

Waste Management Practices of Secondary School canteens in the Province of Ilocos Sur

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ABSTRACT

The study attempted to determine the level of waste management practices of secondary school canteens in the province of Ilocos Sur with the canteen managers, canteen staff and students as the respondents.

The level of waste management practices was measured through the extent of the implementation of canteen policies by the administrators, personnel, and students and the effectiveness in canteens management along with the four areas on meal planning, services delivered, physical facilities and location, and layout of the canteen. Data were gathered through the use of the three sets of questionnaires one of which was developed by the researchers and was content-validated by experts.

The findings of the investigation revealed that the level of waste management practices of the secondary school canteens along the extent of the implementation of canteen policies is "Very High" and along the canteen management is justified to be "Effective". Results of the study further showed a number of significant relationships between and among variables considered in the undertaking.

In the light of the research findings, it is generally recommended that the secondary school canteens covered in the study should be incessantly motivated to support the Ecological Waste Management Act of 2000 through the stringent implementation of their school canteen policies and through the adherence of quality and effective canteen management that caters to the different nutritional needs of the whole school population.

Keywords: waste management practices, secondary school canteens, Ilocos Sur

INTRODUCTION

Pollution nowadays is one of the ecological issues and concerns that confront authorities. This problem, if not properly addressed, can be disastrous to human lives and other living organisms. The physical health condition of the people is endangered, eventually the cognitive states of these individuals would be very much affected.

The recent studies of experts from the United Nations have recorded Metro Manila as the third highly polluted area in Asia. Metro Manila is polluted because of denuded forests and elimination of trees from the urban centers. Business and ordinary citizens continue to use dirty technologies, such as incinerators and the burning of fossil fuel to generate electric power. Many vehicles emitting carbon dioxide ply the major avenues and streets. Backyard burning and burning of agricultural and chemical wastes are continuously allowed despite the prohibitive section of Republic Act 9003 and Republic Act 8749. Government agencies like Metro Manila Development Authority, the Department of Environment and Natural Resources, and the local government units allowed the indiscriminate cutting of trees along major thoroughfares of Metro Manila and mini forests in the cities (Arsenio & Arsenio, 2010).

The school as an institution of learning can be of great help in addressing the solution of such environmental dilemma. The administrators, teaching staff, and other personnel of the school can teach the students the basic things on how to care, preserve, and conserve the rudiments of the surroundings. The canteen of the school which is one of the possible sources of waste materials should be properly managed and operated. If not, this part of the educational system could be instrumental in the spread of contagious diseases and other kinds of human physical degradation that may result to permanent learning disabilities and behavioral maladjustments.

Along this premise, the researchers are interested to study the waste management practices of the secondary school canteens in the province of Ilocos Sur. Findings of this investigation may correct malpractices of waste collection and disposal in order to come up with a better canteen management. Hence, this will increase effectiveness and productivity of the school through the maximum utilization of canteen facilities and other resources. Results of the study may also serve as baseline information in strengthening the weaknesses of the canteen operation to satisfy the different needs of its clientele.

The study aimed to investigate the level of waste management practices of the secondary school canteens in the province of Ilocos Sur during the School Year 2010-2011. The significant relationships between the profiles of the respondents and the two indicators of waste management practices were also looked into.

Specifically, it tried to determine the profile of the canteen manager-respondents in terms of their personal-related variables such as age, sex, civil status, educational attainment, status of appointment, number of in-service training program attended, and number of years as canteen manager; look into the profile of the canteen staff-respondents in terms of their age, sex, civil status, number of years as staff, educational attainment, place of residence, and monthly salary; determine the profile of the school-respondents in terms of the number of students enrolled, number of teaching staff, number of non-teaching personnel, and annual canteen budget; find out the level of waste management practices of the secondary school canteens of Ilocos Sur in terms of the extent of the implementation of canteen policies by administrators, personnel, and students and the effectiveness in canteen management along meal planning, services delivered, physical facilities, and location and layout; and identify the significant relationships between the level of waste management practices and the profiles of the canteen managers, canteen staff, and school.

The Republic Act 9003 or the Ecological Solid Waste Management Act was passed into law by the Philippine Congress in 2000. Under this law, local government is responsible in the collection and segregation of biodegradable, compostable, and reusable wastes. Further, in its Sec. 21, it provides that segregation of wastes shall primarily be conducted at the source, to include household, institutional, industrial, commercial, and agricultural sources.

Likewise, Republic Act 8749 which is known as the Philippine Clean Air Act of 1999 emphasizes that the state shall promote and protect the global environment to attain sustainable development and that the state recognizes that a clean and healthy environment is for the good of all and should, therefore, be the concern of all.

To help materialize these Republic Acts, the school should have an active role in its implementation like adopting the Green Flag School Program as instituted by the Center for Health Environment and Justice of the United States. The focus of the program is on the creation and improvement of environmental activities and policies. Making this happen, Arsenic & Arsenio (2010) expressed that a school team composed of school administrators, teachers, student leaders, parents, and a local

government unit head should conduct a research on the environmental situation of their school. The research findings may serve as their basis in developing creative and proactive solutions to environmental issues.

Galing (2001) as cited by Bateria (2005) defined solid waste as non-liquid waste material arising from domestic, trade, commercial, industrial, and mining activities. He also elaborated on solid waste management as activities pertaining to the control, transfer and transport, processing, and disposal of solid waste in accordance with the best principles of public health, economics, engineering, conservation, and aesthetics.

Further, he pointed out the importance of Zero Waste Management Program which had two components: one is the special preparation and the other is the actual-community-wide implementation of the program. Both components were focused on the program's target of garbage-free environment.

Mobilizing the community for Zero Waste Management was launched by Mendoza in 1993. This program aimed to improve the quality of life of Bustos residents through a balanced ecology and sustained community development for a better environment. This puts hope to eradicate respiratory diseases, promote a garbage-free environment, and provide better access to health services.

Waste management practices differ between developed and developing nations, between urban and rural areas, residential and industrial producers. According to Quiambao (2009) as cited by Bateria (2005), to dispose materials properly is to use a technique or procedure called as the Total Recycling Scheme which utilizes into factory returnable, fertilizers, feeds, fermentable, fuel, fine crafts, and filling materials.

Further, management of waste is a huge task that depends upon successful programs for recycling and reuse; providing safe and effective waste collection and disposal; the availability of sustainable financing; and effective contributions from government, the public, and civil society (Priyawa, 2006).

Moreover, Sathiankhetta (2008) found out that the participation of the educational institutions in managing solid waste in the province of Rayong and the level of implementation of solid waste management along collection system, transportation, and disposal system are high. In addition, the implementation of solid waste in said province has a high impact along decreased pollutions, good environment, economic, and social aspects.

Quibilan (2011) stressed that schools tend to have a high compliance with the Solid Waste Management Program implementation since they are guided by principles that include the protection of the environment and ecology. She added that every school has a discipline plan that conforms to the existing laws of the state, thus, instilling discipline among teachers, pupils and students is facilitated.

On the other hand, Ramirez (2011) revealed that the level of awareness on solid waste management of the faculty, non-teaching personnel, and students in UNP Candon is high.

METHODOLOGY

The study made use of the descriptive-correlational method of research. A questionnaire was used to gather information needed in the study. The profiles of the three groups of respondents were correlated with the two indicators of waste management practices of secondary school canteens.

The respondents of the study were five school canteen managers, 18 canteen staff, and 397 fourth year student homeroom officers, total number of 420 in the six national secondary schools in the province of Ilocos Sur. These included the Bantay National High School, Cabugao National High School, Ilocos Sur National High School, Narvacan Central High School, San Juan National High School and Santa National High School. It is noted that one secondary school does not have canteen manager.

A questionnaire was the prime tool of gathering data about the respondents. The study used three sets of questionnaires:

First, a checklist questionnaire was used to gather the profiles of the canteen managers, canteen staff, and the school-respondents.

Second, the newly constructed instrument was utilized to measure the extent of implementation of canteen policies with a validity index of 4.80. The said instrument was content validated by experts, namely: Dr. Ramon Razote (Director, Auxiliary Services Office), Prof. Marilou Ronquillo (Head, HRA Program), and Prof. Jenina Batin (Asst. Director, University Guestel).

Third, the questionnaire adopted from Battad (2003) was employed to measure the effectiveness in canteen management.

The researchers asked permission from the Superintendent of the Department of Education, Division of Ilocos Sur to administer the questionnaires to the school- respondents of the study. The approved letter served as document to further ask permission to reach the respondents in the different secondary schools in the province of Ilocos Sur. The researchers personally floated and retrieved the questionnaires to ensure 100 percent collection of data.

The data gathered in the study were statistically treated and interpreted through the following: a) frequency count and percentages to describe the profiles of the respondents: canteen managers, canteen staff, and the secondary schools; b) mean to determine the level of waste management practices along the extent of implementation of canteen policies and effectiveness in canteen management; and c) Simple correlation analysis to find out any significant relationship between the profiles of the three sets of respondents and the level of waste management practices.

RESULTS AND DISCUSSIONS

Profile of the Canteen Managers

Two (40%) of the canteen managers are 51 years old and above, while one (20%) is within the age bracket 31-40 years; Three (60%) of them are female while two (40%) are male. Three (60%) are married while two (40%) are single. All of them are BS/AB graduates and occupying permanent item of employment. Not one of them had training along any related professional activity that could enhance their skills in the management and administration of school canteens. Further, of the five canteen manager respondents, three (60%) have served as canteen managers for 1-5 years while two (40%) have been in that position for 16-20 years. It is noted here that there is one school that does not have a canteen manager.

Profile of the Canteen Staff

Out of 18 canteen staff, seven (38.89%) are 31-40 years old while five (27.78%) are in the age bracket from 51 years and above. Eleven (61.11%) are female and seven (38.89%) are male; twelve (67.67%) are married while six (33.33%) are single. Nine (50.00%) of them have served as canteen staff for 1-5 years; one (5.56%) each served as canteen staff for 11-15 years, 16-20 years, 26-30 years, 31-35

years, and 36-40 years respectively. Majority (14 or 77.78%) are BS/AB graduates and one (5.56%) is with MA units. Twelve (66.67%) live away from the town proper and six (33.33%) are within the town proper. Moreover, of the 18 canteen staff, 16 (88.88%) of them receive their monthly salary of Php 1,000 and below while one (1.56%) gets a salary within the range of Php3,001 – Php5,000.

Profile of the Secondary Schools

There were 8,860 secondary school students who enrolled during the period covered in the study. From the six school-respondents, Ilocos Sur National High School {ISNHS} had the greatest number of students (n=4845), while the smallest number of students enrolled (n=103) is from Santa National High School (SNHS). The ISNHS also has the highest number of teaching staff (n=178), and non-teaching personnel (n=38), and the latter (SNHS) had the lowest number of teaching staff (n=9), and non-teaching personnel (n=1) from the total number of 326 teaching staff and 83 non-teaching personnel, respectively.

Further, taken as a whole, the six school-respondents have an approximate annual budget of Php492,000. From this amount, Cabugao National High School (CNHS) has the largest budget (Php200,000) while Santa National High School (Php25,000) has the least budget.

Extent of Implementation of Canteen Policies by the Administrators

Taken singly, the three groups of respondents, as shown Table 1, assessed the extent of implementation of canteen policies by the administrators as "Very High" with the mean rating of 3.99. This rating is derived from Item 1 "The administrators enforce the policy on the disposal of waste (=4.32); and Item 2 "The administrators provide ample trash cans to dispose garbage of students" (5=4.22). These were rated "Fully implemented" by the said groups of respondents.

Table 1. Level of waste management practices of secondary schools in the province of Ilocos Sur along the extent of implementation of canteen policies.

Extent of Implementation of Canteen Policies	Students		Canteen Managers		Canteen		As a whole	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
A. The Administrators...								
1. enforce the policy on the disposal of wastes	4.20	0.43	4.30	0.35	4.50	0.42	4.32	0.41
2. provide ample trash cans to dispose garbage of students	4.12	0.36	4.06	0.35	4.20	0.41	4.11	0.35
3. provide big containers separating the degradable and non-degradable waste.	3.97	0.39	4.06	0.40	4.06	0.37	4.03	0.38
4. advocate an exclusive dump site for school waste.	3.96	0.39	4.06	0.40	4.06	0.37	4.03	0.38
5. implement a monitoring mechanism on checking the cleanliness and sanitation of the school canteen.	3.99	0.40	4.06	0.40	4.06	0.37	4.03	0.38
6. provide vehicles to transport waste to the dumpsite.	4.02	0.39	4.06	0.40	4.06	0.37	4.03	0.38
7. assign manpower responsible in keeping good waste management	4.02	0.39	4.06	0.40	4.06	0.37	4.03	0.38
B. The personnel...								
1. help in the implementation of disposal system	4.06	0.39	4.06	0.40	4.06	0.37	4.03	0.38
2. are responsible in keeping the canteen convenient for their personnel.	3.81	0.38	4.06	0.40	4.06	0.37	4.03	0.38
3. are tapped to dispense solid waste management properly after classes outside the school.	4.05	0.42	4.06	0.40	4.06	0.37	4.03	0.38
4. carry out waste materials for proper management	4.22	0.41	4.06	0.40	4.06	0.37	4.03	0.38
5. give intensive campaign on the importance of keeping the school clean and orderly.	4.02	0.39	4.06	0.40	4.06	0.37	4.03	0.38
C. The students...								
1. are responsible in placing bottles in their proper cases after snacks	4.10	0.36	4.06	0.40	4.06	0.37	4.03	0.38
2. know how to keep their trashes property.	3.90	0.30	4.06	0.40	4.06	0.37	4.03	0.38
3. help in the implementation on the disposal of waste materials.	4.00	0.35	4.06	0.40	4.06	0.37	4.03	0.38
4. are conscious on the health benefits of proper waste disposal system	3.98	0.37	4.06	0.40	4.06	0.37	4.03	0.38
5. are partners in creating healthy environment in the canteen.	4.07	0.36	4.06	0.40	4.06	0.37	4.03	0.38
Total	4.01	0.38	4.06	0.40	4.06	0.37	4.03	0.38
Over-all	4.02	0.38	4.06	0.40	4.06	0.37	4.03	0.38

Legend:

Statistical Range	Item Descriptive Rating	Overall Descriptive Rating
4.21-5.00	Fully Implemented	Excellent
3.41-4.20	Moderately Implemented	Very High
2.61-3.40	Fairly Implemented	High
1.81-2.60	Poorly Implemented	Low
1.00-1.80	Not Implemented at All	Very Low

The finding is supported by the idea of Quibilan (2011) that schools tend to have high compliance with Solid Waste Management Program and that every school has a discipline plan that conforms to the existing laws of state, instilling discipline among teachers, pupils, and students.

On the other hand, item 6 "The administrators provide vehicles to transport waste to the dumpsite" is assessed by the canteen staff as "Poorly Implemented" ($\bar{X}=2.44$), by the students "Fairly Implemented" ($\bar{X}=3.39$), and by the canteen managers "Moderately Implemented" ($\bar{X}=4.0$). The said item received the lowest mean ($\bar{X}=3.36$) and rated as "Moderately Implemented" by the three groups of respondents as a whole.

On the Extent of Implementation of Canteen Policies by the Personnel

The students, canteen staff, and canteen managers assessed the extent of implementation of canteen policies by the personnel as "Very High" with the total mean rating of 4.05. Item 5 "The personnel give intensive campaign on the importance of keeping the school clean and orderly" ($\bar{X}=4.22$) obtained the highest mean and interpreted as "Fully Implemented". This result conforms to the idea of Galing (2001) pointing out the importance of Zero Waste Management Program which is focused on garbage-free environment.

Meanwhile, all other items are interpreted as "Moderately Implemented" with item 3 "The personnel are tapped to dispense solid waste management properly after classes outside the school" having the lowest mean of 3.82. This finding can be basis of requesting the assistance of the LGUs as provided in Sec.10 of Republic Act 9003 particularly on the role of LGUs in solid waste management, that the collection of non-recyclable materials and special wastes shall be the responsibility of the municipality or city.

On the Extent of Implementation of Canteen Policies by the Students

The three groups of respondents rated the extent of implementation of canteen policies specifically by the students as "Very High" with the total mean rating of 3.99. This result is justified by the average mean ratings of all the items from 1 to 5 ranging from 3.87 as the lowest and 4.06 as the highest. The said items were assessed as "Moderately Implemented".

This finding implies that students have indispensable role in the collection and disposal system of waste protecting the school environment and ecology and it conforms to Priyawat (2006) who acknowledged that management of waste is a huge task and an effective contribution from the public and civil society wherein students could be a part is necessary.

On the overall, the assessment of the three groups of respondents is interpreted as "Very High" as supported by the mean rating of 3.98. This shows that the level of waste management practices of the secondary school canteens in the province of Ilocos Sur along canteen policies was highly implemented. This result is confirmed by Arsenio and Arsenio (2010) in their study which supported the implementation of the Republic Act 9003 which was participated in by the school team in developing creative and proactive solutions to environmental issues.

Effectiveness in Canteen Management

As presented in Table 2, the overall level of waste management practices along the effectiveness in canteen management is "Effective" (5=3.70) as assessed by the three groups of respondents.

Further, all the components of effectiveness in canteen management, namely: meal planning (=3.68); services delivered (≃=3.68); physical facilities (=3.75), and location and layout (5=3.69) are all rated "Effective". The findings explain that the school canteens are managed properly and that the customers were much satisfied in the services being offered to them. The finding of Battad (2003) has a resemblance with the result of the present study where in all the above mentioned components were rated "Effective" which means that said components are responsive to quality canteen management that precipitate clientele satisfaction.

Table 2. Level of waste management practices of secondary schools in the province of Ilocos Sur along the effectiveness in canteen management.

Effectiveness In Canteen Management	Students		Canteen Staff		Canteen Managers		Asa whole	
	5	DR	5x	DR	7	DR	X	DR
A. Meal Planning								
1. Meals are planned to meet the nutrient requirements of the customers.	3.79	E	3.67	E	3.80	E	3.78	E
2. Planned meals are satisfying.	3.71	E	3.50	E	3.60	E	3.70	E
3. Locally produced foods are included.	3.62	E	3.78	E	4.20	E	3.63	E
4. Variety in texture and flavor.	3.53	E	3.56	E	4.20	E	3.54	E
5. Meals are planned according to the amount of time, energy and facilities available.	3.66	E	3.61	E	3.75	E	3.67	E
6. But nutritious foods are served.	3.73	E	3.67	E	4.40	VE	3.73	E
Total	3.68	E	3.63	E	3.99	E	3.68	E
B. Services Delivered								
1. Meals are served at regular time.	3.80	E	3.65	E	3.80	E	3.80	E
2. Servers observed proper grooming.	3.63	E	3.61	E	4.00	E	3.63	E
3. Prompt and courteous service.	3.66	E	3.82	E	4.40	VE	3.68	E
4. Presence of adequate dinner wares.	3.54	E	3.94	E	4.20	E	3.56	E
5. Observe proper handling of food.	3.71	E	4.06	E	4.00	E	3.73	E
Total	3.67	E	3.81	E	4.08	E	3.68	E
C. Physical Facilities								
1. The canteen is properly lighted.	3.91	E	3.83	E	4.80	VE	3.92	E
2. The canteens well-ventilated.	3.73	E	3.78	E	4.80	VE	3.75	E
3. Presence and maintenance of a good school, canteen room properly structured for food service.	3.92	E	3.83	E	4.20	E	3.92	E
4. Canteen has beautiful environment.	3.81	E	3.89	E	4.00	E	3.81	E
5. Provision of self-service or cafeteria canteen.	3.58	E	3.94	E	3.80	E	3.60	E
6. Canteen has well-maintained sanitary comfort rooms.	3.54	E	3.39	A	4.20	E	3.55	E
7. Presence of well-covered trash cans.	3.62	E	3.39	A	3.80	E	3.62	E
8. Presence of good water facilities.	3.78	E	3.44	E	4.20	E	3.77	E
9. Presence of good drainage system.	3.66	E	3.44	E	3.80	E	3.65	E
10. The canteen is well equipped with the following:								
a. cooking paraphernalia	4.05	E	3.90	E	4.00	E	4.04	E
b. storage canteen/equipment	3.89	E	3.56	E	3.75	E	3.87	E
c. preparation tools	3.92	E	3.67	E	3.75	E	3.91	E
d. mixing tools	3.80	E	3.79	E	4.20	E	3.81	E
Total	3.74	E	3.71	E	4.11	E	3.75	E
D. Location and Layout								
1. Accessibility to the customers.	3.80	E	4.22	VE	4.00	E	3.82	E
2. Free from pollution, like noise, smoke, dust.	3.41	E	3.83	E	4.20	E	3.44	E
3. Adequacy of display selves provided.	3.62	E	3.83	E	4.20	E	3.63	E
4. Orderliness, cleanliness and proper structuring of the area are observed.	3.79	E	4.00	E	4.20	E	3.61	E
5. Storage area with adequate shelves, racks, cabinets for a health and safe keeping of equipment and utensils.	3.77	E	3.61	E	4.20	E	3.77	E
Total	3.67	E	3.90	E	4.15	E	3.69	E
Overall	3.69	E	3.76	E	4.08	E	3.70	E

Legend:

Statistical Range	Item and Overall Descriptive Rating
4.21-5.00	Very Effective
3.41-4.20	Effective
2.61-3.40	Average

Statistical Range	Item and Overall Descriptive Rating
1.81-2.60	Ineffective
1.00-1.80	Very Ineffective

The Relationship between the Level of Waste Management and Profile of Canteen Managers

As shown in Table 3, the profile of the canteen managers such as age, sex, civil status and number of year as canteen manager have no significant relationship with the two indicators on the level of waste management practices taken singly and in the overall. Moreover, all other variables like educational attainment, status of appointment and number of in-service program attended remained constant because there was only one category that came out as a response from the mentioned variables.

Table 3. Correlation coefficients showing the relationship between the level of waste management practices and the profile of canteen managers.

Profile Variables	Waste Management Practices									Overall
	Extent of Implementation of Canteen Policies				Effectiveness in Canteen Management					
	Admin	Personnel	Students	Asa Whole	Planning	Services Delivered	Physical Facilities	Location & Layout	Asa Whole	
Age	0.673	0.808	0.607	0.797	0.465	0.617	0.698	0.743	0.680	0.739
Sex	0.028	0.451	-0.491	-0.362	0.158	0.135	-0.073	-0.296	-0.019	-0.191
Civil Status	-0.389	-0.095	0.464	-0.003	0.158	-0.135	-0.012	-0.296	-0.144	-0.071
No. of Year as Manager	-0.818	-0.689	-0.509	-0.676	-0.339	-0.652	-0.594	0.757	-0.629	-1.305

The Relationship between the Level of Waste Management and Profile of Canteen Staff

As presented in Table 4, the number of years as canteen staff is inversely related to the extent of implementation of canteen policies as assessed by the students $r=-0.531$ and as a whole ($r=-0.488$). This means that canteen staff who have less number of years in the service are more diligent in the observance of waste management practices than those who are longer in the service.

Their educational attainment is likewise inversely related to the extent of the implementation of canteen policies based on the assessment of the personnel ($r=-0.520$), students ($r=-0.636$), and as whole ($r=-0.563$). This finding explains that the lower the educational attainment of the canteen staff, the higher is their level of awareness and knowledge in the adherence of waste management practices in their own respective canteens. This further indicates that their academic preparation is more than enough for them to understand the health benefits that

could offer to the school populace and at the same time can better practice the proper waste collection and good disposal systems that may promote a healthy environment in their school.

Table 4. Correlation coefficients showing the relationship between the level of waste management practices and profile of canteen staff.

Profile Variables	Waste Management Practices									Overall
	Extent of Implementation of Canteen Policies				Effectiveness in Canteen Management					
	Admin	Personnel	Students	As a Whole	Planning	Services Delivered	Physical Facilities	Location & Layout	As a Whole	
Age	0.185	0.101	-0.127	0.080	0.087	0.017	-0.043	-0.105	0.014	-0.033
Sex	-0.017	0.108	0.227	0.111	-0.249	-0.210	-0.246	-0.269	-0.272	-0.080
Civil Status	0.091	0.059	0.120	0.091	-0.179	-0.293	-0.371	-0.337	-0.339	0.124
No. of Year as Canteen Staff	-0.380	-0.415	-0.531*	-0.488*	-0.197	-0.220	-0.263	-0.055	0.219	0.353
Educational Attainment	-0.436	-0.520*	-0.636**	-0.563*	0.052	0.248	0.278	0.203	0.299	-0.132
Place of Residence	0.290	0.336	0.237	0.311	0.116	-0.065	-0.219	-0.306	-0.146	-0.082
Monthly Salary	0.172	0.280	0.020	0.179	0.105	0.092	-0.248	-0.219	-0.105	-0.037

** correlation is significant at 0.01 level

* Correlation is significant at 0.05 level

The result of the study is complemented with the finding of Ramirez (2011) that the level of awareness on solid waste management practice in UNP Candon is high by the three groups of respondents, namely: faculty, non-teaching personnel and students. All these respondents have different levels of educational background and yet all of them are supportive to their program.

Further, all other variables do not have significant relationship either in the extent of the implementation of canteen policies or in the effectiveness in canteen management as a whole and in the overall level of the waste management practices.

The Relationship between the Level of Waste Management and Profile of School

As disclosed in Table 5, the profile of the school namely; number of students enrolled, number of teaching staff, number of non-teaching personnel, and annual canteen budget do not have any significant relationship with the indicators taken singly, as a whole, and the overall level of waste management practices.

Table 5. Correlation Coefficients Showing the Relationship between the Level of Waste Management Practices and Profile of School

Profile Variables	Waste Management Practices									Over-all
	Extent of Implementation of Canteen Policies				Effectiveness in Canteen Management					
	Admin	Personnel	Students	Asa Whole	Plann-ing	Services Delivered	Physical Facillities	Location & Layout	Asa Whole	
No. of Students Enrolled	0.372	0.075	-0.155	-0.164	0.787	-0.730	-0.591	-0.074	-0.611	-0.367
No. of Teaching Staff	-0.392	0.047	-0.116	-0.166	-0.780	-0.728	-0.587	-0.115	-0.619	0.367
No. of Non-Teaching Personnel	-0.187	0.220	0.175	0.091	-0.570	-0.529	-0.362	-0.105	-0.431	-0.17
Annual Canteen Budaet	0.404	0.609	0.182	0.305	-0.060	0.100	0.114	0.529	0.194	0.249

** Correlation is significant at 0.01 level

*Correlation is significant at 0.05 level

The findings imply that there are probably other variables not mentioned in the investigation that may contribute to the level of waste management being practiced by the secondary school canteens in the province of Ilocos Sur.

CONCLUSIONS

Most canteen managers have ages ranging from 41 years and above, female, married, and had been canteen managers for 1-5 years. All of them are only BS/AB graduates, permanent, and have not attended any kind of in-service training program related to their present position in their schools. On the other hand, most canteen staff are 31-40 years old and majority of them are female, married, served as staff for 1-5 years, BS/AB graduates, live away from town proper, and receive a monthly salary ranging from Php 1,000 and below. Further, Ilocos Sur National High

School has the largest number of students, number of teaching and non-teaching staff. In terms of canteen annual budget, Cabugao National High School has the biggest among the six-school respondents.

The "Very High" overall level of waste management practices of the secondary school canteens in the province of Ilocos Sur along the extent of the implementation of canteen policies is a sound indication that respondents are greatly supportive to the Republic Act 9003, known as the Ecological Waste Management Act of 2000.

The "Effective" overall level of the effectiveness in canteen management is a vivid manifestation that quality canteen operations are responsive to waste management practices that lead to clientele satisfaction and loyalty on the services offered by the school.

The significant inverse relationship between the number of years as canteen staff and the extent of implementation of canteen policies as assessed by the students and as a whole means that the less number of years the canteen staff serves, the more diligent they are in the observance of waste management practices than those who are longer in the service.

The significant inverse relationship between the educational attainment of the canteen staff and the extent of the implementation of canteen policies points out that the lower the educational attainment of the canteen staff, the higher is their level of awareness and knowledge in the adherence of waste management practices in their own respective canteens.

RECOMMENDATIONS

Based on the conclusions, the researchers recommend that canteen managers attend in-service training program related to canteen management, thereby update themselves on the latest trends and innovation to make their own school canteens more productive and attractive to varied customers.

Though the overall level of waste management practices of the secondary school canteens in the province of Ilocos Sur along the extent of implementation of canteen policies is very high, the canteen managers should maintain their present level and keep on aiming for the highest level. This would be done through the concerted efforts of the entire school population and the involvement of parents in

the full implementation of canteen policies in order to make its operations completely functional and dynamic.

Inasmuch as the overall level of effectiveness in canteen management of the secondary schools is effective, schools concerned should always be motivated to uphold its present level of effectiveness. In doing so, everyone in the educational setting starting from the rank and file to the highest executive officials must exercise their undying responsibility and commitment towards the realization of a serviceable canteen management catering to the varied necessities of its clientele not only inside the school but extending its services to wider community.

A similar study should be undertaken using different variables to validate the results of the present study.

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