# Solid Waste Management Practices among Junior High School Learners of Public Secondary Schools in Jolo

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*ABSTRACT*. This research was designed to determine the level regarding the waste management behaviors among junior students enrolled in public secondary schools educational institutions within Jolo, Sulu. It focused on four important areas of waste management: waste sorting, minimizing waste disposal, reuse, and recycling practices, and proper disposal of waste While many studies have discussed environmental awareness and waste management in schools, there is still limited information about how students in Jolo, Sulu actually practice these behaviors in their daily lives. Because of this, the study sought to better understand students' waste management practices and identify factors that may influence them. The research employed a descriptive-correlational design and involved 100 junior high school learners from selected public secondary schools. Data were gathered using an adapted and validated research questionnaire. To analyze the responses, the researcher applied statistical methods including frequency and statistical tools such as percentage frequency distribution, weighted average (mean), t-test, and analysis of variance (ANOVA) (Analysis of Variance), and the Pearson correlation analysis. This finding showed that most of the respondents were female and were primarily Grade 10 students. The study also revealed that many of their parents were high school graduates and belonged to low-income families, particularly those earning ₱1,500 and below per month. In terms related to students' practices in managing solid waste demonstrated a strong degree of participation in the proper separation, minimization, reuse, and recycling of waste, and correct Waste Disposal. The research results further revealed that no significant differences were found in students' waste management practices when categorized based on gender, parents' level of education and monthly family income. However, differences were observed according to grade level, especially in terms of waste segregation practices and Waste Management minimization, reuse and recycling practices. In addition, the research found strong positive relationships among the four dimensions of waste management, indicating that these practices are closely connected and influence one another. The study is expected to provide useful information for school administrators, teachers, and local government officials in improving and strengthening school-based environmental programs and solid waste management activities. It may also promote students to become more accountable for properly managing waste. Furthermore, the findings can serve as a foundation for future studies in this field who wish to develop intervention programs and other environmental initiatives that promote sustainability and environmental awareness among learners.

***Keywords:*** *Solid, Waste, Manegement, Practices, Learners*

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## 1. INTRODUCTION

Solid waste has become a major environmental concern faced by communities around the world today. The continuous increase in population, rapid urbanization, and changing lifestyles have greatly contributed due to the increasing volume of waste generated every day. Based on the World Bank (2018), the world generates more than Approximately 2.01 billion tonnes of municipal solid waste are generated each year, and this figure is projected to increase in the coming years, 3.40 billion tonnes by the year 2050 if proper action is not taken. Poor waste handling practices not just damage the environment but also create risks to public health and contribute to climate change through pollution and greenhouse gas emissions. Because of these growing concerns, the United Nations included proper waste management in the United Nations Sustainable Development Goals (SDGs), especially Sustainable Development Goal (SDG) 11: Sustainable Cities and Communities together with Sustainable Development Goal (SDG) 12: Responsible Consumption and Production. These goals highlight. The value of cutting down on waste through proper segregation, recycling, reuse, and responsible disposal. They also emphasize that education and community participation are important in developing environmentally responsible behavior (Chavez, 2020; Chavez, 2022; Chavez et al., 2023, 2024).

Within the Philippines, managing solid waste remains a major environmental concern. The country produces thousands of tons of waste every day, and a large amount of it is not properly managed. Improper disposal of garbage in streets, rivers, and coastal areas has become a common problem in many communities. To help address this issue, the the government implemented Republic Act No. 9003, commonly referred to as the Ecological Solid Waste Management Act, is a Philippine law focused on proper and responsible The Waste Management Act of 2000 outlines policies for proper handling and disposal of solid waste. This legislation encourages proper waste segregation, recycling, composting, and the use of proper waste disposal methods safe and engineered landfills while discouraging open dumping and open burning of waste Despite the existence of this law, many local government units still experience difficulties in fully putting effective waste management into practice programs due to limited resources, limited facilities and inadequate public services cooperation. As a result, environmental problems related to waste continue to affect many communities across the country (Chavez, Lamorinas, & Ceneciro, 2023; Chavez et al., 2024; Chavez & Del Prado, 2023).

In Jolo, Sulu, solid waste management remains visible difficulty in both public regions and residential communities. Factors such as increasing population, limited waste collection services, and improper disposal practices lead to the buildup of waste in different areas. These issues may affect not limited to environmental issues cleanliness but also the health and safety of the people living in the community. Schools play an important role in addressing these concerns because they help shape students' knowledge, attitudes, and behaviors regarding environmental responsibility. Through school activities and environmental education, students can learn the significance of practicing effective waste management in their daily lives. However, despite the important role of schools, there is still limited information about the actual waste management practices of junior high school students learners in public high educational institutions in Jolo, Sulu (Chavez et al., 2024).

Although several studies have already examined solid waste management practices within different parts in the Philippines, most of them focused on universities, urban communities, or adult populations. Very few studies have specifically explored the experiences and practices among junior high school students especially in the local setting of Jolo, Sulu. This lack of

localized research created a gap in understanding how students practice waste segregation, reduction, reuse, recycling, and proper disposal management of waste. It also remains unclear whether factors such as gender, grade level, and parents' educational attainment, and household monthly income influence students' waste management behaviors (Chavez et al., 2023; Chavez et al., 2024, Chavez, 2024).

To help address this gap, This study aimed to evaluate solid waste management practices within junior secondary educational institution learners in public high schools located in Jolo, Sulu. The study focused on four important areas of solid waste management waste waste segregation, minimization, reuse, recycling, and proper disposal. It also examined whether students' practices differed according to selected demographic factors and determined the relationship among the different dimensions of waste management practices (Chavez et al., 2024, 2025).

this Findings of this research are expected to provide useful information for school administrators, teachers, local government units, and other stakeholders in improving school-based environmental programs and waste management activities. The study may also help strengthen the implementation of environmental policies in schools and encourage students to become more responsible in managing waste. In addition, the results may serve as a reference for future studies conducting related studies or develop intervention programs that promote environmental awareness and sustainable practices among learners (Chavez et al., 2024; Chavez et al., 2025).

## 2. METHODS

### 2.1 Research Design

This study utilized a descriptive–correlational research designed to study waste management practices among lower secondary educational institution learners. The describing approach was employed to present and describe the respondents' demographic profile, as well as the extent to which they practice waste segregation and reduction, reuse, and recycling, along with proper waste management and disposal. On this other hand, this correlational aspect of the research aimed to identify possible relationships and differences among the variables. Specifically, it examined whether students' waste management practices varied according to demographic characteristics such as gender grade level, and parents' level of education, and household income. It also determined whether significant relationships existed among the different dimensions related to solid waste management practices. This quantitative the The selected research design was considered suitable because it enabled the researcher to gather measurable data and analyze the existing conditions without manipulating any variables. Through this approach, the study was able to provide a clearer understanding of the current waste management behaviors of the participants as well as the way the different factors and practices are connected with one another.

### 2.2 Participants of the Study

This research was conducted within selected community secondary educational institutions in Jolo, Sulu, namely at Hadji Butu School of Arts and Trade in Jolo, Sulu National secondary school at Sulu State College Laboratory High School, Jolo Agricultural educational institution, and Jolo School of Fisheries. These schools were chosen because they represent public secondary educational institutions in the municipality where junior high school learners are actively engaged in daily school activities, including Waste Management practices. The participants involved in this study were junior secondary students starting from Grades 7 to 10 during the

Academic Year 2025–2026. They were considered the most suitable participants because they directly experience and practice waste management within the school environment. Their participation provided relevant information regarding waste segregation, waste reduction, reuse a

**Respondents of the Study**

| SCHOOL | STUDENTS |
|---|---|
| Hadji Butu School of Arts and Trade | 20 |
| Jolo National High School | 20 |
| Sulu State College Laboratory High School | 20 |
| Jolo Agricultural School | 20 |
| Jolo School of Fisheries | 20 |
| Total | 100 |

## 2.3 Sampling Procedure

The study used purposive sampling in selecting the respondents. This sampling method allowed this researcher choose participants who were considered knowledgeable and directly involved in the solid waste of the school handling practices. It was found that appropriate for the research because the selected students could provide relevant and meaningful information related to the research objectives. In total 100 lower secondary school learners took part in the study, with 20 students selected from each of the five public secondary schools located in Jolo, Sulu. This distribution helped make sure that the data represented the experiences and practices of students from different schools who regularly participate in waste management activities within their school environment.

## 2.4 Research tool

The primary instrument used for data collection in this study was a structured survey questionnaire. The survey instrument was adapted from the study of Dela Peña, Mariacos, and Malit (2024), with permission and necessary modifications to make it more suitable for junior high school learners in Jolo, Sulu. The revisions were made to make sure that the questions were clearly understood, relevant, and suitable for the local context of the respondents. The survey questionnaire was composed two primary sections. The initial section collected data on the respondents' demographic profile, such as gender, grade level, and parents' educational level, and family income. The second section focused on measured the extent regarding the students' solid Waste Management Practices using a 5-point Likert scale ranging from 5 (strongly agree) to 1 (strongly disagree). The questionnaire focused on four major areas of Solid Waste Management (SWM) waste segregation, reduction, reuse, recycling, and disposal. Each item in the instrument was carefully organized and numbered to make it easier for the respondents to answer and for the researcher to encode and analyze the data accurately.

## 2.5 Data Collection Procedure

Data collection began after acquiring official approval from the administrators of the selected public secondary schools in Jolo, Sulu. Once approval was granted, the researcher coordinated with the assigned teachers to arrange a convenient schedule for the distribution of the survey questionnaires. Prior For the respondents answering the questionnaire, the researcher explained the aim regarding the purpose of the study, the steps included in participating, and the importance of giving honest responses. The confidentiality and privacy of the participants' answers were also emphasized to ensure that they felt comfortable participating in the study. After the orientation, the questionnaires were given to the respondents and enough time was given for them to complete the survey. Once accomplished, the questionnaires were immediately collected to ensure a high level of retrieval and completeness of responses.

### 2.6 Ethical Considerations

This research observed proper ethical standards to guarantee the safety, rights, and overall well-being of all participants. Before the conduct regarding the survey, the respondents Were clearly informed about the purpose of the study, the steps included, as well as the importance related to their involvement in the study. They were likewise assured that their participation was entirely voluntary and that they were free to decline or withdraw from the study at any time without any consequences. The researcher strictly maintained that respondents' privacy along with confidentiality by ensuring that no personal identifying information was revealed in the study. All responses gathered were handled with confidentiality and were utilized exclusively for scholarly and research-related purposes. The data gathered were safely kept and presented only in summarized form to protect the identity of the participants. Furthermore, the study was conducted in a manner that avoided any form of harm, pressure, or discomfort to the respondents. Ethical research practices and guidelines involving human participants were carefully followed throughout the entire research process.

## 3. RESULTS

**Quastion 2.** What is the extent of Solid Waste Management Practices Among Junior High School Learners of Public Secondary Schools in the context of: 2.1 Segregation; 2.2 Waste Reduction; 2.3 Reuse and Recycling, and 2.4 Waste Disposal?

**Table 2.1 Extent of Solid Waste Management Practices Among Junior High School Learners of Public Secondary Schools in the context of Segregation.**

| | Statements | Mean | S.D | Interpretation |
|---|---|---|---|---|
| **1** | I separate biodegradable (paper, banana peels, cardboard, and vegetables) and non-biodegradable (plastic toys, glass, steel, rubber) wastes at school | 3.86 | 1.181 | Highly Agree |
| **2** | I separate recyclable wastes (paper, cardboard, plastic bottles) from non-recyclable (food wastes, leaves, twigs) wastes at school. | 3.67 | 1.190 | Highly Agree |
| **3** | I separate non-harmful wastes from toxic and hazardous wastes such as pentel pens, laboratory chemicals, ink, cell batteries and others. | 3.70 | .882 | Highly Agree |

| | | | | |
|---|---|---|---|---|
| **4** | I mix all the garbage in one garbage container. | 3.31 | 1.300 | Moderately Agree |
| **5** | I segregate recyclable items for collection. | 3.74 | 1.169 | Highly Agree |
| **6** | I am reading the waste bin label before throwing garbage. | 3.64 | 1.159 | Highly Agree |
| **7** | I observe the proper waste segregation. | 3.57 | 1.174 | Highly Agree |
| **8** | I only practice proper segregation if someone remind me or ask me to do it. | 3.55 | 1.192 | Highly Agree |
| **9** | I practice proper waste segregation in school like the way we are practicing at home. | 3.81 | 1.203 | Highly Agree |
| **10** | I practice proper waste segregation to serve as a model for others and to influence | 3.90 | 1.049 | Highly Agree |
| | **Total Weighted Mean** | **3.6750** | **.81307** | **Highly Agree** |

*Legend:* (5) 4.50-5.00 = Very Highly Agree; (4) 3.50-4.49 = Highly Agree; (3) 2.50- 3.49 = Moderately Agree; (2) 1.50- 2.49 = Slightly Agree; (1) 1.00- 1.49 = Least Agree

Table 2.1 presents this findings revealed that lower secondary school learners in public settings secondary educational institutions in Jolo, Sulu generally demonstrated a high degree of waste segregation practices, as reflected by the overall weighted average, which is equal to 3.6750, iunderstood as "I Strongly agree." This indicates that the learners are generally aware of and actively practicing appropriate waste segregation both at school and at home. Most of the respondents agreed that they properly separate organic and non-organic waste wastes, distinguish recyclable and non-recyclable materials, and properly identify hazardous and non-hazardous waste. The students also reported that they read waste bin labels before disposing of garbage, practice proper segregation regularly, and encourage others by serving as positive examples. In addition, many respondents shared that they practice in school the same waste segregation habits they observe at home. However, the statement about mixing all types of garbage in one container received only a "Moderately Agree" rating, indicating that although proper segregation is commonly practiced, some students may still occasionally dispose of waste improperly. Overall, the results show that waste segregation practices of the respondents are generally positive and well-observed.

**Table 2.2 Extent of Solid Waste Management Practices Among Junior High School Learners of Public Secondary Schools in the context of Waste Reduction.**

| **Statements** | | **Mean** | **S.D** | **Interpretation** |
|---|---|---|---|---|
| **1** | I borrow, share, and/or rent things that are needed occasionally. | 3.56 | 1.113 | Highly Agree |
| **2** | I buy only what I need so that I will not end up throwing away extra food. | 3.53 | 1.193 | Highly Agree |
| **3** | I always bring packed lunch in reusable lunchbox. | 3.61 | 1.278 | Highly Agree |

| | | | | |
|---|---|---|---|---|
| **4** | I bring water in reusable water containers. | 3.57 | 1.249 | Highly Agree |
| **5** | I am cautious and responsible to every waste I produced. | 3.59 | 1.164 | Highly Agree |
| **6** | I bring containers for food and bought | 3.31 | 1.203 | Moderately Agree |
| **7** | I bring reusable bags and basket whenever I go to market. | 3.54 | 1.259 | Highly Agree |
| **8** | It is more comfortable for me to use available plastics from the vendor. | 3.59 | 1.129 | Highly Agree |
| **9** | It's awkward to bring container when buying cooked food for takeout | 3.42 | 1.191 | Moderately Agree |
| **10** | I practice zero-waste initiative to help reduce waste production | 3.48 | 1.141 | Moderately Agree |
| | **Total Weighted Mean** | **3.5200** | **.87247** | **Highly Agree** |

*Legend:* (5) 4.50-5.00 = Very Highly Agree; (4) 3.50-4.49 = Highly Agree; (3) 2.50- 3.49 = Moderately Agree; (2) 1.50- 2.49 = Slightly Agree; (1) 1.00- 1.49 = Least Agree

Table 2.2 presents the results showed that public junior high school learners secondary educational institutions in Jolo, Sulu generally demonstrated a high level of waste reduction practices, with an overall weighted average value of 3.5200 interpreted as "Strongly Agree." This suggests the respondents acknowledge the importance of reducing waste and are as well practicing different ways to minimize unnecessary waste production in their daily activities. Most of the students agreed that they practice responsible waste reduction behaviors such as borrowing or sharing items when needed, buying only enough food to avoid waste, bringing reusable lunchboxes and water containers, and using reusable bags or containers when going to the marketplace. The respondents also expressed awareness and responsibility regarding the waste they produce. These findings suggest that many students are making efforts to adopt more environmentally friendly habits. However, some practices received only a "Moderately Agree" rating, particularly bringing personal containers when buying food, practicing zero-waste initiatives, and overcoming the awkwardness of bringing containers for takeout purchases. This implies that while students generally practice waste reduction, there are still some behaviors that are not consistently observed by all respondents. Overall, the findings indicate that waste reduction practices among the learners are generally positive and evident in their everyday activities.

**Table 2.3 Extent of Solid Waste Management Practices Among Junior High School Learners of Public Secondary Schools in the context of Reuse and Recycling**

| **Statements** | | **Mean** | **S.D** | **Interpretation** |
|---|---|---|---|---|
| **1** | I convert or redesign waste materials into new product. | 3.60 | 1.295 | Highly Agree |
| **2** | I make decors out of plastic wrappers and other colorful waste materials | 3.62 | 1.126 | Highly Agree |
| **3** | I ignore the importance of recycling | 3.54 | 1.184 | Highly Agree |

| | | | | |
|---|---|---|---|---|
| **4** | I initiate generating income out of waste materials | 3.43 | 1.166 | Moderately Agree |
| **5** | I re-use plastic bottle container as long as it is still reusable | 3.55 | 1.114 | Highly Agree |
| **6** | I reuse my old materials than buying a new one | 3.59 | 1.065 | Highly Agree |
| **7** | I keep those unfilled papers and use it as scratch. | 3.60 | 1.146 | Highly Agree |
| **8** | I reuse grocery bags. | 3.74 | 1.097 | Highly Agree |
| **9** | I reuse scrap paper into memo pads. | 3.58 | 1.056 | Highly Agree |
| **10** | I reuse washable food containers. | 3.52 | 1.123 | Highly Agree |
| | **Total Weighted Mean** | **3.5770** | **.81114** | **Highly Agree** |

*Legend:* (5) 4.50-5.00 = Very Highly Agree; (4) 3.50-4.49 = Highly Agree; (3) 2.50- 3.49 = Moderately Agree; (2) 1.50- 2.49 = Slightly Agree; (1) 1.00- 1.49 = Least Agree

Table 2.3 The findings showed that lower secondary school learners in public settings secondary educational institutions in Jolo, Sulu generally showed a high level of reuse and recycling practices, as reflected by the overall a weighted average value of 3.5770, understood as "Strongly Agree." This indicates that the respondents are actively practicing different ways of reusing and recycling materials in their daily lives. Most of the students agreed that they reuse plastic bottles, grocery bags, washable food containers, and old school materials instead of immediately buying new ones. Many respondents also shared that they use unused paper as scratch paper, turn scrap paper into memo pads, and create decorations from plastic wrappers and other recyclable materials. These practices show that students are becoming more resourceful and environmentally aware in managing waste materials. However, the item related to generating income from waste materials received only a "Moderately Agree" rating. This suggests that while students commonly practice reuse and recycling, fewer of them engage in activities that transform waste into livelihood or income-generating opportunities. Overall, the results indicate that reuse and recycling practices are generally well-observed among the respondents and form part of their everyday environmental practices.

**Question 3**. Is there a significant difference in the extent of Solid waste management practices among Junior High School Learners of Public Secondary Schools when data are grouped according to: 3.1 gender; 3.2 Grade level; 3.3 Parents' highest educational attainment; and parents' average monthly income

**Table 3.1 Difference in the extent of Solid Waste Management Practices Among Junior High School Learners of Public Secondary Schools when data are grouped according to gender**

| Variables | Grouping | Mean | S.D | Mean Difference | t | Sig. | Description |
|---|---|---|---|---|---|---|---|
| **Segregation** | Male | 3.800 | .7855 | .21552 | 1.313 | .192 | Not Significant |
| | Female | 3.584 | .8273 | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Waste Reduction** | Male | 3.602 | .7986 | .14204 | .802 | .424 | Not Significant |
| | Female | 3.460 | .9245 | | | | |
| **Reuse and Recycling** | Male | 3.717 | .7554 | .24080 | 1.474 | .144 | Not Significant |
| | Female | 3.476 | .8411 | | | | |
| **Waste Disposal** | Male | 3.588 | .7096 | .07947 | .520 | .604 | Not Significant |
| | Female | 3.509 | .7855 | | | | |

*Note.* * Significant at alpha 0.05

Table 3.1 shows the findings showed that no significant difference was found in the level of solid waste management practices among junior high school students learners in public secondary schools located in Jolo, Sulu when categorized by gender. The computed t-values and probability values showed that both male and female respondents shared similar perceptions and practices in the areas of waste segregation, reduction, reuse, recycling, and disposal. This result indicates that gender does not significantly influence how students practice solid waste management. Both male and female learners demonstrated comparable degrees of awareness and participation in proper waste management activities. Hence, the hypothesis stating that no significant difference exists in solid waste management practices when respondents are grouped according to gender was accepted.

**Table 3.2 Difference in the extent of Solid Waste Management Practices Among Junior High School Learners of Public Secondary Schools when data are grouped according to grade level**

| Sources of Variation | | Sum of squares | df | Mean Square | F | Sig. | Description |
|---|---|---|---|---|---|---|---|
| **Segregation** | Between Groups | 7.928 | 3 | 2.643 | 4.41* | .006 | Significant |
| | Within Groups | 57.52 | 96 | .599 | | | |
| | Total | 65.45 | 99 | | | | |
| **Waste Reduction** | Between Groups | 10.245 | 3 | 3.415 | 5.04* | .003 | Significant |
| | Within Groups | 65.115 | 96 | .678 | | | |
| | Total | 75.360 | 99 | | | | |
| **Reuse and Recycling** | Between Groups | 9.892 | 3 | 3.297 | 5.73* | .001 | Significant |
| | Within Groups | 55.245 | 96 | .575 | | | |
| | Total | 65.137 | 99 | | | | |
| **Waste Disposal** | Between Groups | 4.231 | 3 | 1.410 | 2.617 | .055 | Not Significant |
| | Within Groups | 51.732 | 96 | .539 | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Total | 55.964 | 99 | | | | |

*Note.* * Significant at alpha 0.05

Table 3.2 shows the findings indicated that there were notable differences in the extent of waste management practices among junior high school students learners in public secondary schools within Jolo, Sulu when classified according to grade level. Significant differences were found in the aspects of segregation, waste reduction, reuse and recycling, indicating that students from different grade levels vary in how they practice these aspects of waste handling. However, no significant difference was observed in waste disposal practices, which suggests that students across grade levels share similar behaviors within this area. The findings imply that grade level plays a key role in influencing certain Solid Waste Management (SWM) practices among students, particularly those related to segregation, reducing waste, and recycling or reusing materials. As students progress to higher grade levels, their awareness and practices regarding these environmental behaviors may also change or improve. Therefore, the hypothesis asserting no significant difference in solid waste management practices when respondents are grouped according to gender grade level was rejected.

**Table 3.3 Difference in the extent of Solid Waste Management Practices Among Junior High School Learners of Public Secondary Schools when data are grouped according to parents' highest educational attainment**

| Sources of Variation | | Sum of squares | df | Mean Square | F | Sig. | Description |
|---|---|---|---|---|---|---|---|
| **Segregation** | Between Groups | 3.805 | 5 | .761 | 1.161 | .334 | Not Significant |
| | Within Groups | 61.64 | 94 | .656 | | | |
| | Total | 65.45 | 99 | | | | |
| **Waste Reduction** | Between Groups | 5.341 | 5 | 1.068 | 1.434 | .219 | Not Significant |
| | Within Groups | 70.019 | 94 | .745 | | | |
| | Total | 75.360 | 99 | | | | |
| **Reuse and Recycling** | Between Groups | 4.148 | 5 | .830 | 1.279 | .280 | Not Significant |
| | Within Groups | 60.989 | 94 | .649 | | | |
| | Total | 65.137 | 99 | | | | |
| **Waste Disposal** | Between Groups | 1.990 | 5 | .398 | .693 | .630 | Not Significant |
| | Within Groups | 53.974 | 94 | .574 | | | |
| | Total | 55.964 | 99 | | | | |

*Note.* * Significant at alpha 0.05

Table 3.3 shows the findings showed that no significant difference was found in the level of solid waste management practices among junior high school student learners in public settings secondary educational institutions in Jolo, Sulu when grouped according to their parents highest

educational attainment. The results showed the computed F-statistics and probability values of all indicators waste segregation, reduction, reuse, recycling, and disposal were not significant at the 0.05 level. This indicates that students tend to demonstrate similar levels of waste management practices regardless of whether their parents reached elementary, secondary, or college education. It suggests that parents' educational background does not strongly influence how students practice solid waste management in school and at home. Overall, the results indicate that parental educational attainment does not have a significant impact on students environmental practices in this area. Therefore, the hypothesis asserting no significant difference in solid waste management practices when grouped according to parents' highest educational attainment was accepted.

**Table 3.4 Difference in the extent of Solid Waste Management Practices Among Junior High School Learners of Public Secondary Schools when data are grouped according to parents' average monthly income**

| Sources of Variation | | Sum of squares | df | Mean Square | F | Sig. | Description |
|---|---|---|---|---|---|---|---|
| **Segregation** | Between Groups | 1.431 | 3 | .477 | .715 | .545 | Not Significant |
| | Within Groups | 64.02 | 96 | .667 | | | |
| | Total | 65.45 | 99 | | | | |
| **Waste Reduction** | Between Groups | 1.655 | 3 | .552 | .718 | .543 | Not Significant |
| | Within Groups | 73.705 | 96 | .768 | | | |
| | Total | 75.360 | 99 | | | | |
| **Reuse and Recycling** | Between Groups | .329 | 3 | .110 | .162 | .921 | Not Significant |
| | Within Groups | 64.808 | 96 | .675 | | | |
| | Total | 65.137 | 99 | | | | |
| **Waste Disposal** | Between Groups | .407 | 3 | .136 | .234 | .872 | Not Significant |
| | Within Groups | 55.557 | 96 | .579 | | | |
| | Total | 55.964 | 99 | | | | |

*Note.* * Significant at alpha 0.05

Table 3.4 shows the findings showed that no statistically significant difference existed in the level of solid waste management practices among junior high school student learners in public setting secondary educational institutions in Jolo, Sulu when grouped ased based on their parents' average monthly income. The data show that computed F-statistics and probability values of all indicators waste segregation, reduction, reuse, recycling, and disposal were not statistically significant at the 0.05 level. This indicates that students demonstrate similar levels of solid waste management practices regardless of whether their families have higher or lower monthly income. In other words, economic status does not appear to strongly influence how students practice appropriate waste management at school and at home. Overall, the results suggest that parents' income level does not significantly affect students' environmental practices in terms of solid waste

management. Therefore, the hypothesis stating that no statistically notable difference exists in the extent of solid waste management practices when grouped according to parents' average monthly income was accepted.

## 4. DISCUSSION

The study shows that junior high school learners in Jolo, Sulu generally exhibit a high level of solid waste management practices in all areas including waste segregation and reduction, reuse, recycling as well as proper disposal. This suggests that students are conscious of environmental responsibilities and are able to apply them in their daily school and home activities. Results also reveal that gender, parents' educational attainment, and family income do not notably affect students' waste management activities, meaning learners demonstrate similar behaviors regardless of background. However, grade level does make a difference, with higher-grade students showing better waste segregation practices and waste waste reduction, reuse, and waste recycling. In addition, the research found that all waste management practices are strongly connected. Students who practice one aspect of waste management are also likely to practice the others, showing that these behaviors work together as part of a consistent environmental habit. Overall, the findings suggest that students' environmental practices are more influenced by their school experience and grade level than by their demographic background.

## 5. CONCLUSION

The study found that most of the respondents are Grade 10 female students whose parents generally have a high school level of education and come from low-income households. This suggests that the participants share fairly similar backgrounds, which may help explain the similarities in their responses. Overall, the students already show a high degree of waste management strategies with respect to waste segregation and the reduction of waste, reuse, recycling, and proper waste disposal handling This indicates that they are generally aware of environmental responsibilities and are able to apply them in their daily school and home routines, although there are still a few areas where consistency can be improved. The results also show that gender, parents' educational attainment, and family income do not have a significant effect on students' waste management practices. However, grade level does make a difference, with higher-grade students tending to show better practices, likely because of increased learning exposure and experience as they progress in school. Finally, the study highlights that all areas of waste management are closely connected. When students improve in one practice, such as segregation, it often goes along with improvements in other areas like recycling and proper disposal, showing that these behaviors naturally work together as part of a single system.

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