



---

## **Knowledge and Information Systems Analysis of Selected Human Ecology Extension Programs in the Philippines**

Emilia S. Visco\*

*Associate Professor, Department of Social Development Services, College of Human Ecology, University of the  
Philippines Los Banos, College, Laguna 4031, Philippines*

*Email: [esvisco@up.edu.ph](mailto:esvisco@up.edu.ph)*

### **Abstract**

The study was conducted to analyze the interactions among the actors of the University of the Philippines Los Banos' College of Human Ecology's (UPLB-CHEs) selected extension programs. Specifically, it aimed to 1. Characterize the actors in the knowledge system in terms of their attitude and perception towards the program and each other, and their knowledge and awareness levels on the program; 2. Determine the flow of interaction among and between the actors involved in the knowledge systems; 3. Analyze the factors that affect the end-users' knowledge utilization; and 4. Formulate policy recommendations to help development planners design a more effective and resource-efficient approaches/strategies of information/knowledge utilization.

Self-administered questionnaire, interview schedule and secondary data were used to gather data from the different actors of the extension programs included in this study. The programs include Barangay Integrated Development Approach for Nutrition Improvement (BIDANI) of the Rural Poor; Daycare Resource Center (DCRC) Management; and Establishment of City/Municipal Consumer Protection Centers (MCCPCs). The actors are the resource subsystem (RS), represented by the UPLB-CHE faculty and staff involved in the programs, linking subsystem (LS), represented by the local government units, (LGUs) and the user groups (UGs) represented by the barangay health workers, nutrition scholars and other officials, daycare workers and consumers/businessmen in selected municipalities in Laguna, Philippines.

---

\* Corresponding author.

E-mail address: [esvisco@up.edu.ph](mailto:esvisco@up.edu.ph).

The study showed that the respondents have “high” to “moderate” awareness and knowledge levels on the programs and activities. There was also “high” intra-communication and “moderate” to “low” inter-communication level among them. Generally, they have “favorable” attitude towards their colleagues and each other and “high” perception on the programs’ activities.

The respondents’ sex was significantly related to their perception on BIDANIs programs and activities, and to their communication frequency with their colleagues. For DCRC, it was found out that the UGs educational attainment and annual income has significant relationships with their attitude towards the LS. No significant relationships were found between the respondents’ socio-demographic characteristics and their perception of the program to the utilization of the knowledge they gained from the extension programs.

**Keywords:** knowledge and information systems; human ecology; extension programs

## **1. Introduction**

For more than a hundred years now, the University of the Philippines (UP)’ research and extension programs have been very instrumental not only to the country’s rural development but also to other Southeast Asian countries as well. As the national university of the country, UP is mandated to perform its unique and distinctive leadership in higher education and development [1:1]. Aside from its instruction and research functions, the University as a public university is expected to lead in public service by providing services to the government, private sector, the civil society and the Filipino people as a whole.

To provide public service, the UP system, including UPLB continuously conduct extension programs responsive to the needs of the people. The UPLB-CHE implements extension programs and activities towards the realization of self-reliant and ecologically-stable communities. To attain this, programs conducted are anchored on the goals of human ecology in the country - environmental integrity; development of human potential; food and nutrition security; and empowerment of social institutions and organizations [2:32].

Since the success of any program lies on the participation of the actors involved, the study focused on the interaction of the actors in these programs. In every knowledge system, it is believed that a successful interaction and coordination leads to knowledge generation and utilization over and above those that could be achieved if each actor works independently. Roling in [2] defined knowledge system as the articulated set of actors, networks and/organizations expected or managed to work synergically to support knowledge processes which improve the correspondence between knowledge and environment, and/or the control provided through technology use, in a given domain of human activity [3:1]. Furthermore, [3] explored a framework that understand innovation processes as the outcome of collaborative networks where information is exchanged and learning processes happen [4:131]. A study by Coffey and O’Toole revealed that the knowledge systems perspective was found to improve understanding of a complex knowledge management [5:318].

Putting it in the context of this study, the systems’ components are the actors in the three extension programs studied. These are the resource subsystem (RS), represented by the UPLB-CHE faculty and staff involved in the programs; the linking subsystem (LS), represented by the local government units, (LGUs); and the user groups

(UGs) represented by the barangay health workers, nutrition scholars and other officials, daycare workers and consumers/businessmen in selected municipalities in Laguna, Philippines.

### ***1.1. Objectives of the Study***

This study aimed to analyze interactions among the actors of the University of the Philippines Los Banos' College of Human Ecology's (UPLB-CHE) selected extension programs. Specifically, it aimed to:

1. Characterize the actors in the knowledge system in terms of their attitude and perception towards the program and each other, and their knowledge and awareness levels on the program;
2. Determine the flow of interaction among and between the actors involved in the knowledge systems;
3. Analyze the factors that affect the end-users' knowledge utilization; and
4. Formulate policy recommendations to help development planners design an effective and resource-efficient approaches/strategies of information/knowledge utilization.

It is hoped that this study would enable extension planners and professionals to understand how the various actors in a research, extension and knowledge utilization interact and function to attain common goals. Furthermore, it is hoped that it would enhance the capability of research and extension planners to design a more effective and resource-efficient approaches and strategies of information/knowledge dissemination to hasten utilization. It may also serve as bases for policy reforms regarding knowledge generation, extension and utilization.

## **2. Materials and Methods**

The study was conducted in Laguna, Philippines. This province was chosen as the study site since most of the present extension programs of the College were concentrated in this area. The programs include Daycare Resource Center Management (DCRC), Establishment of Municipal/City Consumer Protection Centers (MCCPC), and Barangay Integrated Development Approach for Nutrition Improvement (BIDANI). While there are other programs of the College that are equally relevant to the dynamics needs of the community people like the program for the elderly; capacity building of nutrition professionals and workers; and training on participatory capacity and vulnerability assessment of local government units, the three programs were chosen because they have been long established and has been institutionalized.

There were three groups of respondents in this study. These include faculty and staff of the University who are involved in the three extension programs under study (resource subsystem); the local government officials and their and staff of other government agencies involved like the Department of Trade and Industry, Department of Social Welfare and Development and barangay council members (linking subsystem); and community members/participants of the training who benefited from any of the extension programs covered in this study (user subsystem)

Self-administered questionnaires were distributed to respondents from research and linking subsystems. Interview schedule using similar set of questionnaires was used to gather information from the user groups. Secondary data was also used. For data analysis, aside from frequency means and counts, Pearson chi-square was used to test the relationship of the variables.

In this study, attitude refers to a person's degree of liking (positive), undecidedness or disliking (negative) toward another person. In this study, attitude refers to the respondents' attitude towards their colleagues, other members of the subsystems and towards extension work. This was measured through a 5-point Likert scale using 30 attitude statements. The higher total score on each item indicates a favorable attitude and a low score, an unfavorable attitude. The middle range is an indication of the respondent's neutral attitude.

Communication includes the frequency of contact (ranging from frequently, i.e. once a month to never, i.e. no contact at all), media utilized (interpersonal, print, telephone/fax or text messaging and others) and content of communication. Communication was based on the following frequency of contact and corresponding value.

The algebraic summation of the scores of the individual's responses to each of the items corresponds to the total score, and was interpreted as representing his interaction level. Scores were grouped into three categories – high, medium and low. A high score means a high interaction level and a low score means a low interaction level. Level of communication was categorized as high, medium or low depending on the frequency of contact.

Knowledge refers to the knowledge in any of the extension programs covered in the study intended for dissemination and utilization by the end-users of the programs. Knowledge level refers to the respondents' awareness and knowledge about the program. Depending on the extension program, knowledge level was based on the respondents' awareness of the program concerned. This was measured through a 5-point Likert scale ranging from "very much aware (5) "moderately aware" (4); "aware" (3); "moderately not aware" (2) and "not aware" (1). Perception of the program, on the other hand, refers to the degree to which the attributes of the programs are perceived by the respondents.

### **3. Results**

BIDANI is a program of the Philippine Plan of Action for Nutrition (PPAN) for building capacities of local governments to integrate nutrition into local government programs. The program has well-defined goals to realize. It envisions a "healthy, well-nourished children growing up to adults according to potentials". Among the program goals include nutrition improvement; poverty alleviation; food security; and good governance.

To accomplish these goals, BIDANI have five major components. These are: 1. BIDA – the nutrition-in-development strategy for LGUs which includes training and technical assistance for the Barangay Integrated Development Plan (BIDP); 2. Barangay Management Information System (BMIS) – a people-based information system for gathering, organizing, storing and updating data about the barangay; 3. Participative Domiciliary Nutrition Rehabilitation/Improvement (PDNR/PDNI) – an individualized strategy to rehabilitate 2<sup>nd</sup> and 3<sup>rd</sup> degree malnourished children and prevent malnutrition; 4. Food Security for Nutrition Improvement (FSNI/IGP) – food production, processing, income generating projects like streetfoods; and 5. Mirco-credit –

provision of opportunities for livelihood through skills and enhancement of trainings, linkages, financial and other material support to selected beneficiaries through micro-credit services of local BIDANI foundations.

Similar to BIDANI, DCRC Programs for Day Care Workers is a long-running extension program of the College. The reason for its sustainability is that it provides a sustained barangay-based human resource development programs for total development and protection of children in the family. Specifically, the program aims to: 1. meet the needs for trained day care workers by conducting training sessions for at least twice a year; 2. develop descriptive information, training modules and materials for day care workers, child care and family development practitioners; and 3. facilitate/encourage collaborative efforts in promoting the program for development and protection of children and families through seminars, workshops, symposia, for a and conferences.

The establishment of the country's Municipality/City Consumer Protection Centers (M/CCPCs) on the other hand, was created in response to the call for a responsive program to address the growing concern on consumer welfare. It was based on Republic Act 7394 otherwise known as the "Consumer Act of the Philippines" wherein this law mandates the government "to protect interests of the consumer, promote his general welfare and to establish standards of conduct for business and industry."

With this premise, the MCCPC was created to help the various municipalities/cities of Laguna establish and manage their Municipal/City Consumer Protection Centers (M/CCPCs). Specifically, it aims to: 1. strengthen the capability of the LGUs in organizing and managing the M/CCPCs in Laguna; 2. help M/CCPCs formulate and implement their action plans; 3. provide technical assistance to the M/CCPCs in the initial implementation of their action plans; and 4. monitor and evaluate the performance of the M/CCPCs and make policy recommendations.

### ***3.1 BIDANI Respondents' Socio-Demographic Profile***

The respondents' from the UGs average age is 42 years. The youngest and the oldest were 23 and 55 years old, respectively. Majority (89%) of them are female. Only 11% percent are male. This is so because most respondents are barangay nutrition scholars and female local officials. Majority (57%) of them has been in their respective jobs for one to 10 years; and the same percentage are high school graduates. The rest reached college (32%) and finished college (7%), respectively. Most (82%) have a net annual income of US\$1,2500 and below.

As to the respondents from LGUs, most (83%) of them are middle aged (41-50 age range). Average age is 42 and age range is 30-49 years old. Majority (67%) of them are male and has been in the job for 6-10 years (84%). Most (84%) of them also reached college or graduated from college and 17% even reached graduate level. Similar to the UGs, half them (50%) claimed they have an annual income of US\$1,250.00 and below.

As to the socio-demographic characteristics of the BIDANI staff, many (75%) of them are composed of relatively young (31-40) age and female (75%) and have been on their job longer than the LGUs. Many (75%) of them have been in their job from 16-to 25 years. As expected, many (75%) graduated from college and 25% even reached graduate level. The same percentage (75%) receive an annual income of US\$2,500.00-

US\$3,000.00.

**3.1.1 Awareness and Knowledge Level on BIDANI’s Programs and Activities**

Generally, the respondents have a “high” awareness levels on BIDANI’s programs and activities. Expectedly, BIDANI staff got the highest awareness level (100%), followed by the LGUs (67%) and UGs (50%). Other respondents from the LGUs have a “moderate” awareness (33%) and UGs (50%).

Similarly, the BIDANI staff got the highest (100%) knowledge level, followed by the LGUs (67%) and the UGs (65%). Other respondents from UGs got “moderate” (29%) and “low” (6%) while the rest of the respondents from the LGUs got “low” (33%).

**Table 1:** BIDANI respondents' attitude towards each other.

SUBSYSTEM	FREQUENCY						WTD. MEAN	QUALITATIVE DESCRIPTION	
	Favora ble	%	Fair	%	Unfa- vorable	%			
UGs(28)									
	UGs-UGs	21	75.00	7	25.00	0	0	3.88	Favorable
	UGs-LGUs	25	89.29	3	10.71	0	0	3.96	Favorable
	UGs- BIDANI	27	96.43	1	3.57	0	0	3.99	Favorable
LGUs(6)									
	LGUs- LGUs	6	100.00	0	0	0	0	4.5	Favorable
	LGUs-UGs	4	66.67	2	33.33	0	0	3.93	Favorable
	LGUs- BIDANI	6	100.00	0	0	0	0	4.67	Favorable
UPLB BIDANI(4)									
	BIDANI- BIDANI	4	100	0	0	0	0	4.75	Favorable
	BIDANI- UGs	4	100	0	0	0	0	4.5	Favorable
	BIDANI- LGUs	4	100	0	0	0	0	4.75	Favorable

**3.1.2 Attitudes**

All respondents of the BIDANI extension program had a “favorable” attitude towards their colleagues, LGUs and BIDANI staff. The “favorable” attitude among the subsystems of this program was probably due to the number of years the program has been serving the communities in the countryside. BIDANI has been in operation for 32 years now. The attitude of the LS (LGU) and BIDANI staff (4.67) and vice versa (4.75) got the highest “favorable” attitude rating. Thus, the “favorable” attitude towards all members of the extension system is expected. Table 1 summarizes the BIDANI respondents’ attitude towards each other.

**3.1.3 Respondents’ Perception on BIDANI’s Programs and Activities**

Similar to attitudes, perception was measured through a series of statements. Generally, all the respondents have “high” perception towards this program. The UGs’ perception of the program under study is “high” to “moderate”. The LGUs have also generally “high” perception of the BIDANIs programs and activities. Expectedly, the BIDANI staff has generally “high” perception of their programs and activities. Tables 2, 3 and 4 show the actors perception of the BIDANI programs.

**Table 2:** UGs perception on the BIDANI's programs.

STATEMENTS	RESPONSE					WTD. MEAN	DESCRIPTION
	1	2	3	4	5		
The programs are not difficult to practice.		8	8	11	1	3.18	Moderate
The programs conform to my existing practices and experiences.	0	1	10	12	3	3.65	High
Resources are available to implement in our area the programs we learned.	0	0	1	23	2	4.04	High
The benefits of applying the training program/s of BIDANI in my work can be easily seen.	0	0	0	25	3	4.11	High
All the training programs we learned are very useful. I can apply it in my work.	0	0	1	19	8	4.25	High
With BIDANI programs, I believe I can earn money from it.	8	8	5	7	0	2.39	Moderate

0-1.7 Low, 1.71-3.40-Moderate, 3.41-5.0 High

**3.2. DCRC Respondents’ Socio-Demographic Profile**

The respondents’ from UGs average age is 39 years. The youngest and the oldest are 25 and 61 years old, respectively. Almost all (97.5%) of the respondents are female and the same percentage (97.5%) reached or

graduated from college. Majority (57.5 %) of them have been relatively new in their respective jobs (1- to 10 years) but almost all (95%) have already attended the training course on “Daycare Administration and Operation”. Many (75%) of them receive an annual income of US\$2,500.00 and below.

**Table 3:** LGUs perception on the BIDANI's programs

STATEMENTS	RESPONSE					WTD MEAN	DESCRIPTIO N
	1	2	3	4	5		
The programs are not difficult to practice.				5		4	High
The programs conforms to my existing practices and experiences.	0	0	0	2	2	4.17	High
Resources are available to implement in our area the programs we learned.	0	1	2	2	0	3.67	High
The benefits of applying the modules we learned can be easily shown in our daily work.	0	0	1	5	0	3.83	High
All the programs we learned are very useful. I can apply what I learned even for only few families/pupils.	0	0	1	3	2	4	High
With BIDANI programs, I believe I can earn money from it.	0	1	2	3	0	3.17	Moderate

0-1.7 Low, 1.71-3.40-Moderate, 3.41-5.0 High

**Table 4:** BIDANI staff's perception of the BIDANI's programs.

STATEMENTS	RESPONSE					WTD. MEAN	DESCRIPTION
	1	2	3	4	5		
The programs are not difficult to practice.			1		3	4.5	High
The programs conform to my existing practices and experiences as a BIDANI staff.	0	0	0	3	1	4.25	High
Resources are available to implement in our area the programs we learned.	0	0	0	4	0	4	High
The benefits of applying the programs and activities can be easily shown in our daily work.	0	0	0	4	0	4	High
All the programs and activities are very useful to our partners in the local government.	0	0	0	0	4	5	High
With BIDANI programs, I believe I can earn money from it.	0	0	1	1	2	4.25	High



As to the LS, many (80%) of the respondents are middle aged. The youngest is 45 and the oldest is 53. Similar to the respondents from UG, many (80%) of them are female and have finished college. As to their educational attainment, all of them finished college and 40% have their graduate degrees. Half (50%) of them receive an annual income ranging from US\$2,500.00-US\$3,500.00.

Similarly, the RS respondents are all female, with post -graduate studies and relatively young. Half of them are below 40 years old and the other half are past 40 years old. Their number of years in the University however, varies. The youngest has been in her job for less than 10 years while the others range from 11 to 20 years. Many (75%) of them receive an annual net income of US\$5,000.00 and above.

### ***3.2.1 Awareness and Knowledge Level on DCRC's Programs and Activities***

Generally, the respondents have a "high" awareness levels on DCRC programs and activities. All the respondents have "high" awareness levels with UGs the highest (92.5%), LS (80%) and RS (75%). All with a weighted mean of 4 and above. Similarly, they also got "high" knowledge levels with RS the highest (80%) and both the UG and LS got 75%.

### ***3.2.2 Respondents' Attitude Towards Each Other***

The respondents' attitude towards and each other and their colleagues are found to be "favorable". The LS and RS got the highest weighted mean (4.43 each) towards their colleagues, followed by the RS' attitude towards the RS (4.17). The UGs' attitude towards the LS got the lowest mean (3.76), followed by towards their colleagues (4.08) and the RS (4.04). Similarly, the LS' attitude towards the UGs got also the lowest (4.2) and the highest is toward RS (4.8). As to the RS, they also have favorable attitude towards the UGs (4.3). Table 5 summarizes the DCRC actors' attitude towards each other.

### ***3.2.3 Respondents' Perception towards Each Other***

The UGs have "high" perception of the DCRC Program. The highest weighted mean was 4.65. Only the statement where they believe they can earn money from the training got the lowest perception (3.0).

Similar to the UGs, the LS too have a "high" perception of the DCRC with the highest mean of 4.8. The same statements measured their perception. The statement where they can earn money out of this program also got the lowest (3.6). As to the RS, they also have a "favorable" perception of their program. The highest mean (4.75) and the lowest is 3.25. The statement all the modules are very useful got the highest mean while the lowest was the same as the two groups of respondents mentioned earlier.

## ***3.3 MCCPC Respondents' Socio-Demographic Profile***

Many (82%) respondents from UGs are male, reached high school, and have an annual income of US\$1,250.00 and below (50%). More than one-fourth (32%) of them belong to the 31-40 age range. Almost the same percentage (27%); however, are in the 51-60 years age range and the rest was distributed to 21-30 (18%), 41-50

(14%) and 71-80 (4%).

**Table 5:** DCRC respondents' attitude towards each other.

SUBSYSTEM		FREQUENCY						WTD. MEAN	QUALITATIVE DESCRIPTION
		Favorable	%	Fair	%	Unfavorable	%		
UGs(40)									
	UGs-UGs	35	87.5	4	10	0	0	4.08	Favorable
	UGs-LGUs	24	60	15	37.5	0	0	3.76	Favorable
	UGs-UPLB DCRC	35	87.5	4	10	0	0	4.04	Favorable
LGUs(5)									
	LGUs-LGUs	5	100	0	0	0	0	4.43	Favorable
	LGUs-UGs	4	80	1	20	0	0	4.2	Favorable
	LGUs-UPLB DCRC	5	100	0	0	0	0	4.8	Favorable
UPLB (4)									
	UPLB DCRC-UPLB DCRC	4	100	0	0	0	0	4.43	Favorable
	UPLB DCRC-UGs	4	100	0	0	0	0	4.3	Favorable
	UPLB DCRC-LGUs	4	100	0	0	0	0	4.17	Favorable

As to the LS, half of them are male (50%), (50%) female and majority (75%) falls under the 41-50 age range. Similarly, majority (75%) finished their college degrees and 25% pursued graduate degrees. Majority (75%) of them receive and annual income of US\$2,500.00-3,500.00.

All respondents from RS are female and pursued graduate degrees. Age range however, is more varied. Less than half (40%) of them falls under the 21-30 age range, 40% under the 41-50 range and 20% falls under the 61-70 range. Less than half (40%) of them receives an annual income of US\$3,500.00-5,000.00. Another 40% receives US\$2,500-3,500.00 and 20% receives more than US\$5,000.00.

**3.3.1 Awareness and Knowledge Level on MCCCPC Programs and Activities**

The respondents from LS and RS have high have “high” awareness and knowledge levels. Awareness and knowledge levels were much lower among the UGs. This is expected since even the program existed for more than five years now, many UGs are not still aware on the existence of the center.

**Table 6:** UGs perception of the DCRC's training modules.

STATEMENTS	RESPONSE					WTD. MEAN	DESCRIPTION
	1	2	3	4	5		
The training modules are not difficult to practice.	7	7		10	16	3.5	High
The modules conform to my existing practices and experiences as a Day Care Worker.		1	2	14	23	4.5	High
Resources are available to implement in our area the modules we learned.	1	1	4	14	19	3.9	High
The benefits of applying the modules we learned can be easily shown in our daily work.				15	25	4.6	High
All the modules we learned are very useful. I can apply what I learned even for only few families/pupils.				14	26	4.7	High
With the training course, I believe I can earn money from it.	7	12	6	4	11	3	Moderate

**Table 7:** LS's perception on the DCRC's training modules.

STATEMENTS	RESPONSE					WTD. MEAN	DESCRIPTION
	1	2	3	4	5		
The training modules are not difficult to practice.				1	4	4.8	High
The modules conform to my existing practices and experiences as a social worker.	0	0	0	4	1	4.2	High
Resources are available to implement in our area the modules we learned.	0	0	0	4	1	4.2	High
The benefits of applying the modules we learned can be easily shown in our daily work.	0	0	0	4	1	4.2	High
All the modules we learned are very useful. I can apply what I learned even for only few families/pupils.	0	0	0	4	1	4.2	High
With the training course, I believe I can earn money from it.	0	0	2	3	0	3.6	High

**3.3.2 Respondents' Attitude towards Their Colleagues and Each Other**

All the respondents have “favorable” attitude towards each other and their colleagues. The RS have the highest (5) favorable attitude towards each other. This shows that this group has a very good working relationship with each other. This finding was similar to the RS of the DCRC and the BIDANI group. These groups also got the

highest favorable attitude towards their colleagues with a weighted mean of 4.75 and 4.43, respectively.

Aside from the favorable attitude towards their colleagues, the RS has also favorable attitude towards the LS and UGs. The same findings were found in both the UGs and LS. They all have favorable attitude towards their colleagues and each other.

**Table 8:** DCRC staff's perception of the DCRC's training modules.

STATEMENTS	RESPONSE					WTD. MEAN	DESCRIPTION
	1	2	3	4	5		
The training modules are not difficult to practice.	0	0	1	2	1	4	High
The modules conform to my existing practices and experiences as a social worker.	0	0	0	3	1	4.3	High
Resources are available to implement in our area the modules we learned.	0	0	0	3	1	4.3	High
The benefits of applying the modules we learned can be easily shown in our daily work.	0	0	0	2	2	4.5	High
All the modules we learned are very useful. I can apply what I learned even for only few families/pupils.	0	0	0	1	3	4.8	High
With the training course, I believe I can earn money from it.	1	0	0	3	0	3.3	Moderate

**Table 9:** MCCPC' respondents' attitude towards each other.

SUBSYSTEM	FREQUENCY						WTD. MEAN	QUALITATIVE DESCRIPTION
	Favorable	%	Fair	%	Unfavorable	%		
UGs (22)								
UGs-UGs	17		3		1		3.83	Favorable
UGs-LGUs	14		6				4.01	Favorable
UGs-UPLB	14		6				3.9	Favorable
LGUs(4)								
LGUs-LGUs	4						4.92	Favorable
LGUs-UGs	4						4.6	Favorable
LGUs-UPLB	4						4.83	Favorable
UPLB (5)								
UPLB -UPLB	5						5	Favorable
UPLB -UGs	2		2				3.36	Favorable
UPLB -LGUs	4		1				4	Favorable

**Table 10:** UGs perception towards MCCPC.

STATEMENTS	RESPONSE					WTD. MEAN	DESCRIPT ION
	1	2	3	4	5		
The programs of are not difficult to practice.	1	3	5	10	1	3.35	Moderate
The objectives of MCCPC conform to my existing practices and experiences.			1	14	3	4.0	High
Resources are available to implement in our area the trainings we learned.		3	5	8	4	3.60	High
The benefits of applying the trainings we learned can be easily shown in our daily work.			3	13	2	3.94	High
All the things I learned are very useful. I can apply in my work.	2		2	10	4	3.80	High
With the program, the consumers will benefit from it.	3	1	3	9	1	3.44	High

**Table 11:** LS' perception towards MCCPC.

STATEMENTS	RESPONSE					WTD. MEAN	DESCRIPTION
	1	2	3	4	5		
The activities of the program are not difficult to implement.				4	1	4.25	High
The objective of the MCCPC conforms to my existing practices and experiences.				4	1	4.25	High
Resources are available to implement in our area the objectives of the program.	1		1	2		3	Moderate
The benefits of benefits of this program can be easily shown in our daily work.				3	1	4.25	High
The program is very relevant and useful.					4	5	High
With the program, the consumers will benefit from it.					4	5	High

**3.3.3 Respondents' Perception toward Their Colleagues and Each Other**

Almost all respondents have high perception on the program. The UGs have “high” and “moderate” perception of the objectives and programs of the SPC-CPC with the highest weighted mean of 4.0. As to the RS, they too have a “high” perception of the program. Three of the six statements measuring perception got the highest score

(5). But similar to the LS, they too have apprehension as to the resources available to implement the program. This can be understood since there are many government programs with good intentions but unfortunately, the funds to implement it are not enough. This was reflected in the perception of both the LS and the RS.

**Table 12:** RS' perception towards MCCPC.

STATEMENTS	RESPONSE					WTD. MEAN	DESCRIPTION
	1	2	3	4	5		
The project is not difficult to "sell" to potential clients.		1		1	3	4.20	High
The program conforms to my existing practices and experiences in extension work.					5	5	High
The program can be easily implemented since resources are available to implement it.		2	2	1		2.8	Moderate
The benefits of establishing the MCCPC can be easily seen in the daily life of the end-users.			1	1	3	4.40	High
The program can be duplicated to other municipalities/cities.					5	5	High
With the extension program, I believe end-users will benefit from it.					4	5	High

#### 4. Frequency of Communication and Communication Flow Among and Between the Respondents

##### 4.1 BIDANI

Generally, there was a high level of intra-communication among all the respondents. BIDANI staff has had the highest frequency of communication (100% Often), followed by LGUs (83%) and UGs (61%). Inter-communication between the other members of the subsystem is lower. BIDANI staff who communicates “often” with LGU was only 75% and BIDANI to UGs for 50%. Similarly, communication frequency of LGUs to BIDANI is only 50% and LGUs- to UG was also 50%.

To the UGs, their communications were mostly initiated by themselves while their communication with the LGUS and the BIDANI staff were initiated by the barangay officials. As to the LGUs, communication was initiated by different personalities like the Municipal Planning Development Center (MPDC) staff, Municipal Nutrition Officer, Provincial Planning staff and others while their communication with UGs were initiated by some MPDC staff and BIDANI staff. Similar to the UGs, their communication with BIDANI staff was initiated by the League President and MPDC staff. Communication among the BIDANI staff and was initiated by the staff themselves. The same was found with their LGUs and UGs.

For all respondents of this program, the use of cellular phone was the most popular form of media. This was followed by interpersonal, telephone/fax and print. Almost all respondents from this program did not encounter conflict with their colleagues and other members of the extension program.

#### ***4.2 Frequency of Communication and Communication Flow Among and Between the Respondents of DCRC.***

There was a “high” level of intra-communication among all the respondents. Among the colleagues, the LS and RS respondents communicate often (100%) and 92.5 for UGs. There was however, lower level between the members of the subsystem. The UGs to LS communicate often (82.5% and UGs to RS (17.5%). Same findings were revealed between LS to UGs (80%) and LS to RS sometimes (80%). As to RS and UG, the communication frequency was lower. RS to LS is sometimes (25%) to rarely (50%) and RS to UGs is sometimes (50%).

The cellular phone and interpersonal communication were the most popular medium used by all respondents. This result was confirmed in the study conducted by Gailhard et. al (2015) in their study on the role of interpersonal communication to the farmers’ adoption of a technology [127]. Furthermore, communication played vital role in the generation and utilization of technology in the Philippines as confirmed in the studies of Tan, (1994) [7:189]; Navarro (1992), [8:155]; Narciso (2000) [178] and Tejada (1997), [10:190]. Other media used include telephone/fax, print, radio and electronic mail.

#### ***4.3 Frequency of Communication and Communication Flow Among and Between the Respondents of MCCPC.***

There was a high level of intra-communication among all the respondents. Among the colleagues, the RS respondents communicate often (100%) followed by UGs (82%). The LS got the lowest percentage (50%) of who among them communicate often. The same percentage they rated on their frequency of communication with the UGs and RS.

As to the flow of communication among and between the components, half (50%) of the UGs claimed they were the ones who initiated their communication often with their fellow UG. Similarly, the LS claimed they initiated their communication with their colleagues. However, they rarely initiate communication with the UGs and the RS. As to the RS, all (100%) of them claimed they initiate their communication with their colleagues often. Majority (60%) also claimed they are the ones who initiated communication with the LS.

Almost all respondents communicate with the other actors of the program through their cellular phones. Aside from the cellular phone, the telephone was also very popular. This was followed by interpersonal, email and print.

## **5. Relationship of Variables**

### ***5.1 BIDANI***

For the respondents on BIDANI, variables tested were the relationship between their socio-demographic characteristics, which included age, sex, number of years in the job, highest educational attainment and annual net income, and their frequency of communication, level of awareness and knowledge on BIDANI's programs and activities, attitudes towards colleagues and each other and perception on the BIDANI programs and activities.

Results showed that the UGs' socio-economic characteristics were not significantly related to their level of awareness. However, it was found out that sex is significantly related to communication frequency with their colleagues but not significantly related to LS and RS. This means that the female respondents which comprise of 89% communicate more often than their male counterparts. Similarly, sex was found to be significantly related to the perception on BIDANI's programs and activities. Other socio-demographic characteristics were found to be not significantly related to the other variables considered. As to the LS and RS, there were no significant relationships found in their socio-economic characteristics and other variables considered.

## **5.2 DCRC**

The variables studied in DCRC are the same as in BIDANI. It was found out that the UGs' educational attainment and annual income has significant relationships with their attitude towards the LS. Almost all (97.5%) respondents from the UGs reached college or graduated from college. Aside from that, there were no more significant relationships found in their socio-economic characteristics and other variables considered among the LS and RS.

## **5.3 MCCPC**

Similar to BIDANI and DCRC, the socio-demographic variables of the MCCPC and the other factors that assumed to affect it were analyzed. It was found out that there were no significant relationships found in this program.

## **6. Conclusions**

Results of this study present a picture of extension systems where interactions among the actors in the extension program are favorable. As extension systems, these actors are interconnected and interdependent to attain the programs' objectives. There is a "favorable" attitude towards each other; "high" perception towards the programs; and "high" to "moderate" awareness and knowledge levels on the programs and activities covered in this study.

While there were no significant relationships found between the respondents' socio-demographic characteristics and their perception of the program to the utilization of the knowledge they gained from the extension programs, the favorable interaction that was found in this study may have an effect to programs' continued operation. Thus, making them relevant and beneficial to the communities these programs continue to serve until now.



## **Acknowledgement**

The author wishes to acknowledge the UPLB's Office of the Vice Chancellor for Research and Extension for the basic research grant; Dr. Virginia R. Cardenas, Professor, Dr. Madeline M. Suva, Professor and Dr. Mimosa C. Ocampo, Professor, who evaluated the project; and to her colleagues at the Department of Social Development Services, College of Human Ecology, University of the Philippines Los Banos, Philippines.

## **References**

- [1] About the University of the Philippines. [www.edu.ph](http://www.edu.ph). March 2014 [October 2, 2014]
- [2] N. G. Roling "Agriculture Knowledge and Information System".[www.agriculturenetwork.org](http://www.agriculturenetwork.org). 2009 [November 20, 2014]
- [3] K. Knickel, G. Brunori, S. Rand and J. Proost. "Towards a Better Conceptual Framework for Innovation Processes". *The Journal of Agricultural Education and Extension*. Vol. 15, no. 2, pp 131-146, 2009
- [4] E.S. Visco, and ME.T. Mendoza. "Adressing the Goals of Human Ecology Through Responsive Extension Programs". *The Journal of Human Ecology*. vol 1, pp 32-41, 2012.
- [5] B. Coffey B and T. O'Toole . "Towards an Improved Understanding of Knowledge Dynamics in Integrated Coastal Zone Management: A Knowledge Systems Framework". *Conservat Soc* [serial online] 2012 [cited 2015 Apr 5];10:318-29. Available from: <http://www.conservationandsociety.org/text.asp?2012/10/4/318/105513>
- [6] I. U. Gailhard, M. Bavarova and F. Pirsher . "Adoption of Agri-Environmental Measures by Organic Farmers: The Role of Interpersonal Communication". *The Journal of Agricultural Education*, vol. 21, pp 127-148, 2015.
- [7] A. S. Tan. "A Systems Approach to the Analysis of Functional Interaction In An Extension Project in the Philippines". Ph.D. dissertation, University of the Philippines Los Banos, Philippines, 1994.
- [8] M. J. Navarro. "Communication Analysis of the Generation and Utilization of Ethanol Technology in Two Research and Development Institutes". PhD Dissertation, University of the Philippines Los Banos, Philippines, 1994
- [9] N.V. Narciso. "Communication Analysis of the Development and Utilization of a Nutrition Software". PhD Dissertation, University of the Philippines Los Banos, , Philippines 2000.
- [10] G. Tejada. "Communication Analysis of the Utilization of Cotton Integrated Pest Management Technology in the Philippines". PhD Dissertation, University of the Philippines Los Banos, Philippines, 1997.