

Property Inventory and Disposal Management of Western Philippines University Aborlan, Palawan

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ABSTRACT

This study examined the property inventory and disposal management of Western Philippines University. Specifically, the study aimed to determine the respondent demographic profile and identify the level of awareness of the respondents in terms of inventory and disposal management. Determine the problems encountered by the respondents. Identify which of the demographic profile of respondent have significant relationship with inventory awareness and also identify which of the demographic profile of the respondent have significant relationship with disposal awareness. A descriptive–correlational research design was employed, involving 180 respondents selected through simple random sampling. Data were collected using a structured questionnaire and analyzed using frequency, percentage, mean, and correlational analysis. Findings revealed that respondents were mostly mid–career, highly educated, and permanent employees of WPU. The respondents demonstrated high awareness of inventory and disposal management practices. However, several operational problems were identified, including untrained personnel handling equipment, improper maintenance, and inadequate storage practices. Correlation analysis indicated that technical training, job position, and sex had significant relationships with inventory awareness, while technical training alone showed a significant relationship with disposal awareness. Strengthening technical training programs, implementing integrated inventory management systems, adopting demand forecasting techniques, and enhancing monitoring and auditing mechanisms are recommended to further improve inventory and disposal management.

Keywords: accountability, asset tagging, inventory custodian slip, property acknowledgment receipt

INTRODUCTION

Supply and property management is an essential component of organizational efficiency, ensuring the proper acquisition, utilization, maintenance, and disposal of resources (Department of Environment and Natural Resources 2018). Effective management of supplies and assets contributes to operational efficiency, cost reduction, and sustainability. Many institutions have adopted digital inventory systems, automated tracking, and integrated management platforms to enhance transparency and accountability (Internal Organization for Standardization 2015). Studies have shown that well–managed inventory systems contribute to operational efficiency, transparency, and accountability through improved monitoring and control of organizational assets (Jonsson and Mattsson 2008; Rajeev 2008).

Moreover, global trends in supply and property management emphasize sustainable procurement, lifecycle asset management, and digital inventory systems to ensure the efficient and responsible utilization of resources throughout their useful life. Educational institutions are increasingly recognizing the need for robust inventory systems to manage resources, optimize operational costs, and ensure that facilities and learning materials are available, maintained, and properly accounted for (Gonçalves 2020; Ballester–Alvarez 2019). Proper supply and property management directly supports Sustainable Development Goal 4 (SDG 4) of the United Nations ensuring "inclusive and equitable quality education" by helping institutions allocate and maximize resources efficiently (UNESCO, 2017). Schools and universities worldwide use inventory systems not only for asset management but also to uphold transparency, accountability, and sustainability, crucial principles in public sector governance. Organizations are increasingly adopting integrated management systems that promote transparency, accountability and sustainability in resource management (Büyükoğuzkan and Göçer 2018; Hardgrave et al. 2011). Studies have further shown that ineffective inventory and asset management practices result in excess carrying costs, stock shortages, resource wastage, financial losses, and operational disruptions, underscoring the importance of robust and standardized management systems (Jonsson and Mattsson 2008; Rajeev 2008).

In the Philippines, supply and property management in government institutions is guided by Republic Act No. 9184 and Presidential Decree No. 1445 to ensure accountability and transparency in the use of public resources. The importance of supply and property management is further emphasized by national goals for development and governance. The government's vision, outlined in AmBisyon Natin 2040, highlights the aspiration for a "matatag, maginhawa, at panatag na buhay" (stable, comfortable, and secure life) for all Filipinos (National Economic and Development Authority, 2016). Efficient management of institutional resources, such as through sound inventory practices, supports this vision by ensuring that public services including education

are effectively delivered. Furthermore, the Philippine Development Plan 2023– 2028 calls for modernization and digital transformation in public sector operations, specifically encouraging government agencies, including educational institutions, to adopt digital systems that promote efficiency, transparency, and accountability (NEDA, 2023). According to the study of Gumilao (2024) which explored the shift from manual to automated inventory systems for the Department of Education Regional Office IX. The study found that computerized systems enabled accurate, real– time data processing, streamlined asset tracking, and improved decision–making efficiency, directly enhancing resource allocation and operational efficiency and also According to Odasco & Saong (2023) investigated the University of Baguio’s Requisition, Procurement, and Inventory System (UBRPIS). Their findings suggest that an effective inventory setup enables better understanding of shortages or surpluses, thus promoting more responsive resource utilization and supporting stakeholder needs. Efficient inventory–taking remains critical in ensuring the integrity of property custodianship and accurate accounting and reporting (Republic of the Philippines 1978). In the public sector, property management serve as important mechanisms for ensuring accountability, transparency, and efficient utilization of government resources. Effective inventory practices support accurate reporting, asset safeguarding, and compliance with national regulations governing public property management (Parilla et al. 2022).

Locally, institutions like Sorsogon State University (SorSU) are tasked with optimizing their supply and property management system to support these national strategies and institutional goals. Educational institutions that fail to manage their assets efficiently face risk such as wastage, loss of public funds and service delivery bottlenecks. Digital supply and property management systems are critical tools not only for internal management but also for enhancing institutional credibility and performance. Moreover, the ease of doing business and efficient Government Service Delivery Act of 2018 (Republic Act 11032) mandates streamlined processes and efficient public service delivery. Under this law, educational institutions are encouraged to automate operations including supply and property management to ensure faster transactions, fewer delays, and improved service satisfaction. Implementing a wellorganized supply and property management system aligns with the Acts objectives by reducing administrative burdens, preventing inefficiencies and promoting data–driven decision making.

At Western Philippines University (WPU), the Supply and Property Management Office (SPMO) is responsible for the procurement, storage, distribution, and safeguarding of supplies, materials, and equipment across campuses and offices. The office also supports institutional accountability through inventory–taking procedures conducted with representatives from the Accounting Office and Internal Audit Office (Republic of the Philippines 1978). Additionally, similar offices in educational and public institutions are responsible for ensuring effective stewardship of government assets through proper procurement, storage, distribution, and inventory monitoring. Effective property management systems contribute to improved accountability and institutional performance (Roque and De Guzman 2020).

The university has adopted quality management standards through ISO 9001:2015 certification and implemented a Supply and Asset Management System to improve record–keeping, monitoring, and operational efficiency. Despite these initiatives, there remains a need to assess the effectiveness of current supply and property management practices and identify areas for improvement (Internal Organization for Standardization 2015). Previous studies have demonstrated that the adoption of quality management systems and digital inventory technologies enhances inventory accuracy, monitoring efficiency, and decision–making processes (Legaspi 2022; Hardgrave et al. 2011).

Despite advancements in inventory systems and quality management initiatives, studies continue to report challenges related to inventory accuracy, asset tracking, record reconciliation, and disposal management in public institutions (Jonsson and Mattsson 2008; Almanzor 2025). Regular assessment of supply and property management practices is therefore necessary to identify operational gaps and develop strategies that enhance accountability, efficiency, and sustainability in resource utilization.

Specifically, the study aimed to determine the respondent demographic profile and identify the level of awareness of the respondents in terms of inventory and disposal management. Determine the problems encountered by the respondents. Identify which of the demographic profile of respondent have significant relationship with inventory awareness and also Identify which of the demographic profile of the respondent have significant relationship with disposal awareness.

METHODS

Research Design

This study employed a descriptive–correlational research design, which was appropriate as it involves a fact–finding process that identifies research questions best answered through a survey. It is descriptive because its primary concern is to determine the level of inventory and disposal awareness among WPU personnel. At the

same time, it is correlational since it seeks to establish whether two or more variables are related, and if so, in what manner. Specifically, the study aims to examine the relationship between inventory level and disposal awareness, and whether these variables are associated when grouped according to age, educational attainment, years of service, relevant training attended, and monthly salary.

Respondents of the Study

The respondents of this study were regular employees of Western Philippines University (WPU) who were holders of Property Acknowledgment Receipts (PAR) and Inventory Custodian Slips (ICS). Out of approximately 380 employees, 180 respondents participated in the study through simple random sampling.

To determine the minimum sample size, Slovin's Formula was applied, as recommended in *Elementary Statistics: A Modern Approach* by Altares et al. (2003), published by Rex Book Store in Manila, Philippines. This text is widely used in Philippine academic research as a reference for basic statistical methods, including Slovin's formula for sample size determination. Based on the formula, the target number of respondents was 194. However, only 180 WPU regular employees were able to respond, which still represents a sufficient proportion of the population for meaningful statistical analysis.

Locale of the Study

The study was conducted at the Western Philippines University in Aborlan, Palawan (Figure 2) covering the WPU Compound. Western Philippines University is a state higher education institution. The university began as the Aborlan Farm settlement for the Tagbanuas (an indigenous cultural community of Palawan.) in 1910.

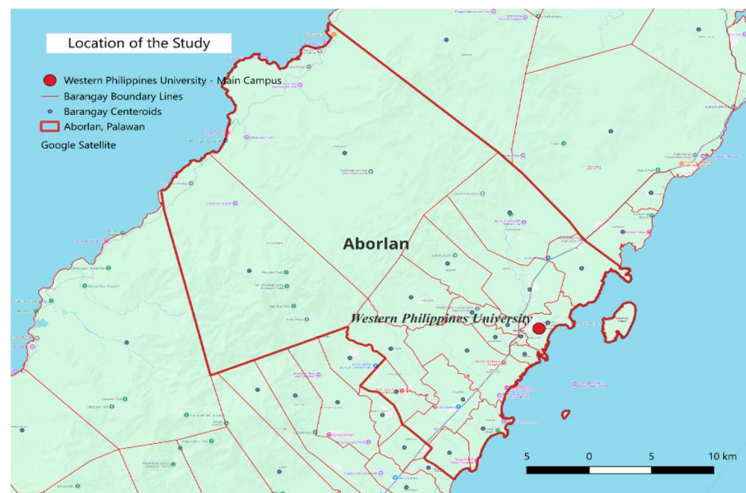


Figure 2. A map of Aborlan, Palawan, showing the study locale.

Research Instrument

A survey questionnaire was used in data gathering. The instrument consisted of four parts: demographic profile, level of inventory awareness, level of disposal awareness, and problems encountered in inventory and disposal management (Table 1).

Table 1. Rating parameter for the level of awareness.

Scale	Range Interval	Verbal Interpretation
5	4.51 – 5.00	Very Highly Aware (VHA)
4	3.51 – 4.50	Highly Aware (HA)
3	2.51 – 3.50	Moderately Aware (MA)
2	1.51 – 2.50	Fairly Aware (FA)
1	1.01 – 1.50	Low Awareness (LA)

Data Collection Procedure

The researcher made a formal approval to conduct the study through a formal communication addressed to SUC President of Western Philippines University following the approval of the request, the researcher proceeded to obtain consent from the respective regular employees from the staff of offices and faculty of the colleges. The survey questionnaires were distributed to respondents through Google Form links and QR codes, while others were collected manually. Respondents were provided with sufficient time to answer, review, and complete the questionnaires to ensure accuracy and reliability of responses.

Data Analysis

The gathered data were analyzed using frequency counts, percentages, weighted mean, and correlation analysis. Frequency counts and percentages were employed to describe the distribution of responses and demographic characteristics of the participants. Weighted mean was used to determine the overall level of inventory and disposal awareness among WPU personnel. Finally, correlation analysis was applied to examine the relationship between inventory level and disposal awareness, as well as to test whether these variables were significantly associated when grouped according to age, educational attainment, years of service, relevant training attended, and monthly salary.

RESULTS**Demographic Profile of the Respondents**

The findings revealed that most respondents belonged to the 41–46 age bracket (28.89%), followed by respondents aged 29–34 (18.89%). Most respondents were married (72.22%) and female (56.11%). In terms of educational attainment, most respondents held postgraduate degrees (66.11%), followed by college graduates (30.56%). Faculty members comprised the largest group of respondents (68.89%), followed by staff (27.78%) and administrators (3.33%). Most respondents had served for 6–10 years (23.89%), while the majority earned 50,000 pesos and below (75.00%). Regarding training, most respondents had managerial and technical training (Table 2).

Table 2. Demographic Profile of the Respondents.

Profile		F (n=180)	%
Age			
	59–64	12	6.67
	53–58	27	15.00
	47–52	25	13.89
	41–46	52	28.89
	35–40	23	12.78
	29–34	34	18.89
	23–28	7	3.89
Civil Status			0.00
	Single	36	20.00
	Married	130	72.22
	Widow/Widower	11	6.11
	Separated	1	0.56
	Cohabiting	2	1.11
Sex			0.00
	Male	79	43.89
	Female	101	56.11
Educational Attainment			0.00
	High School Level	1	0.56
	College Level	4	2.22
	College Graduate	55	30.56
	Post-Graduate	119	66.11
	Others	1	0.56
Job Position			0.00
	Faculty	124	68.89
	Staff	50	27.78
	Administrator	6	3.33
Number of years in service			0.00
	1 to 5 years	24	13.33
	6 to 10 years	43	23.89
	11 to 15 years	32	17.78
	16 to 20 years	26	14.44
	21 to 25 years	17	9.44
	26 to 30 years	5	2.78
	31 to 35 years	16	8.89
	36 to 40 years	13	7.22
	41 years and above	4	2.22
Monthly Salary			0.00
	50,000 and below	135	75.00
	60,000 – 70,000	10	5.56
	71,000 – 80,000	7	3.89

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	81,000 – 90,000	15	8.33
	91,000 – 100,000	6	3.33
	100,000 and above	7	3.89
Relevant Trainings			0.00
Managerial	1	159	88.33
	2	21	11.67
Technical	1	50	27.78
	2	130	72.22

Level of Inventory Awareness

The findings indicate that respondents demonstrated a high level of inventory awareness, with an overall weighted mean of 3.74 interpreted as “Highly Aware.” The highest-rated indicator was the visual inspection of materials for signs of damage, destruction, expiration, obsolescence, and irreparable conditions during physical inventory counts (4.14). Respondents were also highly aware of regular inventory counts (4.03) and quality-control inspections conducted by the Technical Inspection Committee (3.99). Moderate awareness was observed in system-based functions such as expiration-date tracking systems (3.42) and identifying materials for disposal through inventory management software (3.38) (Table 3).

Table 3. Level of inventory and disposal awareness (Very Highly Aware (VHA) – 4.51–5.00, Highly Aware (HA) – 3.51–4.50, Moderately Aware (MA) – 2.51–3.50, Fairly Aware (FA) – 1.51–2.50, and Low Awareness (LA) – 1.01–1.50).

A. Level on Inventory Awareness	Mean	Descriptive Rating
The University personnel used inventory management software to track and monitor their inventory in real time.	3.57	Highly Aware
Utilized inventory management software systems often include features such as bar code scanning, RFID technology, and batch tracking.	3.57	Highly Aware
Utilizing inventory management software enables suppliers to quickly identify materials that meet specific disposal criteria, such as expiration dates or damaged status.	3.38	Moderately Aware
Conducted regular/annual physical inventory counts to reconcile the quantities of equipment on hand with the quantities recorded as per card in their inventory management systems.	4.03	Highly Aware
During those physical inventory counts, employees visually inspect materials for signs of damage, destruction, expiration, obsolescence, irreparable conditions, or any items that need to be disposed of.	4.14	Highly Aware
Equipment classified as unserviceable may be scrutinized more closely for disposal.	3.91	Highly Aware
For perishable or time-sensitive items, we may implement expiration date tracking systems to ensure that expired items are promptly identified and disposed of before they become unusable.	3.51	Highly Aware
This expiration date tracking system may involve setting up alerts or reminders in inventory management software to notify staff when materials are nearing their expiration dates.	3.42	Moderately Aware
WPU Technical Inspection personnel and the Inspection Committee conducted routine quality control inspections of incoming materials and finished products.	3.99	Highly Aware
Weighted Mean	3.74	Highly Aware
B. Level on Disposal Awareness	Mean	Descriptive Rating
During these inspections, supplies and materials that fail to meet quality standards may be identified for rejection or not accepted.	3.87	Highly Aware
Quality control teams play a crucial role in identifying materials that pose quality or safety risks and in disposing of them accordingly.	4.06	Highly Aware
WPU Personnel maintain open communication channels with their suppliers to stay informed about any recalls, product changes, or quality issues that may affect the materials they have received.	4.01	Highly Aware
University suppliers may provide notifications about materials that need to be disposed of due to defects or regulatory issues.	3.57	Highly Aware
WPU Personnel use demand forecasting techniques to predict future sales and production needs.	3.48	Moderately Aware
By accurately forecasting demand, they can adjust their inventory levels, accordingly, reducing the likelihood of excess materials needing to be disposed of.	3.50	Moderately Aware

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Supplies, Materials, and Equipment have a prescribed estimated useful life and must be disposed of when they expire to maintain product quality and safety.	3.94	Highly Aware
Supplies, Materials & Equipment may become obsolete due to changes in technology, consumer preferences, or regulations.	4.03	Highly Aware
Suppliers/ Manufacturers may dispose of old stock that is no longer in demand or compliant with current standards.	3.74	Highly Aware
Damaged or defective products may not meet quality standards or be safe for use. Manufacturers should dispose of such items to prevent them from reaching consumers and causing harm or negative brand perception.	3.75	Highly Aware
Suppliers /Manufacturers may have excess inventory due to overproduction, changes in demand forecasts, or canceled orders. Disposing of surplus stock helps free up warehouse space and reduces carrying costs.	3.57	Highly Aware
Suppliers/Manufacturers must comply with regulations regarding the disposal of hazardous materials, electronic waste, or other regulated substances. Failure to adhere to these regulations can result in fines or legal consequences.	3.90	Highly Aware
Keeping unserviceable items in inventory incurs storage costs, including rent, utilities, and labor. Manufacturers may weigh the cost of holding onto outdated inventory against the potential benefits of selling or disposing of it.	3.83	Highly Aware
Limited warehouse space may necessitate disposing of unserviceable equipment to make room for new inventory.	3.99	Highly Aware
Weighted Mean	3.80	Highly Aware

Level of Disposal Awareness

The result shows that respondents also demonstrated a high level of disposal awareness, with an overall weighted mean of 3.80 interpreted as “Highly Aware.” The highest-rated indicators included the role of quality control teams in identifying materials that pose safety risks (4.06), awareness that supplies and equipment become obsolete due to technological changes (4.03), and communication with suppliers regarding recalls and quality issues (4.01). Respondents also showed awareness of disposal procedures related to warehouse space limitations, equipment life span, and compliance with disposal regulations. However, lower awareness was observed in demand forecasting techniques (3.48) and adjusting inventory levels based on projected demand (3.50) (Table 3).

Problems Encountered in Inventory and Disposal

The findings revealed that respondents agreed that several operational problems occur in inventory and disposal management. The highest-rated problems included untrained personnel operating equipment (3.62), failure to replace worn parts when needed (3.58), improper equipment storage (3.57), improper maintenance (3.53), and poor electrical connections (3.52). Other problems included ignoring warning signals, failure to read manuals, overrunning machine capability, improper weather-related use, and component misalignment. The overall weighted mean of 3.45 indicated that respondents moderately agreed that these problems occur within the university (Table 4).

Table 4. Problems encountered in inventory and disposal (Strongly Agree – 4.51–5.00, Agree – 3.51–4.50, Moderately Agree – 2.51–3.50, Disagree – 1.51–2.50, Strongly Disagree – 1.01–1.50).

Problems Encountered	Mean	Descriptive Rating
Untrained Personnel Operating Equipment	3.62	Agree
Not Replacing Worn Parts When Needed	3.58	Agree
Improper Equipment Storage	3.57	Agree
Improper Maintenance	3.53	Agree
Poor Electrical Connections	3.52	Agree
Ignoring Warning Signals	3.38	Agree
Failure To Read the Owner’s Manual	3.36	Moderately Agree
Overrunning The Machine’s Capability	3.35	Moderately Agree
Improper Weather-Related Use	3.32	Moderately Agree
Component Misalignment	3.24	Moderately Agree
Weighted Mean	3.45	Moderately Agree

Relationship Between Demographic Profile and Inventory Awareness

The findings revealed that sex, job position, and technical training had significant relationships with inventory awareness. Sex showed a highly significant relationship with inventory awareness ($r = -0.263$, $p = 0.000$), while technical training demonstrated a highly significant positive relationship ($r = 0.219$, $p = 0.003$). Job position also showed a significant relationship with inventory awareness ($r = 0.154$, $p = 0.038$). On the other hand, age, civil status, educational attainment, years in service, monthly salary, and managerial training showed no significant relationship with inventory awareness (Table 5).

Table 5. Relationship between demographic profile and inventory awareness (Not Significant – $p > 0.05$, Significant – $p \leq 0.05$, Highly Significant – $p \leq 0.01$).

Level of Inventory Awareness			
Demographic Profile	Comp Value	p-value	Remarks
Age	0.002	0.978	Not significant
Civil Status	-0.135	0.072	Not significant
Sex	-0.263**	0.000	Highly significant
Highest Educational Attainment	-0.113	0.131	Not significant
Job Position	0.154*	0.038	Significant
Number of Years in Service	-0.088	0.239	Not significant
Monthly Salary	-0.132	0.077	Not significant
Training on Managerial Skills	0.004	0.959	Not significant
Training on Technical Skills	.219**	0.003	Highly significant

Relationship Between Demographic Profile and Disposal Awareness

The findings revealed that technical training demonstrated a highly significant positive relationship with disposal awareness ($r = 0.283$, $p = 0.000$). Other demographic variables such as age, civil status, sex, educational attainment, job position, years in service, monthly salary, and managerial training showed no significant relationship with disposal awareness (Table 6).

Table 6. Relationship between demographic profile and disposal awareness (Not Significant – $p > 0.05$, Significant – $p \leq 0.05$, Highly Significant – $p \leq 0.01$).

Level of Disposal Awareness			
Demographic Profile	Comp Value	p-value	Remarks
Age	-0.045	0.549	Not significant
Civil Status	-0.120	0.107	Not significant
Sex	-0.104	0.164	Not significant
Highest Educational Attainment	0.072	0.339	Not significant
Job Position	0.115	0.124	Not significant
Number of Years in Service	-0.062	0.412	Not significant
Monthly Salary	-0.039	0.602	Not significant
Training on Managerial Skills	-0.041	0.585	Not significant
Training on Technical Skills	0.283**	0.000	Highly significant

DISCUSSION

Demographic Profile of the Respondents

The demographic profile suggests that the university workforce is composed largely of mid-career, highly educated, and permanently employed personnel. This combination indicates a relatively stable and experienced organizational environment. Such stability is important because it creates favorable conditions for the consistent implementation of institutional policies, including inventory and disposal procedures. Previous studies have shown that employee experience and workforce stability contribute to improved organizational performance, planning effectiveness, and procedural compliance because experienced personnel possess a better understanding of organizational systems and operational requirements (Ng and Feldman 2010, Jonsson and Mattsson 2008).

Moreover, high educational attainment implies that employees possess strong analytical and cognitive skills, which likely facilitate understanding of procedural guidelines, compliance standards, and technical processes relevant to inventory and disposal management (Pfeffer 1998). Similarly, Legaspi (2022) reported that effective implementation of inventory management systems requires personnel who can understand inventory processes, utilize information systems, and maintain accurate records.

Additionally, the predominance of married respondents and stable employment status may positively influence employees' sense of responsibility, diligence, and organizational commitment, as family-oriented employees and permanent staff often exhibit higher adherence to policies and greater motivation to perform assigned tasks effectively (Meyer et al. 2002). In public institutions, employee commitment and accountability are essential for maintaining accurate inventory records, safeguarding assets, and ensuring compliance with government regulations governing property management (Parilla et al. 2022).

Organizational stability and employee experience are often associated with improved work performance and institutional effectiveness (Robbins and Judge 2017). While workforce stability, educational attainment, and employee experience are generally associated with improved organizational performance, these characteristics

alone may not guarantee effective inventory and disposal management practices. Studies have shown that inventory performance depends not only on employee qualifications but also on the effectiveness of inventory systems, organizational support, continuous training, and monitoring mechanisms (Rajeev 2008, Muckstadt and Sapra 2010). This implies that institutional performance in inventory management may depend more on system efficiency, training, and enforcement mechanisms rather than solely on employee qualifications or tenure.

Level of Inventory Awareness

The findings indicate that respondents demonstrate a generally high level of awareness of inventory management practices, particularly in routine and observable activities such as visual inspection, physical inventory counts, and quality control procedures. The highest-rated indicators, inspection of materials and regular inventory reconciliation, suggest that employees are highly familiar with procedural and compliance-based tasks that are consistently performed within the university. These activities are often embedded in daily or periodic operations, which reinforces familiarity and strengthens awareness through repeated practice (Chopra and Meindl 2016). This observation is consistent with the findings of Jonsson and Mattsson (2008), who reported that organizations with established inventory management practices tend to exhibit stronger planning performance and greater employee familiarity with inventory-related processes. Similarly, Parilla et al. (2022) found that regular inventory monitoring and control procedures contribute to improved operational effectiveness and accountability in public institutions.

However, slightly lower mean scores in areas such as expiration-date tracking, automated alert systems, and supplier-linked identification processes indicate a gap in system-based and technology-driven aspects of inventory management. This suggests that respondents are more accustomed to manual and observable procedures than to advanced inventory management systems that rely on automation and data integration. A possible explanation is that some advanced functions in technological features may not be fully implemented or widely utilized across all units of the university. As a result, employees may have limited exposure to some technological tools, leading to moderate rather than high awareness. This aligns with the idea that familiarity with technological systems is largely dependent on actual usage and training, rather than theoretical knowledge alone (Waters 1992). Previous studies have also shown that the successful adoption of inventory technologies depends largely on employee exposure, training, and actual system utilization. Legaspi (2022) reported that inventory management systems improve inventory accuracy and operational efficiency only when personnel are adequately trained and actively engaged in system use. Likewise, Hardgrave et al. (2011) found that technology-based inventory systems enhance inventory visibility and control but require user familiarity and organizational support to maximize their effectiveness.

The findings suggest that respondents are more familiar with routine and observable inventory procedures than with advanced technology-based inventory systems. This pattern is consistent with studies indicating that organizations often achieve higher competency in routine inventory activities than in technology-intensive inventory processes, particularly when system implementation and training opportunities are limited (Muckstadt and Sapra 2010, Rajeev 2008). Therefore, while awareness of manual inventory procedures appears satisfactory, there remains a need to strengthen employee competencies in automated inventory monitoring, predictive inventory management, and digital inventory systems through continuous training and system enhancement activities.

Level of Disposal Awareness

The findings indicate that respondents demonstrate a high level of awareness of inventory disposal practices, particularly in areas related to quality control, obsolescence, and regulatory compliance. The highest-rated indicators, such as the role of quality control teams, recognition of safety risks, and awareness of product obsolescence, suggest that employees are highly conscious of the critical function of disposal in maintaining quality standards and operational safety. These aspects are often emphasized in institutional policies and are directly linked to risk management, which likely explains their high level of awareness (Chopra and Meindl 2016). Proper disposal practices help prevent the accumulation of unusable assets, reduce operational risks, and ensure compliance with established regulations. This finding is consistent with the observations of Muckstadt and Sapra (2010), who emphasized that effective inventory management extends beyond acquisition and storage to include the proper disposition of obsolete, damaged, and excess inventory. Similarly, Parilla et al. (2022) highlighted the importance of inventory control procedures in promoting accountability, resource optimization, and compliance within public institutions.

However, slightly lower awareness in areas such as demand forecasting, adjustment of inventory levels, and predictive disposal decisions reveals a gap in strategic and forward-looking aspects of disposal management. While respondents are knowledgeable about identifying and removing unserviceable items, they appear less familiar with anticipating disposal needs based on projected demand and inventory trends. A possible explanation is that some technological tools are either not fully implemented in the institution or are handled by a limited number of specialized personnel. This also supports the idea that awareness alone is insufficient without

technological integration and proper training, as effective inventory systems rely on both human and technological capabilities (Waters 1992). Previous studies have also shown that effective inventory and asset management increasingly rely on information systems, forecasting tools, and integrated technologies that support decision-making processes (Jonsson and Mattsson 2008). Likewise, Legaspi (2022) found that technology-enabled inventory systems enhance monitoring, forecasting, and inventory control; however, their effectiveness depends on user competence, training, and actual system utilization.

The findings imply that while employees are capable of handling disposal procedures from a compliance standpoint, there is a need to improve competencies in data-driven and technology-based disposal management systems. This observation supports the view that organizational effectiveness in inventory disposal depends not only on compliance with established procedures but also on the integration of forecasting, information systems, and continuous employee development (Rajeev 2008, Hardgrave et al. 2011). Therefore, while disposal awareness among respondents appears satisfactory, there remains a need to strengthen competencies in predictive disposal planning, inventory analytics, and technology-assisted asset management to support more proactive and efficient disposal practices.

Problems Encountered in Inventory and Disposal

The findings suggest that although the overall occurrence of problems is rated as “moderately agree,” the frequency of issues related to untrained personnel, improper storage, and inadequate maintenance suggests situational lapses rather than systemic deficiencies. According to Mercado (2008), effective inventory management requires proper handling, maintenance, and monitoring of equipment. Likewise, Waters (1992) explained that poor inventory control practices and operational errors can lead to equipment damage, inefficiency, and increased operational cost. Studies have shown that employee training and knowledge significantly affect inventory accuracy, compliance, and overall inventory performance. Legaspi (2022) stated that inventory systems are most effective when personnel possess sufficient training and familiarity with inventory procedures and technologies. Likewise, Parilla et al. (2022) reported that employee competence and adherence to inventory procedures contribute significantly to efficient inventory management and service delivery within public institutions. These findings suggest that inadequate training and limited exposure to inventory management practices may contribute to the operational issues observed among respondents. Additionally, Almanzor (2025) found that challenges in inventory management technology adoption include insufficient training, limited infrastructure, and user resistance, which may hinder effective inventory control and operational efficiency in institutions.

Problems related to improper storage and inadequate maintenance also highlight the importance of established control measures and continuous monitoring. According to Rajeev (2008), ineffective inventory practices may lead to increased operational costs, wastage of resources, inventory losses, and reduced organizational performance. Similarly, Hardgrave et al. (2011) observed that organizations that lack effective monitoring and inventory control mechanisms are more susceptible to inaccuracies, asset deterioration, and inefficiencies. These findings imply that maintaining proper storage conditions, conducting regular inspections, and implementing preventive maintenance programs are critical components of effective inventory management.

Furthermore, the identified problems appear to be more closely associated with implementation and compliance challenges than with the absence of institutional policies. Many identified problems are human factor related, which is a major contributor to operational inefficiencies in organizations (Reason 2000). This observation is supported by Meyer et al. (2002), who emphasized that employee commitment and adherence to organizational procedures influence operational effectiveness and policy compliance. Therefore, the findings suggest that strengthening employee training, enhancing monitoring mechanisms, and reinforcing compliance with standard operating procedures may help minimize inventory and disposal-related problems within the university.

Relationship Between Demographic Profile and Inventory Awareness

The findings suggest that specific work-related factors, particularly job position and technical training, play a more significant role in shaping inventory awareness than personal demographic characteristics. The significant relationship between technical training and inventory awareness indicates that competencies related to inventory management are primarily developed through structured learning opportunities and practical exposure rather than demographic characteristics alone. Employees occupying positions directly involved in inventory-related functions are more likely to acquire greater familiarity with inventory procedures due to their routine engagement with inventory monitoring, record-keeping, and control activities. Jonsson and Mattsson (2008) emphasized that effective inventory management practices depend largely on employee understanding of inventory processes and their active participation in planning and control activities.

The findings further demonstrate the importance of technical training in enhancing inventory awareness. Training equips employees with the knowledge and skills necessary to understand inventory procedures, utilize inventory systems, and comply with organizational policies and standards. Previous studies have shown that

employee training contributes significantly to operational performance by improving knowledge acquisition, procedural compliance, and task execution. Aguinis and Kraiger (2009) reported that training and development initiatives positively influence employee knowledge, skills, and organizational effectiveness. Similarly, Legaspi (2022) found that successful implementation of inventory management systems depends on personnel competence, familiarity with inventory processes, and continuous training opportunities.

The significant relationship between job position and inventory awareness may be attributed to differences in role responsibilities and levels of exposure to inventory-related activities. Employees assigned to positions that require direct involvement in inventory management are more likely to develop practical knowledge and awareness through regular application of inventory procedures. This observation is consistent with the findings of Parilla et al. (2022), who reported that personnel actively engaged in inventory-related functions demonstrated better understanding of inventory control practices and compliance requirements.

Therefore, the findings suggest that technical training and job position serve as important mechanisms in transforming general awareness into functional and operational competence. While demographic characteristics may provide contextual information about employees, inventory awareness appears to be more strongly influenced by opportunities for training, role exposure, and active participation in inventory management processes. This supports the view that organizations can enhance inventory awareness and operational effectiveness through continuous capacity-building programs and targeted training interventions (Aguinis and Kraiger 2009, Rajeev 2008).

Relationship Between Demographic Profile and Disposal Awareness

The findings indicate that technical training demonstrates a highly significant relationship with disposal awareness. The absence of significant relationships between disposal awareness and other demographic variables such as age, civil status, sex, educational attainment, job position, years of service, monthly salary, and managerial training further suggests that disposal awareness is primarily influenced by structured learning and targeted capacity-building rather than demographic characteristics or tenure alone. This implies that experience or length of service does not automatically translate into competence in disposal management unless reinforced through formal training interventions. Similar findings were reported by Govindan et al. (2015), who emphasized that effective reverse logistics and disposal management require specialized knowledge and organizational support rather than being dependent on employee demographics.

Technical training plays a crucial role in equipping employees with the competencies needed to properly identify obsolete or unserviceable assets, implement correct disposal procedures, and ensure compliance with institutional and regulatory standards. It also strengthens employees' understanding of the risks associated with improper disposal, including environmental hazards, safety concerns, legal liabilities, and financial losses. Krikke et al. (2013) highlighted that successful end-of-life product management relies heavily on employee competence, structured training, and systemized processes to ensure proper recovery and disposal of assets. In addition, Rogers and Tibben-Lembke (1999) emphasized that reverse logistics performance is strongly influenced by organizational capability, employee knowledge, and the presence of formal disposal systems.

Furthermore, studies have shown that training significantly enhances compliance and operational accuracy in disposal and asset management activities. Pagell et al. (2004) found that environmental and operational performance improves when employees are properly trained in sustainable disposal practices and supported by clear organizational procedures. Similarly, Parilla et al. (2022) reported that personnel competency and adherence to established inventory and asset management procedures contribute significantly to accountability and efficiency in public sector institutions.

Overall, the findings demonstrate that technical training is a key determinant of disposal awareness, as it bridges the gap between policy and practice and enables employees to execute disposal procedures in a safe, compliant, and efficient manner. This supports the view that effective disposal management is not merely a function of employee demographics but is largely dependent on structured training programs, organizational systems, and continuous capacity development initiatives (Govindan et al. 2015, Krikke et al. 2013).

FUNDING

This research was financially supported by Western Philippines University.

GENERATIVE AI STATEMENT

This study acknowledges the limited and supportive use of Grammarly (Free version) as a grammar and writing assistance tool. The use of Grammarly was strictly confined to language enhancement and structural support, particularly in identifying appropriate academic terminology, spelling correction, grammar refinement, substitution of words, punctuation checking, and readability improvement. It served as a supplementary proofreading aid to ensure linguistic accuracy and consistency.

No sensitive, confidential, or primary research data were input into any AI or writing assistance tools. All outputs generated by Grammarly were carefully reviewed, revised, and validated by the author prior to inclusion in the final manuscript.

It is further emphasized that the research design, methodology, data collection, statistical analysis, interpretation of results, discussion, and conclusions are entirely the original intellectual work of the author. The use of Grammarly was strictly assistive and did not influence the scientific content, findings, or claims of the study. Final responsibility for the accuracy, validity, and integrity of the manuscript rests solely with the author.

ETHICAL CONSIDERATIONS

Ethical considerations were strictly observed throughout the conduct of the study. Participation was voluntary, and informed consent was obtained from all respondents prior to data collection. The researcher ensured confidentiality and anonymity by not collecting personally identifiable information. All responses were treated with utmost confidentiality and were used solely for academic purposes. These measures were implemented to protect the rights, privacy, and welfare of the respondents.

DECLARATION OF COMPETING INTEREST

The author declares that there is no competing interest to any authors.

ACKNOWLEDGMENTS

The researcher expresses her sincere gratitude to Western Philippines University, the Supply and Property Management Office, and all respondents who participated in the study. Appreciation is also extended to the faculty advisers, research panel members, and individuals who contributed to the completion of this study.

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Suggested citation: Opras BD. 2026. Property Inventory and Disposal Management of Western Philippines University Aborlan, Palawan. In: Dolorosa RG, Trestiza KAJ, Mabuhay-Omar JA, Diamante JT, Mecha JPF, Gimarangan JA and Espartero SAM (Eds.), *RIDE Annual Conference Proceedings* (Vol. 1, pp. 118-129). Western Philippines University, Palawan, Philippines.