, a significance value of 0.10 was obtained with an Unstandardized Coefficients Beta of 3,320.13. A significance value of 0.10 > 0.05 indicates that H_0 is accepted and H_1 is rejected. This means that partially the age variable has a positive and insignificant effect on customer revenue from waste bank in Kerobokan Village, Badung Regency. The results of this study are supported by research conducted by Harahap et al. (2019) which states that the age variable has a positive but insignificant effect on household income of waste bank customers in Medan City, this indicates that although increasing age can increase revenue, the age variable is not the main factor because its influence is not strong enough.

Based on the explanation in the book by Wooldridge (2019:188) which explains the relationship between age variables and revenue is often nonlinear. Therefore, in the regression model of this study, an additional test was carried out by entering the age variable in quadratic form (X_1^2) so that the relationship pattern can be read properly. The quadratic age test can show whether the revenue of waste bank customers will increase at a certain age and then decrease after passing the peak productive age. Based on the results of the analysis of the effect of age in quadratic form (X_1^2) on customer revenue from waste bank, the Unstandardized Coefficients Beta value was obtained of -26.87 with a significance of 0.24 >0.05. This shows that although the direction of the relationship shows a negative tendency after passing the peak productive age, the relationship is not statistically significant. This means that there is no strong enough evidence to state that after passing a certain age, waste bank customer revenue will decrease by IDR26,87. Thus, in the context of this study, the effect of age on revenue is neither linear nor nonlinear significantly.

Based on field conditions, the income received by customers from waste bank is more influenced by knowledge factors regarding waste management and the amount of time spent collecting and sorting waste rather than age alone. Some young customers tend to be busy with their main occupation, while not all elderly customers actively participate in waste bank activities routinely due to declining physical condition with increasing age. Therefore, the age variable is not a dominant factor influencing the size of the income of waste bank customers in Kerobokan Village.

4.7. Partial Influence of Education Level on Customer Revenue from Waste Bank in Kerobokan Village, Badung Regency

Based on the results of the analysis of the influence of education level on customer revenue from waste bank in Kerobokan Village, Badung Regency, a significance value of 0.01 was obtained with an Unstandardized Coefficients Beta of 1,594.80. A significance value of $0.01 \leq 0.05$ indicates that H₀ is rejected and H₁ is accepted. This means that partially the education level variable has a positive and significant effect on customer revenue from waste bank in Kerobokan Village, Badung Regency . The Unstandardized Coefficients Beta value of 1,594.80 means that if waste bank customers increase their education by 1 year, it will increase their income from the waste bank by IDR1,594.80. This means that the education level affects the amount of income obtained by customers from waste bank.

The results of this study are supported by research conducted by Widiana & Marhaeni (2018) which states that the education level variable has a positive and significant effect on the income of waste bank customers in Badung Regency, Bali Province. This study is also in line with the results of research conducted by Sekardadi & Sutrisna (2022) which concluded that the higher the education level of waste bank customers, the greater the income that can be obtained because individuals with higher levels of education tend to have a better understanding of the economic value of waste and more effective waste management methods.

4.8. Partial Influence of Family Size on Customer Revenue from Waste bank in Kerobokan Village, Badung Regency

Based on the results of the analysis of the influence of the family size on customer revenue from waste bank in Kerobokan Village, Badung Regency, a significance value of 0.03 was obtained with an Unstandardized Coefficients Beta of 3,133.14. A significance value of $0.03 \leq 0.05$ indicates that H₀ is rejected and H₁ is accepted. This means that partially the variable family size has a positive and significant effect on customer revenue from waste bank in Kerobokan Village, Badung Regency. The Unstandardized Coefficients Beta value of 3,133.14 means that if the family size of waste bank customers increases by 1 person, it will increase the income from the waste bank by IDR3,133.14. This means that the family size affects the amount of income obtained by customers from waste bank.

The amount of waste produced in the households of waste bank customers in Kerobokan Village, Badung Regency is influenced by the family size living together in the same house, the more family members there are, the more contributions there are in sorting and collecting waste that has a selling value. The results of this study are in line with the results of research conducted by Harahap et al. (2019) which concluded that the more family members there are, the more waste is produced and if the waste is managed properly and saved in a waste bank, it will receive higher income from the waste bank.

4.9 Partial Influence of Occupation Type on Customer Revenue from Waste bank in Kerobokan Village, Badung Regency

Based on the results of the analysis of the influence of occupation type on customer revenue from waste bank in Kerobokan Village, Badung Regency, a significance value of 0.02 was obtained with an Unstandardized Coefficients Beta of 11,822.17. A significance value of $0.02 \le 0.05$ indicates that H₀ is rejected and H₁ is accepted. This means that partially the occupation type variable has a positive and significant effect on customer revenue from waste bank in Kerobokan Village, Badung Regency. The occupation type in this study uses a dummy variable, where the type of informal sector occupation = 1 and the type of formal sector occupation = 0. Based on the partial test results, it can be said that there is a difference between customers working in the informal sector and customers working in the formal sector regarding customer revenue from the waste bank. From the Unstandardized Coefficients Beta value of 11,822.17, it means that waste bank than waste bank customers working in the formal sector.

Differences in occupation types affect the amount of income received by waste bank customers in Kerobokan Village, Badung Regency. The results of this study are supported by research conducted by Widiana & Marhaeni (2018) which states that the occupation type variable has a positive and significant effect on the income of waste bank customers in Badung Regency. This study is also in line with the results of research conducted by Meidiana et al. (2021) which concluded that customers who work in the informal sector tend to get higher income from waste bank compared to customers who work in the formal sector, because informal sector workers have easier access to waste sources and tend to have free time to sort waste so that the waste deposited to the waste bank is of better quality and has a higher economic value.

4.10 Partial Influence of Waste Management Knowledge on Customer Revenue from Waste bank in Kerobokan Village, Badung Regency

Based on the results of the analysis of the influence of waste management knowledge on customer revenue from waste bank in Kerobokan Village, Badung Regency, a significance value of 0.00 was obtained with an Unstandardized Coefficients Beta of 15,799.85. A significance value of $0.00 \le 0.05$ indicates that H₀ is rejected and H₁ is accepted. This means that partially the variable of waste management knowledge has a positive and significant effect on customer revenue from waste bank in Kerobokan Village, Badung Regency. The waste management knowledge study uses a dummy variable, where customers have waste management knowledge = 1 and customers do't have waste management knowledge = 0. Based on the partial test results, it can be said that there is a difference between customers have waste management knowledge and customers do't have waste management knowledge regarding customer revenue from the waste bank. From the Unstandardized Coefficients Beta value of 15,799.85, it means that waste bank customers have waste management knowledge receive more income from their waste bank than waste bank customers do't have waste management knowledge.

Differences in waste management knowledge affect the amount of income received by waste bank customers in Kerobokan Village, Badung Regency, because the knowledge possessed by customers enables them to know the types of waste that have high selling value, sort waste properly, and better understand the economic opportunities available in the waste bank program. The results of this study are supported by research conducted by Arifa et al. (2019) and Auliani et al. (2023) which concluded that the broader the knowledge possessed by a person, especially knowledge about waste management, the more active their participation in managing waste, which will have an impact on the income obtained. Therefore, knowledge about waste management is a strategic factor that strengthens customers ability to increase the income obtained from waste bank.

4.11 The Influence of Working Hours on Customer Revenue from Waste bank in Kerobokan Village, Badung Regency

Based on the results of the analysis of the effect of working hours on customer revenue from waste bank in Kerobokan Village, Badung Regency, a significance value of less than 0.001 was obtained with an Unstandardized Coefficients Beta of 2,796.19. A significance value of less than $0.001 \leq 0.05$ indicates that H₀ is rejected and H₁ is accepted. This means that partially the variable of working hours has a positive and significant effect on customer revenue from waste bank in Kerobokan Village, Badung Regency. The Unstandardized Coefficients Beta value of 2,796.19 means that if waste bank customers increase their working hours by 1 hour, it will increase revenue from the waste bank by IDR2,796.19. This means that the working hours have an effect on the amount of revenue obtained by customers from waste bank.

The results of this study are also relevant to the Revenue Theory proposed by Williamson (2018), where the revenue theory in the context of consumer behavior explains that individual revenue is influenced by the allocation of time used for work and leisure. In the context of this study, the revenue obtained by customers from the waste bank depends on how much time is allocated to collect, sort, and deposit waste. The more time is devoted to working to collect and sort waste, the more sorted waste with high economic value is produced and ultimately increases the income obtained from the waste bank. Therefore, the amount of working hours is a strategic factor that determines the amount of income obtained from the waste bank.

5. Conclusions and Recommendation

The study's findings indicated that age, education level, family size, occupation type, waste management knowledge, and working hours simultaneously influenced the customer revenue from waste bank. Partially, education level, family size, occupation type, waste management knowledge, and working hours demonstrated a positive and significant impacy, while age showed a positive but not significant effect on customer revenue from waste bank in Kerobokan Village, Badung Regency.

Based on the research findings, waste management knowledge has the most dominant factor, therefore Government of Kerobokan Village need to enhance public knowledge about waste management through regular socialization and training programs. Furthermore, according to the coefficient of determination test, the variables of age, education level, family size, occupation type, waste management knowledge, and working hours can have a significant impact on customer revenue from waste bank in Kerobokan Village, Badung Regency by 84.1 percent. Other factors not included in the research model account for the remaining 15.9 percent. Therefore, it is advised that further researchers include additional variables such as gender, participation, waste selling price, and others that may influence customer revenue from waste bank.

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