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**ASSESSING THE USEFULNESS OF PHILIPPINE  
RICE EXTENSION MATERIALS**

A Thesis in  
Agricultural and Extension Education

by  
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## ABSTRACT

Knowledge products (KPs) as a traditional extension delivery method and the emergence of the Open Academy for Philippine Agriculture (OPAPA) as ICT-mediated extension strategy in Philippine rice agriculture were examined. This study sought to understand the factors that are related to the usefulness of Philippine rice extension materials with regard to the two delivery methods to farmers, extension agents, barangay officials, and Municipal Agriculture and Fishery Council (MAFC) chairs. The study used concepts from the uses and gratifications theory (U&G theory), non-gratification factors from salient theories, and sociodemographic variables to examine the usefulness of KPs and OPAPA.

The study used a descriptive-correlational design. A questionnaire was developed and organized into two sections to address KPs and OPAPA. A total of 135 respondents were interviewed from February to March, 2008 in Northern Luzon, Philippines. Of the 135 respondents, 131 were aware and had used KPs while 110 were aware and had used OPAPA.

With regard to uses and gratification factors, findings indicated that SOCIAL gratification was highly correlated with usefulness of KPs while SOCIAL and FUTURE PLANS gratifications had substantial significant positive relationships with usefulness of OPAPA. Further, results showed that low to substantial significant positive relationships were found between gratification variables and usefulness of KPs and OPAPA. On the other hand, CONTENT was found to have the highest positive significant correlation with usefulness of KPs and OPAPA compared to the remaining non-gratification

variables that showed low to moderate significant positive relationships with usefulness of KPs and OPAPA. Contrary to expectation, sociodemographic variables were found to have little or no relationships with usefulness for either KPs or OPAPA.

The study findings revealed that there are no significant differences on the gratification and non-gratification factors associated with usefulness of KPs and OPAPA among the respondents. Additionally, the findings suggested that when gratification variables are satisfied by KPs and OPAPA and Philippine rice extension ensures that non-gratification factors are considered, then perceptions on the usefulness of KPs and OPAPA increased.

Implications and recommendations were presented in consonance with the findings of the study. Recommendations address 1) policy, 2) actions needed from Philippine Rice Research Institute (PhilRice) and 3) further research.

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-David Thomas (1776-1859)

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## **Chapter 1**

### **Introduction**

Agriculture contributes one-third to the Philippine economy (PhilRice, 2001) and rice farming is the major occupation of 2.4 million rice farmers of the almost 80 million population in 2002 (PhilRice, 2007). Rice farming contributes nearly 134.5 million pesos (almost 3 million dollars), which is 16% relative to agriculture in 2006 at current prices (PhilRice, 2007). With this, rice has a significant role in the economy and politics of the country (PhilRice, 2001). Thus the Philippine Rice Research Institute (PhilRice), a government-owned and controlled corporation attached to the Department of Agriculture (DA), was created through an Executive Order in 1985 to administer rice research and development. The technology transfer and extension activities of PhilRice complement the efforts of Agricultural Training Institute (ATI), which is also under DA and has the mandate for the national agricultural extension and education (PhilRice, 2007; ATI Online, 2007).

The Philippine Government aims to achieve rice self-sufficiency despite traditional barriers of land, infrastructure, and geography (Dawe, Moya and Casiwan, 2006; Sebastian and Bordey, 2005). With rice as the staple food of 85% Filipinos and 11% of household income is spent on rice, the government has intensified its efforts to increase rice production to meet the demands of a fast-growing population. Furthermore, rice is the source of 35% of the calorie intake of the Filipino diet. In 2006 alone, per capita rice consumption is almost 119 kilograms (261.8 lbs) (PhilRice, 2007).



In 2006, rice production totaled 15.3 million metric tons (MMT) with an average yield of 3.68 MT for all ecosystems (PhilRice, 2007). However, the growth in rice production was offset by a higher population growth rate (2.22% from 1990-2006) which contributed to a rice shortage of more than 1.7 MMT in 2006 (PhilRice, 2007). The rice shortage has usually been imported from other rice-producing countries (PhilRice, 2001; PhilRice, 2006; Dawe, 2006).

When it comes to farm size, the area under rice cultivation is getting smaller due to land conversions and inaccessibility of water supplies for potential rice-farm lands. In 1992, rice area constituted 34% of nearly 10 million hectares (almost 25 million acres) of total agricultural area. However, in 2002, rice-growing areas declined from 34% to 26% of the total agricultural area (PhilRice, 2007). Consequentially, the average size of a rice paddy farm dropped from 1.45 ha (3.58 acres) in 1992 to 1.14 (2.82 acres) in 2002. Moreover, with the average size of the farm, rice scientists projected that by 2030, an average yield of 4.8-5.0 MT/ha (2.471 acres is equal to one hectare) is needed. This yield is necessary to cope with the growing demand of feeding the Filipinos which as of August 2007, numbered close to 89 million (National Statistics Office, 2008). The current average rice yield of 4.10 MT in 2006 was below the target average yield (PhilRice, 2007). Thus, smaller rice areas, lower rice yields, and rice-related infrastructure problems pose significant challenges to the development and growth of the national rice agriculture system.

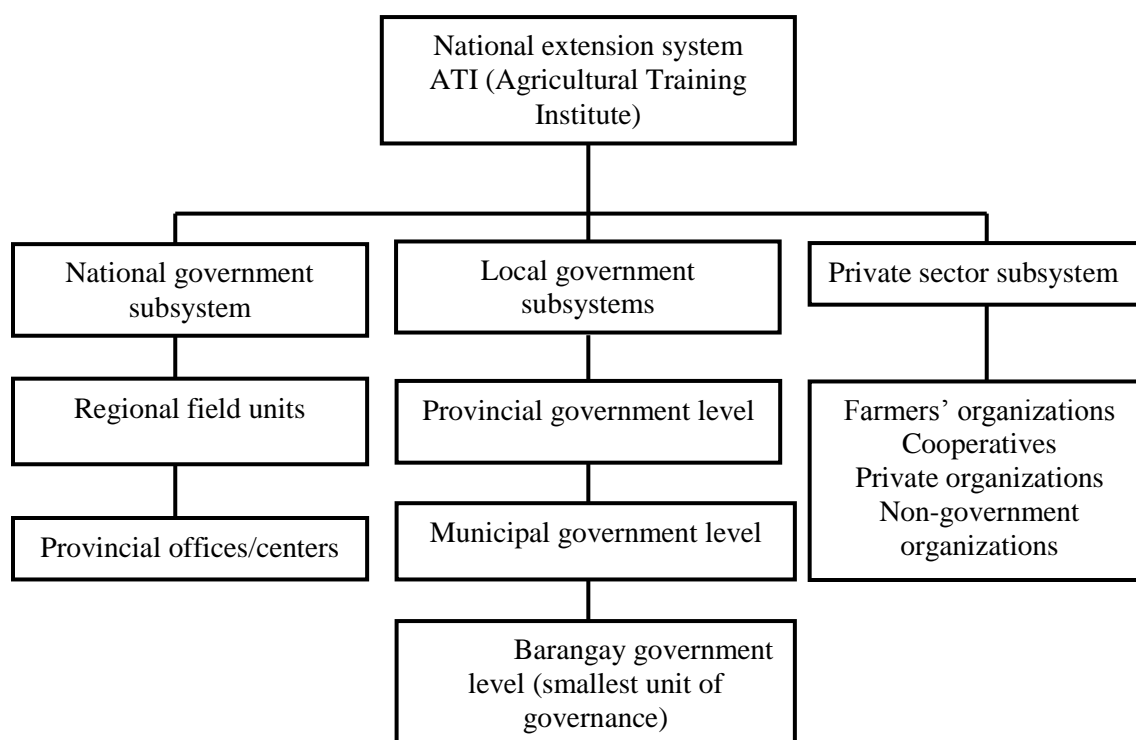
With the above mentioned challenges faced by the national rice agriculture, amplification of the importance of rice production in the Philippine economy and culture should parallel strengthening of efforts in the local and national research, development

and extension (RD&E) systems. Currently, a need for extension to be revitalized especially within rice agriculture exists. Balisacan and Sebastian (2006) suggested that efforts should be refocused on extension and communication processes within the national rice agricultural network. Thus, the need to strengthen rice extension and communication activities is critical to meet the mandates of the Philippine government.

### **Philippine Extension**

Flor (2006) has identified four factors that impact the Philippine agricultural service: 1) abolition of the national agricultural extension system, 2) decentralization or devolution of extension services, 3) top-down perception of agricultural extension, and 4) the rivalry between research and extension in the agricultural technology process.

In 1997, the Philippine national extension system was decentralized and reorganized through Republic Act 8435 (RA 8435) to involve local government units (LGUs) who are to supervise and facilitate agricultural extension and training services for farmers. RA 8435 is also known as Agriculture and Fisheries Modernization Act of 1997 with ATI as the mandated central agricultural extension agency. As extension services became decentralized, several issues and concerns that directly affected farmers surfaced. These issues are directly related to prioritization of agricultural concerns at the municipal level and operational fund constraints that limit extension service capacity (Saliot, 2006). Figure 1-1 shows the current organizational chart of extension in the Philippines.



Source: Encanto, V. S. (2000).

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Figure 1-1: Organizational Chart of Philippine Agricultural Extension

Flor (2006) said that in response to the limitations brought about by the four factors identified, various extension activities were implemented to efficiently diffuse information regarding agricultural innovations in the Philippines. However, as a result of the fragmentation of agricultural extension services, no comprehensive collaboration and solidification of various efforts were undertaken by the different government institutions and agencies across the country to promote agricultural technologies (ATI Online, 2006).

With the new challenges in Philippine agriculture and the emergence of information and communication technologies (ICTs), collaboration and networking of

government agencies and institutions were intensified to widen the coverage of extension services and to deliver quality agricultural information (Flor, 2006). Hence, in 2003, the Open Academy for Philippine Agriculture (OPAPA) was established through a collaboration of institutions, state colleges and universities, and private and foreign organizations spearheaded by PhilRice (Flor, 2006).

In the next section, two delivery strategies used in Philippine rice extension specifically by PhilRice are discussed in the context of this study. These two delivery mechanisms used to promote rice technologies are traditional rice information extension and OPAPA as the emerging method of rice information extension.

### **Traditional Rice Information Extension**

Traditional rice information extension is dependent on the largest proportion of the country's agricultural extension force. The decentralized agricultural extension force consists of a network of LGUs in 79 provinces, 84 cities and 1,525 municipalities, and more or less 42,000 barangays, the smallest unit of governance in the Philippines. Rice extension on the LGU network is specifically a need-based extension for areas where rice is considered a major crop (Saliot, 2006). Thus, major rice-producing regions and provinces are the areas in which concentration of rice information extension occurs.

Strategically, PhilRice collaborates with 57 agencies, 70 seed centers, and existing LGU agricultural planning and development offices to reach rice farmers throughout the country. Since PhilRice has no mandate for national extension, the institution's primary extension role is to communicate latest rice technologies and

techniques to the ATI, LGUs and allied networks. Within PhilRice, the Technology Management and Services (TMS) Division works closely with the Development Communication (DevComm) Division to serve as the primary PhilRice departments for extension information delivery. TMS deals with rice production training, farm demonstrations, and other rice extension activities while DevComm produces rice extension materials to popularize the latest rice science and technologies. Specifically, the rice extension materials disseminated by PhilRice through DevComm are labeled as knowledge products (KPs). Knowledge products are classified as print or audio materials. Table 1-1 lists PhilRice KPs.

Table 1-1: List of PhilRice Knowledge Products

<b>Print Materials</b>	<b>Audio Materials</b>
Posters	Video/VCDs
PhilRice newsletters	Radio/broadcast releases
Billboards	CDs
Pamphlets/leaflets/Q&A/ technobulletins/ PhilRice calendar	
Newspaper/magazine clippings	
Books	
Flipcharts	

TMS and DevComm Divisions are dependent on the contributions of rice scientists to come up with science- and research-based rice information. With the information, staff from the TMS and DevComm Divisions design appropriate rice technology transfer methodologies. Table 1-2 lists the common primary methods employed to disseminate agricultural information.

**Table 1-2:** Traditional Methods Used by PhilRice to Disseminate Rice Information to Rice Clientele\*

<b>Interpersonal Approach</b>	<b>Group Approach</b>	<b>Mass Approach</b>
Contact with fellow farmers (e.g. key farmer leaders)	Farmers' classes	Radio programs**
Contact with extension agents	Educational tours	Television programs**
Field demonstration	Information caravans	Printed leaflets
Contact with research institutions	Field days	Fairs and exhibits
Contact with agricultural dealers	Farmers' field schools	Video or film shows**
	Achievement days	
	Indigenous media	

\*The Table is adapted from Encanto, V. S. (2000) since common methods in Philippine agricultural extension are shown and PhilRice has used similar approaches.

\*\*These methods can be treated as ICTs but are widely distributed compared to OPAPA components.

With this discussion on the traditional rice extension channel, the next section discusses OPAPA as the emerging delivery strategy.

### **OPAPA: The Emerging Mode for Agriculture Information Delivery**

OPAPA is a network of public and private institutions that provide education, training, extension, and communication in agriculture. The network serves clients such as researchers, extension workers, farmers, and support service providers (e.g. farm organizations, chemical companies, etc). The Academy is a linkage of national, local and international organizations that employs and taps the potentials of current infrastructures in the government and private sectors, including their content and information databases, in an open environment (Flor, 2006).

Flor (2006) discussed OPAPA as a collaborative effort to unite the disjointed links and disunited efforts of the Philippine agricultural extension system. With OPAPA, agricultural information and communication, through harnessing ICT potential, can help bridge the identified knowledge gaps among agricultural stakeholders: extension workers, R&D centers, farmers, and markets. OPAPA was created to organize and deliver information primarily to extension agents and farmers. OPAPA consisted of three concepts: eExtension, Distance Learning, and eCommerce. Hence, the Academy is considered a foundation and a doorway to the digital world (ATI Online, 2006).

The eExtension in OPAPA is a website that deals with current information and technology in Philippine agriculture. The Distance Learning component ensures continuous learning for extension field workers regardless of location through OPAPA's portal offering online degree courses in agriculture. The last component, eCommerce, is an interactive communication set-up that updates the farmers of potential markets for farmers' produce. Thus, the Academy makes available online content, learning, interactivity, and advisory services. Further, farmers can also access information and connect to markets through the OPAPA website (Flor, 2006).

Table **1-3** provides a summary of OPAPA services under PhilRice responsibility. The detailed profile and collaborating agencies involved in OPAPA partnership is provided in Chapter 3.

Table 1-3: OPAPA eExtension Service Components for Rice Stakeholders

Basic ICT computer training	Farmers' call/text center (+63920-911-1398)
Rice doctor	E-technobulletins
Pinoy farmers' Internet (www.openacademy.ph)	Radio+Internet+SMS messaging
Rice cyber clinic	Rice knowledge bank
e-Learning modules	Mobile internet bus
Access provision	E- fact sheets/technotips

### Statement of the Problem

PhilRice extension and communication materials are disseminated using KPs, the traditional rice information extension, and OPAPA as an emerging mode of delivery. The traditional modes of dissemination are categorized into three: 1) interpersonal approach, 2) group approach, and 3) mass approach, see Table 1-2. PhilRice KPs are considered part of the traditional mass approach. On the other hand, the emerging mode of disseminating mass rice information and extension is exemplified by OPAPA and eExtension serves as the counterpart to KPs within OPAPA. Evaluation of KPs and an initial assessment of OPAPA as rice extension delivery strategies should be undertaken to understand the usefulness of rice extension materials in the Philippines. In this regard, the research questions are: How useful are the delivery methods of rice extension and communication materials in the Philippines to farmers, extension agents, and rice-related individuals like barangay officials and Municipal Agriculture and Fishery Council (MAFC) chairs who are involved in rice agriculture? What factors influence the usefulness of rice extension materials?



### **Rationale/Need of the Study**

With the delineation of the traditional and emerging modes of rice information delivery, the need exists to assess the usefulness of rice extension and communication materials in the Philippines. The advent of OPAPA in the Philippines and the continuation of KPs in delivering rice information raise an important question that involves examining the preferred information channels, factors influencing the channels, and how shifts in mass communication use can benefit the national extension system specifically in relation to rice agriculture. In doing so, assessment of the Philippine rice extension and communication materials can contribute to a more effective and efficient rice information delivery system. Additionally, assessment of mass communication approaches currently used will add to the existing body of knowledge on how ICTs can serve as vehicles in reaching development goals. On the other hand, evaluation of the existing modes of information delivery in rice extension will determine the merit, worth, and continuation of the traditional methods.

Assessment of the usefulness of rice extension and communication materials can provide valuable feedback to PhilRice and help strengthen the linkage between PhilRice as a source of information and its connections with the different stakeholders. With this assessment, feedback regarding rice information benefits strategic planning and delivery of rice information that will be relevant and responsive to the current and changing needs of rice information users. Overall, these assessments will facilitate PhilRice's commitment to disseminate timely and accurate rice information through effective and efficient modes of information transfer to various rice stakeholders.

### **Purpose of the Study and Research Questions/Objectives**

The overall purpose of the study was to assess the usefulness of rice extension materials with regard to the delivery strategies used specifically in Northern Luzon, Philippines. The specific research questions of the study were:

- 1) What are the sociodemographic characteristics of rice extension material users?
- 2) What factors influence the usefulness of knowledge products as a traditional mass approach in disseminating rice information?
- 3) What factors influence the usefulness of OPAPA as an emerging delivery strategy of rice information extension?
- 4) How do respondent groups (farmers, extension agents, barangay officials and MAFC chairs) evaluate the usefulness of KPs and OPAPA?
- 5) Is there a relationship between sociodemographic variables and usefulness of rice extension materials?

To answer the research questions (2-5) on the usefulness of rice extension materials, a conceptual framework was developed, see Figure 1-2. Based on a review of literature, 1) sociodemographic, 2) uses and gratification, and 3) non-gratification variables are associated with usefulness of information media. The variables under the different categories as shown in Figure 1-2 were examined in the study.

The conceptual framework was mainly influenced by individual psychological factors included in uses and gratifications theory (U&G theory). These factors are: 1) social, 2) entertainment, 3) acquisition of new knowledge, 4) surveillance, 5) peer

pressure, 6) future plans, and 7) fame (Charney and Greenberg, 2002). The factors within the U&G theory provided a starting point for exploring the reasons/motivations behind the individual usage that affect usefulness of that specific medium.

On the other hand, non-gratification variables covered the factors that can help create favorable environment/conditions in accessing the media (Rice and Webster, 2002; Bijker, Hughes and Pinch, 1987; Brown, 1981). Non-gratification variables provide the necessary external components such as access, content, and readability of the media to achieve positive perceptions on the usefulness of the media by the intended audience. Non-gratification variables are also concerned with factors internal to the individual such as how they perceived the medium's characteristics, what attitudes do information users have toward the task requirements of the media, and to what extent they relied upon the media. In effect, non-gratification variables can provide favorable or threatening conditions that may affect uses and usefulness of the media.

Sociodemographic variables provide the profile of the information material users. The inclusion of sociodemographics in communication research is essential specifically with studies on uses and access of new information strategies.

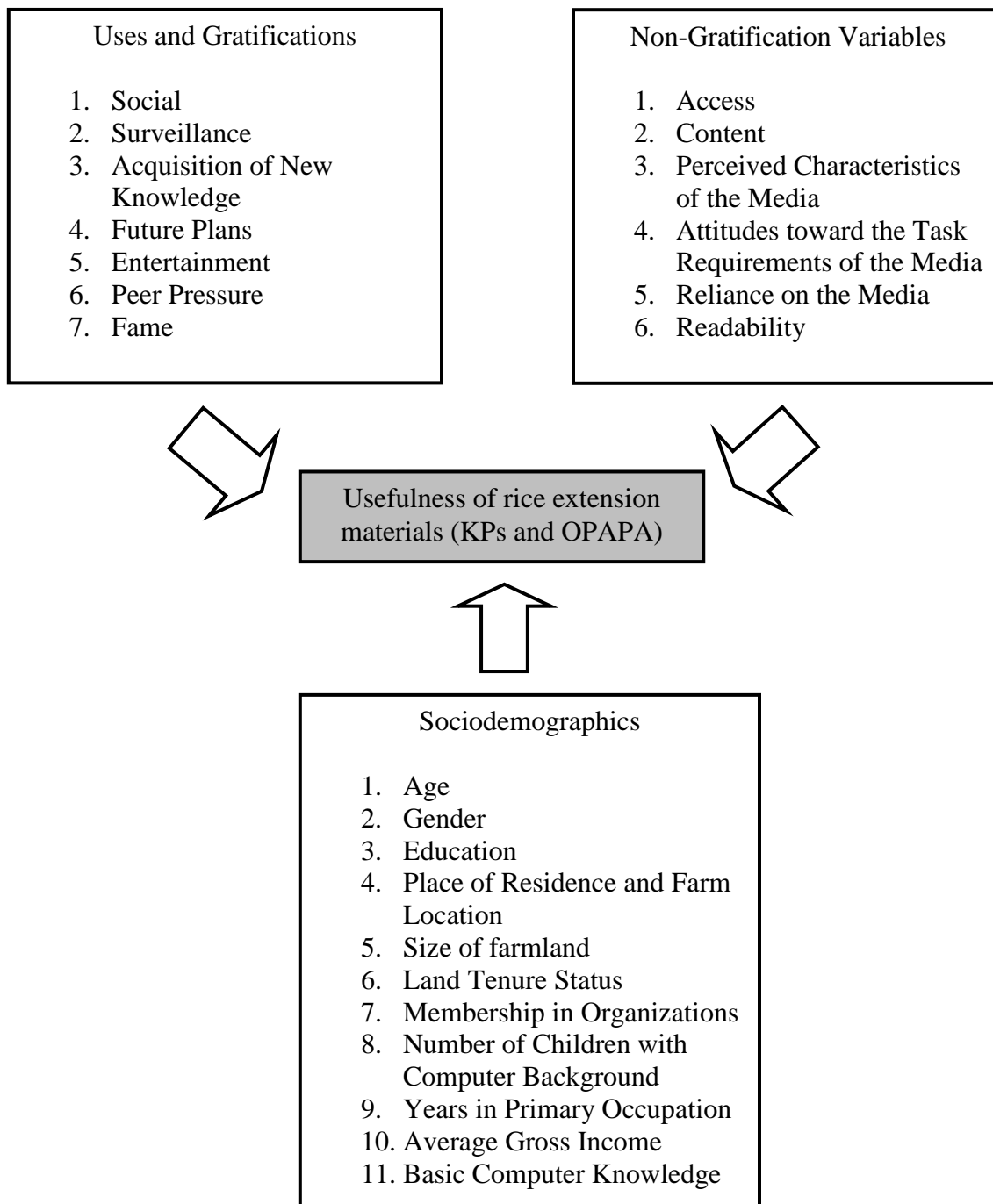


Figure 1-2: Conceptual Framework for the Study

### **Limitations of the Study**

Two limitations/issues related to generalizability should be noted in the study. First, generalizability of result findings will only be applicable to Philippine areas, specifically to the Northern part Luzon where PhilRice-Batac is located. However, common patterns on the relationship of the independent variables (see Chapter 2) and the usage of rice extension materials may be identified for Philippine rice extension areas where knowledge products and OPAPA are disseminated/present. Second, the generalizability of the result findings is dependent on whether the sample is randomly drawn. Since an exhaustive population is used in the study, the findings can be generalized to the individuals who were part of the PhilRice-Batac trainings. On the other hand, the data respondents also serve as a convenient, non-random, purposively-drawn sample of the total population who underwent rice production trainings with OPAPA components in the Philippines.

### **Operational Definitions**

**Rice extension materials** are categorized into KPs (traditional: print and audio media) and OPAPA (e-extension) which address rice crop's stages (i.e. land preparation, crop establishment, nutrient management, water management, pest management, harvesting, post-harvest).

**Usefulness of rice extension materials** refers to how rice extension materials are being accessed, utilized, and perceived by stakeholders (farmers, extension agents,

barangay officials and MAFC chairs) to understand/solve rice-related issues; measured through respondents' ratings on 11 Likert scale questions.

**Knowledge products** are print media and audio media (e.g. publications, rice guides, techno-bulletins, posters, etc.) published by PhilRice.

**OPAPA** refers to the Open Academy for Philippine Agriculture with 3 foci: a) e-extension, b) distance learning, and 3) eCommerce. Throughout the research, OPAPA mainly refers to the e-extension part available to rice clients and managed by PhilRice.

**PhilRice** is the agency mandated to perform rice research and development. PhilRice disseminates KPs and spearheads OPAPA's development especially the e-extension component.

**Rice farmers** are individuals who plant rice, located within Northern Luzon in the Philippines, exposed to KPs, and have undergone rice production trainings with OPAPA components.

**Extension agents** are individuals involve in transferring rice technologies to farmers, have direct contact with farmers but are also consumers of rice information from PhilRice, and are located within the study areas.

**Barangay officials** are elected officials of the smallest units of governance, *barangays*, within the study province who are related/in-charge with agricultural activities and budget in their locales of jurisdiction, exposed to KPs, and have undergone rice production trainings with OPAPA components.

**MAFC chairs** are municipal government officers who coordinate agriculture and fishery council activities, exposed to KPs, and have undergone rice production trainings with OPAPA components.

**Awareness of KPs and OPAPA** refers to knowledge of existing KPs and OPAPA by respondents but differ from **Usage of KPs and OPAPA** which refers to actual use.

**Uses and gratification** variables, individualistic and psychological in nature, refer to factors that influence the usefulness of knowledge products. These variables are: 1) social, 2) entertainment, 3) acquisition of new knowledge, 4) surveillance, 5) peer pressure, 6) future plans, and 7) fame.

**Non-gratification factors** are not individualistic/psychological in nature. These factors are 1) access, 2) content, 3) perceived characteristics of KPs or OPAPA, 4) attitudes toward task requirements of KPs or OPAPA, 5) reliance on media, and 6) readability of KPs or OPAPA.

**Access** refers to possible information sources and contact points of KPs and OPAPA's availability that may determine usefulness of KPs and OPAPA.

**Content** refers to the relevance/substance of KPs and OPAPA as perceived by target users that may affect usefulness of rice extension materials.

**Perceived characteristics of KPs and OPAPA** are considered to be distinct qualities of KPs and OPAPA that influence their usefulness to survey respondents.

**Attitudes toward the task requirements of KPs and OPAPA** refer to how respondents view the distinct qualities of KPs and OPAPA and may influence usefulness of KPs and OPAPA.

**Reliance on the Media** refers to the extent respondent groups depend on either KP or OPAPA.

**Readability** refers to how the information is presented to respondents for ease of understanding that may affect usefulness of KPs and OPAPA.

**Sociodemographics** refer to distinct characteristics/qualities of respondents: a) age, b) gender, c) education, d) place of residence and farm location with regard to possible information sources, e) size of farmland, f) land tenure status, g) membership in organizations, h) number of children with basic computer/Internet knowledge, i) years in primary occupation, j) average gross rice farm income, and k) basic computer knowledge.



## **Chapter 2**

### **Review of Related Literature**

This chapter is an assemblage of literature related to the study. Specifically, the chapter is organized into: 1) background on the role of ICTs in extension, 2) discussion on the influence of sociodemographics associated with research questions 1 and 5, 3) an overview of theories that can serve as the foundation to examine factors related to research questions 2 and 3, 4) literature discussing clients' preferences of information channels that can help answer research question 4, 5) a discussion on the major variables in the study, and 6) a summary of the literature review.

### **Purpose of the Study and Research Questions/Objectives**

The overall purpose of the study was to assess the usefulness of rice extension materials with regard to the delivery strategies used specifically in Northern Luzon, Philippines. The specific research questions of the study were:

- 1) What are the sociodemographic characteristics of rice extension material users?
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- 4) How do respondent groups (farmers, extension agents, barangay officials and MAFC chairs) evaluate the usefulness of KPs and OPAPA?
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### **Role of Information and Communication Technologies (ICTs) in Extension: Background**

Ezell (1989) recognized the presence of technological trends that may affect extension, specifically in the United States. One of these trends is the convergence of communication technologies that enable what she labeled “communication networks.” She considered this convergence greater than print media. Consequently, the presence and convergence of communication technologies were foreseen by the author as a challenge on the part of extension professionals when it comes to delivery of educational programs. A similar observation was made by Israel and Wilson (2006). The authors said that direct communication with clients is the basis of educational efforts; however, changes occurring in society and technology have affected programs through various communication channels that are useful to directly or indirectly reach clients. One example of the change in communication technologies is what Hills (1998) has observed of the popularity of cellular phones once they were small and easy to carry around. Given the various alternatives in delivering educational programs, different channels/methods are employed to reach clients (e.g. Escalada, Heong, Huan, and Mai, 1999 on traditional mass media in promoting rice pest management).

King and Boehlje (2000; see also King and Boehlje, 2001) discussed salient points regarding the use of the information communication technologies (ICTs) in the United States Cooperative Extension, particularly the Internet to better serve extension clientele. Their position paper emphasized that Extension was no longer the sole source of information and outreach, and thus Extension should use media that would broaden its reach. The important points raised in the article were: distribution to access, reach versus richness, emergence of search engines, and the suggestion of a new e-CES (Cooperative Extension Services) with its brand-based credibility. Emphasis on the odds against the existing Cooperative Extension was heightened if reinventions were neglected to accommodate new ways of extension delivery with the use of the Web. Hence, the authors suggested possible collaborations among private and corporate partners. Additionally, agricultural extension should be looked at within the context of competitiveness, productivity, efficiency, and quality (McDonald, 2001).

In the context of market competitiveness, another article by King and Boehlje (2002) discussed the establishment of e-Extension/USA to build a business model. The paper was based on an effort to reinvent Extension as a knowledge-based marketplace competitor in order to provide a strategy to help ensure the long-term survival of Extension. The strategy identified was to set up e-Extension. e-Extension is a virtual Extension Service, which aims to surpass the existing supply-oriented Extension distribution system with a demand-centered anytime, any place, and any source access system. The authors further suggested that e-Extension build on the foundations of the World Wide Web and other telecommunications technologies. e-Extension would attract

new customers, new information sources, and developmental talents to surmount traditional barriers.

On the same theme, another study (Davidson and Ahmed, 2003) discussed a similar situation for agricultural extension and education especially regarding the trend towards privatization and the potential of technologies. Having ICTs serve as tools for extension was stressed in an FAO paper (2004) published during the 27<sup>th</sup> FAO Regional Conference for Asia and the Pacific. The article affirmed that given the problems of extension agents in having direct contact with farmer-stakeholders, weak linkages between research and extension, and lack of agent mobility, ICTs offer excellent possibilities for extension. Flor (2006) highlighted the use of ICTs in the Philippines especially with a devolved and decentralized extension system. Also, Rhoades, Irani and Telg (2005) suggested that extension should partner with media web sites to reach a broader public.

However, literature on the worldwide digital divide (e.g. Elbert and Alston, 2005; Drori and Jang, 2003; DiMaggio, Hargittai, Neuman, and Robinson, 2001) offered caution in harnessing the potential of ICTs. Elbert and Alston (2005) assessed the United States Cooperative Extension's role in bridging the digital divide, an observed reality when it comes to IT adoption and is referred to by Cyber Outreach (2002, cited in Elbert and Alston, 2005) as the "gap that separates those who have access to technology and the Internet and those who do not" (no page number). One of the recommendations was to build strategic partnerships with local community groups. Another example was from Grieshop, Delgadillo, Flores, and Ramirez (2003) who conducted a study on farm workers' access to telephone technology in California, USA. They discovered that farm

workers appear to be at a disadvantage when it comes to telephone access. Further, the authors stressed that access to cellular phones was limited due to contract requirements.

Despite the literature mentioned on digital divide, more studies recommended that the impending challenges for agricultural extension and education are perceived to be solved through the use of ICTs to reach a larger portion of the agricultural stakeholders and at the same time for extension to remain competitive, productive, effective and efficient in offering quality programs.

In the next section, electronic extension will be discussed as a new information channel.

### **Electronic Extension: A New Information Channel**

In a study that dealt with technology transfer through the Internet, Risdon (1994) described the linkage that integrates the adoption of new science knowledge and the role of Internet services in aiding the process. The researcher presented a flow-system model to promote awareness and understanding on the role of the Internet within the extension community. The role of the Internet was discussed in each of the six phases of technology transfer: 1) technology requisition, 2) technology innovation, 3) technology confirmation, 4) technology marketing, 5) technology application, and 6) technology evaluation.

In a paper funded by FAO, Bie (1996) suggested links between the efficiency and effectiveness of development communication and the role played by the Internet to achieve development goals. The author outlined the connections of rural development and the Internet. Furthermore, the paper made a key recommendation which focused on

the diffusion of the Internet, strategies for rural and agricultural communities, and participation of agencies to hasten the process. Involvement of agencies is seen as a decisive factor since they directly serve communities through advice, project support, research, extension, and training. The author pointed out that the cornerstone of such a strategy is capacity-building activities for rural and agricultural organizations to enhance locally-managed Internet use, tools and resources. McClelland (1986) recommended that extension agents using computers should have improved conditions and technical skills in their instructional programs as a form of capacity-building.

A specific example is a study regarding entomology extension, VanDyk (2000) pointed out that new opportunities exist for immediate presentation and collection of information in an Internet-based system. However, organization and categorization of information for timely retrieval remained a challenge. He added that metadata strategies, computer literacy, and integration of the Internet with current workflow paradigms promise to change entomology extension in the near future.

In the United States, Harder and Lindner (2008) studied county extension agents' adoption of eXtension, an outgrowth of King and Boehlje's (2000) efforts. Study findings revealed that respondents were in the early stages of the innovation-decision process. The study recommended practices that may aid extension agents in the adopting the technology.

The next section presents literature that highlight the influence of sociodemographics since sociodemographics were associated with usefulness and uses of a certain information channel.

### **Influence of Sociodemographics**

Literature that assesses the usefulness of information technologies relative to different sociodemographic characteristics such as education, race, gender, occupation, geographic location, income, language, information technology literacy, disabilities, household composition, access, size and ownership of farm, and participation in organizations/networks that serve as important stratification variables are reviewed (Losh, 2004; Wilson, Wallin, and Reiser, 2003; Shelley, Thrane, Shulman, Lang, Beisser, Larson, Mutiti, 2004; Bryant, 2003; Lin, 1998; McNeal, 1998; Dickinson and Sciadas, 1998; Roe and Broos, 2005; Howell and Habron, 2004; Israel and Wilson, 2006; Rice and Webster, 2002; Caldwell and Richardson, 1995; Lin, 2002; Atkin, 2002; Atkin, 1995; Reagan, 1987).

Based on an American study from 1983-2002, a substantial digital gap occurred between gender, educational achievement, and occupational strata (Losh, 2004). In this study, women had less access to computers in the workplace. Only women in clerical work showed more access to computers than women in any other types of occupation. Also, professional women in fields like secondary education and medical support lagged behind other well-educated workers. High school educated individuals are left behind in computer home ownership. Additionally, the author discussed that those who participated in the labor force are more likely to own a computer at home.

Also on the same theme but with the inclusion of racial and geographic variables, a study in North Carolina (Wilson et al., 2003) found that rural residence, race, and gender considerably influenced computer and Internet access in homes. Further, gender

and rural residence are heavily tied to income and education. However, the authors said that the racial digital divide cannot be explained by socioeconomic variables. The authors suggested further research to understand how users' experience, attitudes and skills, and the benefits from the Internet are influenced by different methods of Internet access. They also recommended examining the resources and infrastructure in a community and their interaction with resources, skills, and attitudes of individuals that may assist or impede IT adoption.

Shelley et al. (2004) summarized literature discussing variables such as income, education, race, age, language, information technology literacy (ITL) and disabilities as significant predictors of IT access and familiarity. The study mainly focused on race, education and attitudinal measures related to information technology classified into three variables: desire for computer skills, technology information power, and computer use. The authors discussed that in order for the individual to benefit from the technology, literacy is important. They proposed that attitudes toward technology have a direct impact on digital citizenry together with differences in race and education. They found that the desire for computer skills increased among respondents with lower levels of educational attainment; respondents with higher levels of education were more likely to use computers both at home and work; and interest in developing computer skills was positively associated with digital citizenship.

Another study (Bryant, 2003) discussed the gender gap in digital use in an assessment of Australian farms. Findings revealed that gender was associated with IT relations, women's occupational location, and participation in agriculture.



When it comes to household composition, the literature (e.g. Lin, 1998 and McNeal, 1998) suggested that the presence of PCs in households with children is greater than households without children. There is evidence that children in households influenced the adoption of computers. It has also been argued that there is an association between income and computer adoption. However, income is influenced by education. Dickinson and Sciadas (1998) indicated that household composition predicts PC adoption. The study also pointed out that urban households were better equipped than their rural counterparts.

Roe and Broos (2005) examined computer use and attitudes among the adult population of Flanders in Belgium. They found that a higher percentage of respondents had never used computers and non-usage was associated with negative attitudes. In the analysis, the authors found that negative attitudes can be predicted by education, age, and gender.

In their study, Howell and Habron (2004) discovered that age, education, income, and size of farm were associated with agricultural landowners' preference for communication strategies related to watershed conservation. Younger and more educated farmers appreciated computers and Internet use more than those who were older. Those who had higher income were more likely to use the Internet for communication.

Israel and Wilson (2006) added that participation in local networks like membership in organizations and community events can pave the way for forming trust-relationships and consequently, a reliance on the sources by the target information users.

Rice and Webster (2002) enumerated characteristics of individuals that affect new media usage. These characteristics are: 1) technology experience, i.e. self-efficacy on

computers, and 2) age and education. The authors argued that older individuals are more invested in the current status and environment. Hence, older people have a hard time learning new technologies.

In contrast, other studies indicated no relationship between sociodemographic variables and preference for information strategies. Age, education, size of farming operation, and number of information sources were found to have no influence on farmers' preferences (Caldwell and Richardson, 1995). In addition, Lin et al. (2002) discussed the role of demographics in adopting innovations and suggested that demographics were less important when the innovations has gone past the early adopters. Atkin (1995) and Reagan (1987) found that demographics are inconsistent in predicting adoption of particular technologies.

The next section will look at theoretical models that discuss factors that are associated with the usefulness of communication technologies and are beyond sociodemographic characteristics.

### **Theoretical Approaches: An Overview**

The evolution of societies is propelled by the progressive adoption of an innovative idea or invention (Rogers, 2003). In the 19<sup>th</sup> century, the diffusion of communication technology innovations had far-reaching implications in the home, workplace, organizational settings, agriculture, and facets of human activities. Theoretical frameworks have been developed, modified, and revisited to look at the specific impacts of communication technologies (Lin and Atkin, 2007). Several studies

have offered a distinct collection of current theoretical, empirical, and legal analyses for a broader and dynamic understanding of communication technology.

First, five theoretical perspectives are offered by Rice and Webster (2002) to explain influences on media adoption and use. These perspectives are: 1) individual, 2) rational, 3) organizational, 4) technology, and 5) social. They said (p.204),

“Individual factors often reflect persons’ technology-related skills, such as their computer skills. Rational factors relate to the situation and reflect objective characteristics of the specific incident, such as message equivocality or access to the medium that may constrain or guide behavior. Organizational influences relate to such factors as management support and organizational structures. Objective technology influences relate to such factors as transmission quality, while perceived technology influences relate to more subjective characteristics of the technology such as ease of use. Social factors relate to the social environment and reflect such forces as other’s attitudes and symbolic cues.”

Second, DiMaggio et al. (2001) categorized theoretical frameworks of Internet usage into five areas: “1) inequality (the “digital divide”), 2) community and social capital, 3) political participation, 4) organizations and other economic institutions, and 5) cultural participation and cultural diversity” (p. 307).

On the other hand, Caplan, Perse, and Gennaria (2007) offered three theoretical explanations on computer mediated technology and social interaction. The first perspective is “uses and gratifications theory,” which is connected to motives and uses of communication technologies. The second approach is the diffusion of innovation tradition focusing on the attributes of the technologies. The third paradigm is the social identification model that explains the role of technologies in maintaining social relations.

At the individual level, Rogers (1995), as a follow-up to the diffusion of innovation theory, posited that one’s willingness to try new products affects one’s

adoption of technological innovations at the individual level. Lin and Atkin (2002) have compiled several reasons for adopting innovation based on various literatures. For individuals, the reasons are: 1) innovativeness, 2) information seeking, and c) involvement, d) drive, e) perceived needs, and f) personal interests. However, they pointed out that one's familiarity with the innovation as an adoption factor is often a "chicken-and-egg" issue.

Rice and Webster (2002) discussed how diffusion research examined relative advantage and complexity as characteristics of an innovation. They also stressed how the diffusion literature suggested that one's communication networks like opinion leaders and informal interactions influence media diffusion. The authors contrasted it to media choice literature that views interactions among message characteristics, task, peer attitudes, and use as variables in media choice and performance. On the other hand, implementation of information systems as an approach to explain adoption, diffusion, and use of new media forwarded management policies, technology design, ease of use, and user participation in design as the variables that affect media use, satisfaction and effects.

A book on adoption and uses of communication technologies edited by Lin (2002) offered a comprehensive paradigm to look at communication technologies. The paradigm categorized factors into 1) use/aspect of the technologies, 2) system, 3) technology, 4) audience, 5) social, and 6) adoption factors. Uses and gratifications (U&G) theory is included in the use factors/aspect of the technologies in gratifying social psychological needs.

The next segment will focus on uses and gratifications as an approach/theory to explain uses and motives that offer associations with usefulness of media.

## **Uses and Gratifications Theory: Factors Associated with Media Use**

When one is interested in the individual reasons behind one's use of communication media, uses and gratifications (U&G) theory can be one approach to understand these reasons and drives (Lin and Atkin, 2002; Ruggiero, 2000; Lin, 1999; Charney and Greenberg, 2002; Katz, Blumler and Gurevitch, 1974).

Katz, Blumler, and Gurevitch (1974) were the first to present uses and gratification theory as part of their seminal work. They explained and looked at (p.510),

“1) the social and psychological origins of 2) needs, which generate 3) expectations of 4) the mass media or other sources, which lead to 5) differential patterns of media exposure (or engagement in other activities) resulting in 6) need gratifications, and 7) other consequences, perhaps mostly unintended ones.”

Ruggiero (2000) argued for broader theoretical models that include U&G when he revisited U&G in the 21<sup>st</sup> century. The author argued that U&G should be accepted as a legitimate theory rather than as an approach. He also documented how U&G is deemed as a critical theoretical approach in the initial stages of each new mass communication medium like newspapers, radio, television, and the latest, the Internet. Also, he recommended exploring the interpersonal and qualitative aspects of mediated communications.

As suggested by the U&G theory, different audiences' needs are satisfied by different media. Lin (1999) pointed out that delivery methods are chosen by clients based on expected or past usefulness in satisfying their needs. The researcher (Lin, 1998) found that newspapers primarily serve the need for surveillance by users. Also, it has been found that users of newspapers express attitudes that are favorable towards computer

usage. However, perceptions on media content and the motives of the users or audience affect actual media adoption choices (Lin and Atkin, 2002). Another study done by Kaye (1998) found that entertainment, social interaction, and escape factors were correlated with hours spent surfing the internet.

A comprehensive study was done by Charney and Greenberg (2002) which offered several variables that are connected to uses and gratifications of the Internet: 1) social, 2) entertainment, 3) acquisition, 4) surveillance, 5) pass time diversion, 6) peer pressure status, 7) future, 8) identity, 9) fame, 10) aesthetic. The authors came up with these variables after a thorough literature review and qualitative pilot test asking college students about their Internet motives. They found that “keeping informed” overpowered all other factors. The authors recommended that using the set of items identified under the “keeping informed” factor can provide an assessment and insights on individual use. However, the authors pointed out that the “keeping informed” factor may be due to the sample used in their study which was university students who primarily treated the Internet as an information source. One thing stressed by the authors was that usage of the Internet was not very different when it comes to motivations in using other media.

In another study done by Perse and Courtright (1993), 649 adult respondents were asked how well 12 mass media and communication channels satisfy 11 communications needs. These channels ranged from television to music. Communication needs include (p.494):

1) to relax, 2) be entertained, 3) to forget about work and other things, 4) to have something to do with friends, 5) to learn about self and others, 6) to pass time away, 7) to feel excited, 8) to feel less lonely, 9) to satisfy a habit, 10) to let others know that one cares about their feelings, and 11) to get someone to do something for the individual.

In their preliminary analysis, they found that the computer was seen by respondents as unable to satisfy any communication need while print media was seen as connected to learning needs but not social, arousal, or companionship needs. Knowing these normative images of communication channels, one has to bear in mind that computers were not as available in 1993 as they are today. However, this study was different since the sample used was not composed of college students and hence, this population provided realistic insights into the needs of adults when dealing with communication channels. The study also reinforced the notion that different mass media audiences are aware of communication channel alternatives based on the perceived normative images they hold.

Authors discussing U&G theories explained that use factors can include a range of the audience's cognitive, affective, and behavioral responses. Moreover, Lin (2002) suggested that a set of perceptions can be developed based on the following (p.451): "a) whether the expected reward attached to the technology's use is realized, b) the level of psychological gratification received, and 3) their control over the use experience and the attention and interest the use experience generates."

Atkin (2002) said that motives behind media use decisions can be the same. However, motives vary with regard to actual use and adoption of the technology. If different motives are associated with the actual use of the technology, then distinct motives of those who are not adopting the technology should also be examined to cater to their needs through the innovation.

### **Salient Concepts from Other Theories**

Salient concepts from other theoretical models may also help evaluate associated factors/variables regarding the usefulness and usage of media. Bijker et al. (1987) offered helpful conceptualizations through perceived attributes and perceived task requirements of the media as factors affecting media use/behavior. Bijker et al.'s (1987) conceptualizations had similarities to social information processing (SIP) theory (Hirt and Limayem, 2000; Walther, 1996; Fulk, Steinfield, Schmitz, and Power, 1987) which is a different approach that offers concepts related to media characteristics and required task specificity of the media. The framework combines how individuals perceived the media and the task associated to its usage. Rice and Webster (2002) enumerated factors that are related to perceived media characteristics and beliefs. These factors are: 1) perceived media richness, 2) relative advantage, 3) compatibility, 4) trialability, 5) communicability, 6) complexity, 7) ease of use, 8) voluntariness, 9) result demonstrability, 10) image, 11) usefulness, 12) effectiveness, 13) perceived accessibility, and 14) flow. The authors recommended testing any portion of their proposed framework.

Another factor is access which is significantly associated with preferences for computers and internet or other types of information dissemination. Brown (1981) confirmed that the use of one information channel is affected by the availability of an access point to that channel by particular audience group. Markus (1994) said that access and response from a significant number of users is a significant influence. Hence, adoption and use are influenced by access and reliability of the medium.



Another study done by Irani (2000) used the Technology Acceptance Model (TAM) and discussed prior experience and perceived usefulness as factors that influence adoption of Internet communication tools by agricultural audiences. Her research pointed out that when respondents had relevant prior experience, they had positive perceptions of the usefulness of technologies. As a consequence, the author reported that prior experience and positive perceptions toward usefulness of the technologies are associated with more likely usage of the Internet communication technologies. Saga and Zmud (1994) even suggested that when users are involved in the development process of the technology, the experience has positive effects on users' knowledge and consequently on their beliefs about the usefulness and intentions to use the technology.

The next section discusses clients' preferences for information channels.

### **Clients' Preference of Information Channels**

A study by Silk, Sherry, Winn, Keesecker, Horodynski, and Sayir (2008) assessed the effectiveness of three delivery methods relative to nutrition education. The three methods were Web site, pamphlets, and computer games. The authors found that when it comes to women, the participants in the study, the Web site performed best for the particular audience and for the specific topic on nutrition education. Also, the computer game may not be more beneficial than traditional methods (like the pamphlet they used) when the audience does not have the necessary computer skills. However, the authors noted that these three methods have the potential to reach particular groups.

Trede and Whitaker (2000) studied Iowa's beginning farmers. The authors found that beginning farmers favored on-site instruction, single meetings on specific topics, and unbiased information from public institutions. Further, new instructional technologies like the Internet were not rated as highly as traditional technologies. A qualitative study (Licht and Martin, 2006) on the preference of Iowa's producers found that radio programs and consultations were more popular than other mass media methods. The authors recommended that the Internet should be used in agricultural and extension education as a supplemental source of information. In another study, Howell and Habron (2004) found that agricultural landowners preferred written materials while computer and Internet methods were the least preferred. The authors' results suggested that even with the presence of the Internet, agricultural landowners still preferred traditional or written information. However, Lin and Atkin (2002) noted that the Internet can complement other media, technologies, and behaviors rather than displace them.

With regard to agricultural news, another study (Wood-Turley and Tucker, 2002) found that a lower percentage of agricultural media readership preferred electronic news. This finding is similar to that of Suvedi, Campo, and Lapinski (1999) which reiterated that web-based information is one of least popular sources for farmers. Caldwell and Richardson (1995) found that most of the farmers included in their study preferred the combination of fact sheets and audio cassettes.

In a study, Nelson and Trede (2004) cited Whitaker and said that extension professionals and beginning farmers held differing perceptions. The authors said that extension professionals perceived that the Internet will be highly useful while beginning farmers who highly rated radio and newspaper rated Internet further down the list. On

web access, Wiersma (2007) in his study on the impact of Small Grains, a web site, suggested that since web access is not popular, promotion of the site in other media is advisable. Hence, complementary use of different media should not be neglected by those disseminating the information.

Israel and Wilson (2006) found that various information methods are used during the adoption process. The authors' example centered on using mass media to create awareness while traditional methodologies such as field days and demonstrations enable target adopters to test and confirm information. They added that complementary use of traditional and emerging information strategies would widen the reach of a particular information source. Thus, audience analysis plays an important role in selecting effective and efficient delivery method (Radhakrishna, Franklin, and Kessler, 2003; Laughlin and Schmidt, 1995).

### **Major Issues/Variables, Methods, and Procedures**

The major issues to be examined in the study are related to assessing the usefulness of rice extension materials in the Philippines through two delivery strategies, namely: 1) PhilRice's knowledge products as traditional methodologies, and 2) OPAPA as e-extension. Sociodemographics found to be related to the usefulness of rice extension materials are included in the research. Also, the U&G theory is used to identify motives and gratifications that are directly related to the usefulness of extension materials. Further, salient concepts derived from other theoretical models are included to look at

variables that influence usefulness of extension materials beyond sociodemographic variables and individual motives and gratifications.

With the discussion on the variables gathered from literature, a conceptual framework was developed for the study. In doing so, a combination of the concepts offers a broad foundation to understand the conditions and situations specific to Philippine rice agriculture, a developing country with an agricultural base. Figure **2-1** shows the conceptual framework for the study.

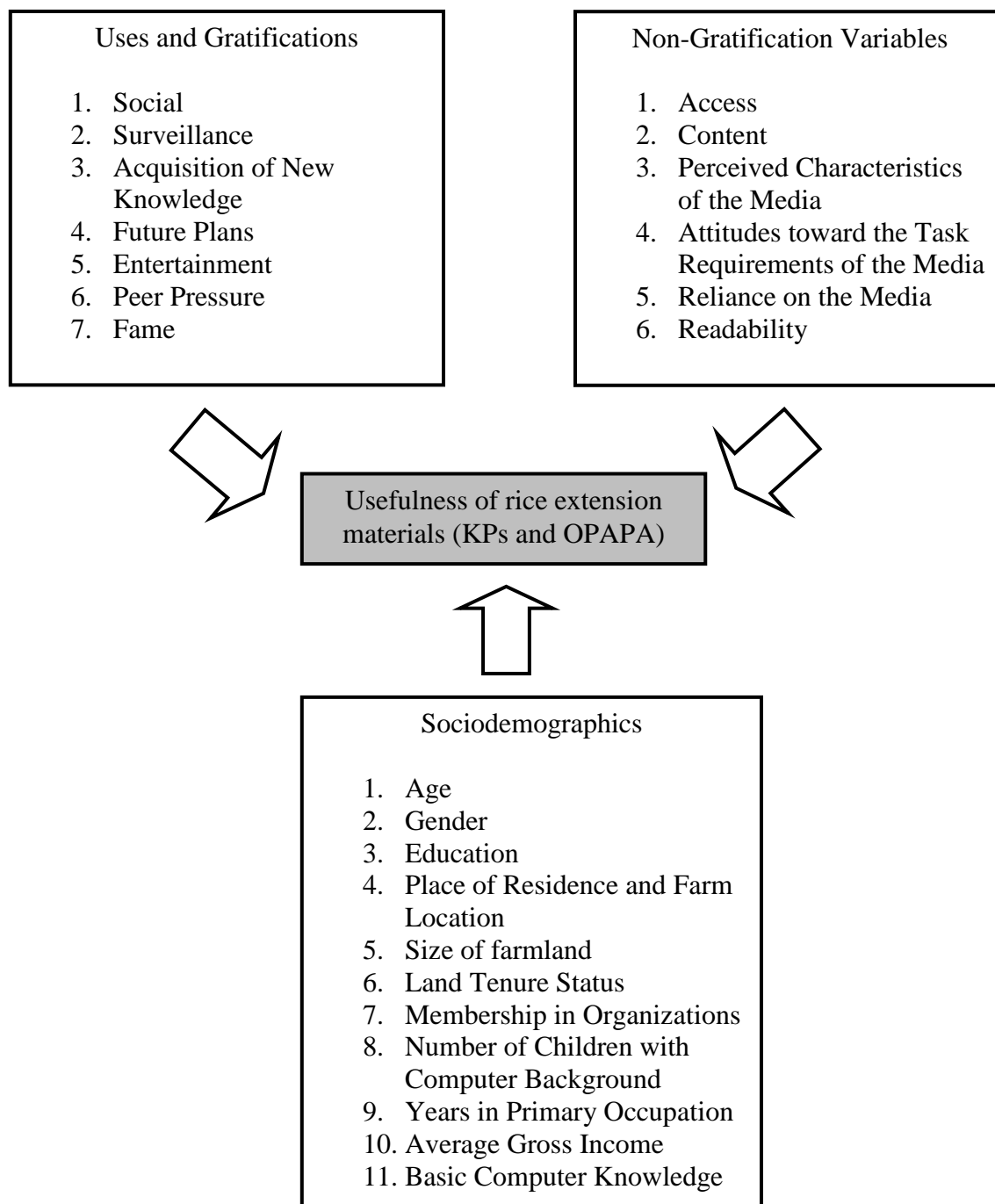


Figure 2-1: Conceptual Framework for the Study

## Summary of Literature Review

The literature review has identified several empirical studies that provide a roadmap on how to approach the assessment of the usefulness of traditional and ICT-mediated extension materials. However, no studies have focused on ICT-mediated extension or on assessment of the usefulness of extension materials in a developing country like the Philippines.

Assessing the usefulness of rice extension materials, KPs and OPAPA, in the Philippines presented a challenge. The review of literature has suggested numerous variables and theories that may be helpful in assessing the usefulness of KPs and OPAPA strategies. The influence of sociodemographic variables should be included to profile extension material users. The literature acknowledged the wide array of sociodemographic variables as fundamental when studying information strategies/delivery methods.

The literature also presented the need for studies that investigate factors beyond sociodemographics in order to identify social psychological factors that influence uses and usefulness of extension materials. A number of studies have provided motives/gratification factors behind an individual's usage to measure how extension materials satisfy the user's needs. Therefore, it is crucial to evaluate gratification factors and provide varied uses of the extension materials such that extension information sources like PhilRice is cognizant on how to effectively disseminate and promote information on agricultural innovations.

To provide a holistic study to assess the usefulness of extension materials, the literature also identified salient factors that can be considered as non-gratification variables. Non-gratification variables may impede the uses and usefulness of the information strategy/delivery. Hence, salient concepts and variables from different theoretical models were reviewed identifying those that affect usefulness of a communication channel/delivery beyond sociodemographics and motives/gratifications of the individual user.

With the variables identified by various theoretical models, few studies explored all adoption variables and the hierarchies of the adoption factors that are associated with usefulness of extension materials. Hence, this research attempts to include major adoption variables related to usefulness of information delivery strategies.

## **Chapter 3**

### **Research Methodology**

This chapter discusses the research methodology used in this study. This includes 1) partnership overview of OPAPA, 2) research design, 3) population and sample, 4) instrument development, 5) instrument validity, 6) instrument reliability, 7) approval by Penn State ORP, 8) survey administration and data collection, and 9) data analysis.

### **Purpose of the Study and Research Questions/Objectives**

The overall purpose of the study was to assess the usefulness of rice extension materials with regard to the delivery strategies used specifically in Northern Luzon, Philippines. The specific research questions of the study were:

- 1) What are the sociodemographic characteristics of rice extension material users?
- 2) What factors influence the usefulness of knowledge products as a traditional mass approach in disseminating rice information?
- 3) What factors influence the usefulness of OPAPA as an emerging delivery strategy of rice information extension?
- 4) How do respondent groups (farmers, extension agents, barangay officials and MAFC chairs) evaluate the usefulness of KPs and OPAPA?
- 5) Is there a relationship between sociodemographic variables and usefulness of rice extension materials?



### **OPAPA: Organization and Partnership Overview**

As a collaborative effort of different public and private agencies involved in the OPAPA, each has distinct functions and roles in the maintenance and continuation of the OPAPA initiative. The agencies are key players, making OPAPA primarily a government-funded program with support from private entities. OPAPA is not a product of legislation but of collaborative processes initiated by PhilRice in 2003. The three major components of OPAPA are spearheaded by different collaborative agencies like the University of the Philippines Open University (UPOU) for distance learning, PhilRice for eExtension, and other agencies for eCommerce.

OPAPA is not a formal organization but a virtual community of collaborating organizations. Flor (2006) enumerated the following objectives for OPAPA: 1) use ICT to provide online web-based services to extension workers and farmers, 2) tap ICT infrastructure and network backbones to provide an open learning environment, 3) organize experts and digitize all available information and data in agriculture to make them accessible to farmers, and 4) link policymakers, scientists, markets, businesses, organizations, and farming communities in an open environment using ICT (no page number).

Flor (2006) enumerated the key players participating in the project and their major roles (no page number):

*Philippine Rice Research Institute (PhilRice)*. OPAPA is a conceptualization of PhilRice. The agency also initiated the implementation of the OPAPA Academy.

*International Rice Research Institute (IRRI)*. IRRI serves as the international link for OPAPA to other agricultural research systems.

*Department of Science and Technology (DOST)*. Under this line department of the executive branch of government is the Advanced Science and Technology Institute (ASTI). ASTI maintains, administers, and makes available to OPAPA the Philippine Research, Education and Government Information Network (PREGINET) infrastructure. PREGINET is part of the Asia Pacific Advanced Network (APAN), an initiative of the Japanese government that provides Asian research and education institutions with free bandwidth access to the Internet's research and education backbone.

*Bureau of Agricultural Research (BAR)*. BAR is the Department of Agriculture's coordinating body for agricultural research.

*Agricultural Training Institute (ATI)*. Established in 1986, ATI replaced the Bureau of Agricultural Extension. ATI is a network of national, regional, and provincial farmers' training centers operated by the Philippine Department of Agriculture (DA).

*Philippine Carabao Center (PCC)*. PCC is DA's national carabao research institute.

*Philippine Council for Agriculture, Forestry, Natural Resources Research and Development (PCARRD)*. PCARRD coordinates all agriculture-related research conducted in the Philippines inclusive of government R&D agencies, state colleges and universities. It operates the eFarm Consortia composed of state colleges and universities combined with Farmers' Information and Technology Service (FITS) run by local government units (LGUs).

*International Crops Research Institute for the Semi-Arid Tropics (ICRISAT)*. The idea for an open academy for farmers was introduced by ICRISAT to PhilRice in 2003. ICRISAT is based in Hyderabad, India. ICRISAT is one of the Consultative Group on International Agricultural Research (CGIAR) Centers.

*University of the Philippines Open University (UPOU)*. UPOU is UP's Cyber-campus. The academic institution is tasked with the capacity building of OPAPA staff on open and distance learning strategies and techniques.

*Central Luzon State University (CLSU)*. CLSU is the zonal agricultural university for Luzon and is under the Philippine national agriculture education system.

*Pampanga Agricultural College (PAC)*. The provincial agricultural college for Pampanga under the Philippine national agriculture education system.

*Isabela State University (ISU)*. The provincial agricultural university for Isabela under the Philippine national agricultural education system.

*University of Southern Mindanao (USM)*. The regional agricultural university for Southern Mindanao under the Philippine national agriculture education system.

*SMART Communications*. The first and arguably the largest mobile phone provider in the Philippines, SMART makes available OPAPA's last mile link to local government units and farmers associations (Flor, 2006).

### **OPAPA Programs**

The Academy has initiated eight major programs and services (Flor, 2006). The programs and services offered and which are undertaken collaboratively are:

- *The K- Agrinet.* K- Agrinet is a knowledge network of three major agricultural networks. The knowledge network is maintained by PhilRice, PCARRD, and the Development Academy of the Philippines (DAP). The objective of the center is to consolidate the information and communication technology for development (ICT4D) initiatives of the line agencies mentioned and is directed at servicing enterprising agricultural communities.
- *eLearning Modules.* OPAPA designs, develops, and packages elearning modules with the technical guidance of OPOU. The modules aim to update and inform extension workers.
- *Training of Extension Workers.* Online and face-to-face training on web tools and distance learning to upgrade the competencies of agriculture extension workers are carried out by PhilRice and UPOU. The training recognizes the importance of extension workers in diffusing information and technologies to farmer-clients. Training is also a way for agricultural technicians to be updated with the latest rice science and technology.
- *Farmers' Call Center.* The call center is a 24 hour text messaging-driven helpdesk that began in 2004 with the use of cellular phones. Cellular text messages from farmers are one way to provide expert consultation services on agricultural technology. The objectives of the Call Center are: 1) to link experts, agricultural extension workers, and farmers through the use of cellular text messages; 2) to inform extension workers and farmers on technology updates; 3) to address queries of extension workers and farmers, particularly on rice production technology; and 4) to link farmers to markets through text messaging.

- *Radio+Internet+SMS (cellular text messages)*. A link-up was arranged with several provincial radio stations to expand the scope of the Farmers' Call Center and to involve the radio broadcast formats of the current agricultural technology system. At the end of a radio broadcast, farmers are encouraged to provide feedbacks through text messages/Internet. On the next broadcast, subject matter specialist will answer the topics raised through feedback.

- *Access Provision*. Connectivity and bandwidth problems, access to low-cost high speed Internet through the use of standard to fabricated antennas, and low-cost transmitters are addressed and started in extension offices, research agencies and Community eCenters. Furthermore, OPAPA in partnership with SMART Communications has provided last mile internet service connectivity to reach sixteen local government units and farmers' organizations.

- *eLearning Platform*. VCLASS elearning platform, a learning management system (LMS) developed by the Asian Institute of Technology, is also a component of the project to train agricultural extension workers on web development. The VCLASS LMS include 1) content development, 2) uploading, 3) management, 4) user training, 5) enrollment instruction, and 5) assessment/testing.

- *Rice Cyber Clinic*. The clinic is a cyber component of OPAPA that allows farmers to be involved in multi-video conferencing with rice experts.

The programs and components of OPAPA were explained by Flor (2006) in a case study submitted and presented to the International Seminar on the Contribution of Tertiary Agricultural Education to Learning and Development in Rural Asia. However,

the case study did not discuss the impacts of OPAPA since the project was only in its initial phase. Table 3-1 provides a summary of OPAPA services.

**Table 3-1: OPAPA Service Components for Rice Stakeholders**

Basic ICT computer training	Farmers' call/text center (+63920-911-1398)
Rice doctor	E-technobulletins
Pinoy farmers' Internet (www.openacademy.ph)	Radio+Internet+SMS messaging
Rice cyber clinic	Rice knowledge bank
e-Learning modules	Mobile internet bus
Access provision	E- fact sheets/technotips

The next section discusses the procedures used in the study.

### **Research Design**

The study used a descriptive-correlational design. Correlation research deals with examination of possible relationships among variables. Nevertheless, correlational research cannot establish cause and effect relationships. It should be noted, however, that correlational research can suggest causation (Fraenkel and Wallen, 2002; Glass and Hopkins, 1996). Further, correlational research can also help ascertain causation of the variables involved. Hence, correlational research can serve as basis for progress with regard to research depth and vigor in determining causation.

Survey is a common tool in descriptive-correlational studies (Park, 1993), especially if face-to-face survey administration is needed. Further, Robertson and

Gatignon (1986) have forwarded that technology diffusion research has usually used survey methodologies in contrast with experimental approaches that can provide causal explanations. An interview schedule appropriate to the time constraints and availability of target respondents was implemented. Caution was employed when conducting surveys to gather truthful data regarding the usefulness of rice extension materials in the Philippines. As Bunch (2000) suggested, surveys do not produce desired results unless the whole project is explained, the purpose and objectives of the study are clarified to the target respondents.

### **Population and Sample**

The population of the study consisted of all farmers, extension agents, barangay councilors, and MAFC chairs located in the Luzon Cyber Communities. Luzon, Philippines was chosen since OPAPA was first implemented in Luzon. Currently, there are four Cyber Communities in Luzon: 1) Muñoz, Nueva Ecija, 2) Batac, Ilocos Norte, 3) Magalang, Pampanga, and 4) San Mateo, Isabela. The area of responsibility of PhilRice-Batac which is in the northern part of Luzon (See Appendix C for the map) was purposively, conveniently, and non-randomly selected since it has involved in its rice production trainings the needed four groups (farmers, extension agents, barangay officials, and MAFC chairs) of stakeholders. Also, based on personal correspondence with the program personnel, Batac Cyber Community is one of the most active communities promoting OPAPA and the distribution of knowledge products. An exhaustive list of farmers, extension agents, barangay councilors and MAFC chairs

trained by OPAPA was obtained. The total number of trained farmers, extension agents, and rice-related individuals was considered the population for the study. Initially, there were 145 target respondents in the population. However, during the survey period, only 135 respondents were reached and interviewed. Logistically, to interview the remaining respondents was impossible because of travel distance and time constraints. Figure 3-1 shows the research sample sizes for the four respondent groups.

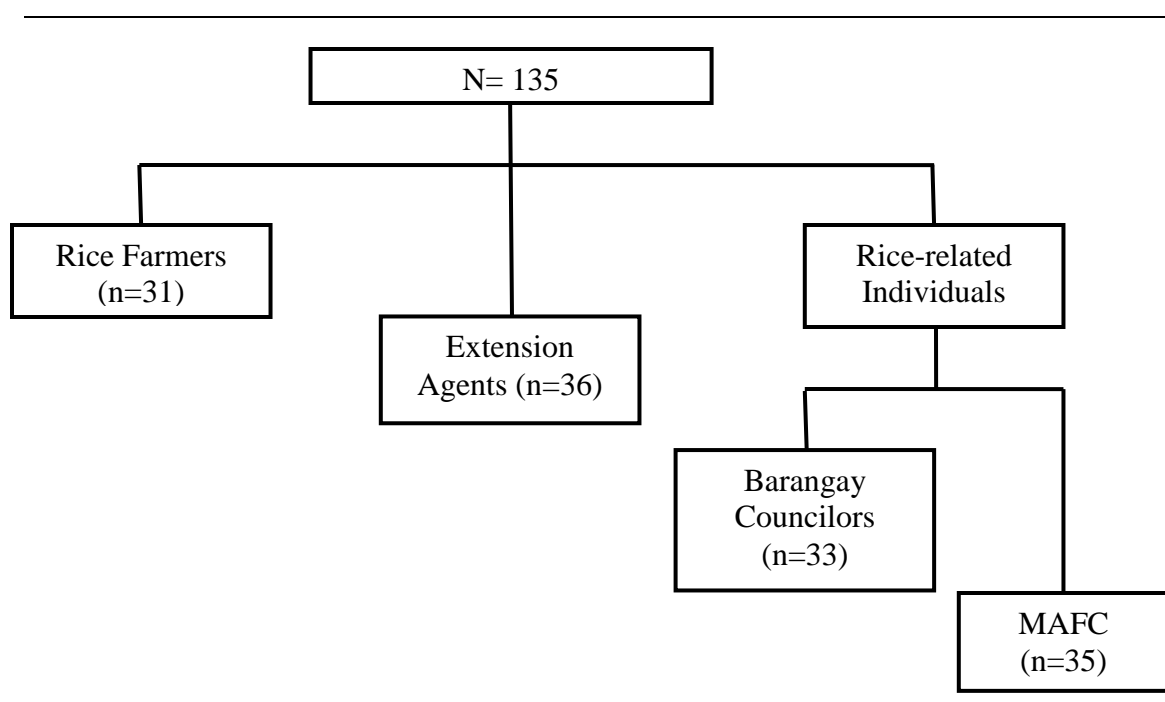


Figure 3-1: Population/Research Groups for the Study

### Instrument Development

The survey instrument reflects the specific areas of concern for the Philippine rice extension materials. The survey instrument for all target respondents/research groups has



the same sections and more or less the same questions. The surveys were similar in order to gauge how the respondent groups reacted to the same set of questions. However, several questions were reworded for suitability to the specific respondent groups but the meaning was still the same with the others. See Appendix **B** for the English and Ilocano survey instruments.

The instrument was divided into six sections. Each section addressed the key variables that were included in the study. The average length for each survey was 17 pages. At the start of the instrument, a fill-in table for survey location was incorporated. Specifically for farmers, cropping pattern was asked. Cropping pattern reflected the rice cropping schedule of rice farmers that may heavily affect rice farmers' needs for rice information and consequently, usefulness of extension materials. Also, a question on a timeframe (with categorical responses, e.g. today, yesterday, this week) on which the respondents remembered to be in need of rice information was also included. The question was included to determine the immediate time period when one needed rice information. The rest of the survey instrument was divided into areas pertaining to the usefulness of specific rice extension materials.

#### *Section 1: Usefulness of Knowledge Products*

The first section deals with one dependent variable which is the usefulness of knowledge products. Questions regarding awareness, usage, KP rice production topics, and preferred materials were included. Usage of KPs incorporated the kind of KPs used, average times of usage in a month and average hours of usage in a month. The most important part of the section was Question Five which is a series of 11 statements using a five-point Likert scale (1=strongly disagree to 5=strongly agree with a 3=uncertain). The

Likert-type statements pertain to the usefulness of KPs. Questions 7 and 8 in Section 1 were for those who are not aware of KPs and those who were aware but did not use KPs, respectively.

*Section 2: Factors Related to the Usefulness of Knowledge Products*

This section has six subdivisions and is concerned with the independent factors that influence the usefulness of KPs. Part A incorporated the uses/motives and gratifications Likert-scale statements (1=strongly disagree to 5=strongly agree with a 3=uncertain) behind usage of KPs. Uses/motives and gratifications items were subdivided into: 1) social, 2) entertainment, 3) acquisition of new knowledge, 4) surveillance, 5) peer pressure, 6) future plans, and fame. The categorization of the uses/motives and gratifications items was based on Charney and Greenberg's (2002) compilation. Almost all of the statements on this section involving uses and gratifications were an adaptation from Charney and Greenberg's study. However, statements were changed to be particularly appropriate to the respondent groups' concerns and objectives of the study.

The rest of the section was on the non-gratification variables that were included in the study. Part B contained statements that were Likert-scales (1=strongly disagree to 5=strongly agree with a 3=uncertain) to determine access to KPs. Part C was concerned with the respondents' perceived characteristics of KPs. Part D dealt with the respondents' attitudes with regard to the task requirements of KPs. Content of KPs was the focus of Part E. The last part are questions, answerable by YES or NO, covered the readability of KPs.

*Section 3: Usefulness of Open Academy for Philippine Agriculture (OPAPA)*

Section three was similar to section 1. The items were the same except that the words, *KPs*, were replaced by OPAPA. OPAPA components were asked in lieu of KP components.

*Section 4. Factors Related to Usefulness of OPAPA*

Section four was identical to Section 2 except that the factors influencing OPAPA usage were the major concern. Also, statements/questions were reworded to reflect the uniqueness of OPAPA components. Again, the statements are adapted from Charney and Greenberg (2002).

*Section 5. Reliance on Mass Information Delivery Strategies/Web-based Services*

Section five dealt with the respondents' extent of reliance on the rice information delivery strategies. Likert scale statements (1=not at all to 5=very great extent with a 3=moderate extent) were employed in the section.

*Section 6. Sociodemographics*

Section six dealt with the sociodemographic variables that may influence the usefulness of rice extension materials. The included sociodemographics were: 1) age, 2) gender, 3) education, 4) distance estimates of one's residential location with regard to possible information sources, 5) distance estimate of one's farmland location with regard to possible information sources, 6) rice farm size, 7) land tenure status, 8) organizational membership, 9) average gross rice farm income, 10) primary occupation, 11) number of household members who had computer/Internet knowledge, 12) awareness of Internet cafes in the community, 13) beforehand knowledge of computers, and 14) willingness to access OPAPA in Internet cafes.

### **Instrument Validity**

Survey instruments were assessed and reviewed for content and face validity by a panel of experts consisting of thesis committee members and PhilRice staff members. In addition, the Impact Policy Program Leader at PhilRice-Muñoz also served as an expert panelist. The instrument was then translated from English to the Ilocano dialect to facilitate understanding by enumerators and survey respondents.

After the instrument was reviewed for initial content and face validity, the developed instrument was pilot-tested in Muñoz, Nueva Ecija, Philippines with twenty-two (22) respondents comprised of farmers, extension agents, and rice-related individuals (whether barangay councilors or MAFC chairs). The feedback/suggestions gathered from the pilot-test respondents were incorporated into the survey to improve the content, clarity, and accuracy of the survey questions.

With the suggestions made by the panel and the feedback from the field test, changes were made to the final instrument. The final instrument was then reproduced.

### **Instrument Reliability**

The instrument was pilot-tested to estimate the reliability using the Cronbach's alpha (Cronbach, 1970). Twenty-two (22) non-participants of the study were personally interviewed by the investigator in February 2008 to provide data for the pilot test. The overall reliability of the instrument was .97 for the KPs and .97 for the OPAPA sections, indicating "excellent" reliability. Further, no major modifications were made to the final instrument. Reliabilities for the pilot test and the final study are presented in Table 3-2.

Table 3-2: Cronbach's Alpha Reliability Analysis for Pilot Test and Final Study

Questionnaire Section	Statements	Pilot Test (n=22)		Final Study <sup>a</sup>	
		# of Items	Alpha	# of Items	Alpha
KP Sections	Survey Section				
	Usefulness of KPs	11	.90	11	.93
	Social	5	.73	5	.86
	Entertainment	5	.86	5	.91
	Acquisition of New Knowledge	5	.90	5	.89
	Surveillance	5	.92	5	.90
	Peer Pressure	5	.89	5	.89
	Future Plans	5	.95	5	.91
	Fame	5	.84	5	.87
	Access	11	.75	11	.89
	Perceived	10	.90	10	.93
	Characteristics of KPs				
	Attitudes toward the Task Requirements of KPs	5	.67	5	.65
	Content	6	.83	6	.94
	OPAPA Sections	Usefulness of OPAPA	11	.95	11
Social		5	.94	5	.94
Entertainment		5	.91	5	.95
Acquisition of New Knowledge		5	.93	5	.96
Surveillance		5	.95	5	.94
Peer Pressure		5	.95	5	.93
Future Plans		5	.92	5	.94
Fame		5	.94	5	.91
Access		10	.86	10	.90
Perceived		12	.91	12	.90
Characteristics of OPAPA					
Attitudes toward the Task Requirements of OPAPA		6	.80	6	.76
Content		6	.97	6	.95
<b>Reliance on Mass Media Delivery Strategies</b>		21	.95	21	.89

<sup>a</sup>N=131 for KPs and N=110 for OPAPA

### **Approval of Survey by Penn State IRB**

Human subject approval was obtained from the Office of Research Protections (ORP) at the Pennsylvania State University. The final documents, letters of verification for the dialect translation and other pertinent documents are provided in the Appendices section. See Appendices **A, B, D, E, F**.

### **Survey Administration and Data Collection**

The Human Resource Management Office of the PhilRice Central Experiment Station in Nueva Ecija in coordination with PhilRice-Batac in Ilocos Norte assisted the investigator to recruit survey enumerators and data encoder for the study. Survey enumerators were graduates of agriculture-related degree programs and residents within the survey areas. All of the enumerators were adept in speaking and conversing in the local dialects. Before the survey, data enumerators passed the Penn State Internal Review Board (IRB) exam and thus, ensured a well-informed interaction with the target respondents. Further, the data enumerators and the data encoder are PhilRice-certified and had been enumerators and encoder of PhilRice studies before.

A one-day orientation regarding the study was conducted to brief enumerators and data encoder. The briefing included discussion of the items on the survey instrument for uniformity of understanding. The approved authorization to conduct research with human subjects was also discussed. A survey manual (Appendix **E**) to serve as further reference during the actual interview was furnished for the enumerators. A pictogram (also in Appendix **E**) for the Likert scale items was also given to the data enumerators for ease in

asking the Likert scale questions and to provide a visual representation of the responses. The researcher completed one interview so that data enumerators were rehearsed on ideas on how to conduct the actual interviews. Practice and observed interviews were also completed.

The survey period occurred from February to March, 2008. The enumerators were provided with the interview schedule for the day, including the Informed Consent Form from ORP which needed signatures from the respondents. Prior to beginning the interviews, respondents were informed of their rights as an interviewee, confidentiality of their responses, and right to decline to answer any question during the interview. After the respondent's consent to the interview, he/she was asked to sign the Informed Consent Form.

Survey instruments for extension agents, barangay councilors and MAFC chairs were delivered to the Municipal Offices of Agriculture and to the respective barangay offices. A courtesy call was made prior to the distribution of surveys so that authorized personnel within the survey jurisdiction were aware of the study. The PhilRice-Batac Research and Development Coordinator accompanied the investigator and the data enumerators in some of the study areas. The completed instruments were collected within three weeks.

Encoding of the surveys occurred after the data collection. A research assistant at PhilRice-Central Experiment Station, who could also understand the dialect, encoded the surveys. Encoding was done using MS Excel 2003. The investigator then transferred it to SPSS v.16 for data analysis.

## **Data Analysis**

Analysis of the data was based on the research questions/objectives of the study using SPSS v.16. The results of the analysis are discussed in Chapter 4. A sociodemographic description of the target respondents was created. Likert scale items were summated and mean statement scores were computed for ease of reporting. Correlation analysis was conducted between sociodemographics and summated usefulness of KPs and OPAPA items. Then the summated independent factors, gratifications and non-gratifications, of KPs and OPAPA were correlated with the summated scores of the usefulness of KPs and OPAPA. Finally, tables and figures were created to show the results of the data analysis.

## **Inferential Statistics Used in the Study**

Table 3-3 shows the inferential statistics that were used in the study. Parametric tests can be used when dealing with a random sample taken from a known population frame. The population frame is well-established in the study since all of the sampling units are known. However, the study aims to be exhaustive of all the sampling units. According to Oliver and Hinkle (1981), parametric tests can be used when a population is treated as a sample especially with the presence of other populations with the same characteristics. Using this justification, the current population serves as a “slice of life” sample of all the individuals in the Philippines who have undergone rice production trainings under PhilRice with the OPAPA curriculum.



Table 3-3: Variables, Scales of Measurement, and Data Analysis by Research Questions

Research Questions	Survey Section	Independent Variables	Dependent Variables	Scale of Measurement	Analysis Method
1. What are the sociodemographic characteristics of rice extension material users?	6	Socio-demographics	-----	Nominal Ordinal Interval/ Ratio	Descriptive statistics: mean, frequency, percent
2. What factors influence the usefulness of knowledge products as a traditional mass approach in disseminating rice information?	1, 2, 5	1. Uses and Gratification Variables 2. Non-gratification Variables	Usefulness of KPs	Nominal Interval/Ratio	PPMr, point bi-serial correlation, mean, SD
3. What factors influence the usefulness of OPAPA as an emerging delivery strategy of rice information extension?	3, 4, 5	1. Uses and Gratification Variables 2. Non-gratification Variables	Usefulness of OPAPA	Nominal Interval/ Ratio	PPMr, point bi-serial correlation, mean, SD

Table 3-3. Variables, Scales of Measurement, and Data Analysis by Research Questions (cont'd)

<b>Research Questions</b>	<b>Survey Section</b>	<b>Independent Variables</b>	<b>Dependent Variables</b>	<b>Scale of Measurement</b>	<b>Analysis Method</b>
4. How do respondent groups (farmers, extension agents, barangay officials and MAFC chairs) evaluate the usefulness of KPs and OPAPA?	1, 3	Respondent Groups	Usefulness of rice extension materials, KPs and OPAPA	Nominal Interval/Ratio	Dependent T-test, ANOVA
5. Is there a relationship between sociodemographic variables and usefulness of rice extension materials?	1, 3, 6	Socio-demographics	Usefulness of KPs Usefulness of OPAPA	Nominal Interval/Ratio	Descriptive statistics: mean, frequency, percent, point-biserial correlation, Pearson product-moment correlation (PPMR)

## **Chapter 4**

### **Findings**

The findings of the study are organized by research questions and the methods of data analysis presented in Chapter 3 were followed. The study findings are presented in the following major sections: 1) sociodemographic characteristics of the rice extension material users, 2) relationships between gratification and non-gratification factors and usefulness of KP, 3) relationships between gratification and non-gratification factors and usefulness of OPAPA, 4) evaluation of KPs and OPAPA by respondent groups, and 5) relationship between sociodemographic variables and usefulness of rice extension materials.

### **Purpose of the Study and Research Questions/Objectives**

The overall purpose of the study was to assess the usefulness of rice extension materials in the Philippines specifically in Northern Luzon, Philippines. The specific research questions of the study were:

- 1) What are the sociodemographic characteristics of rice extension material users?
- 2) What factors influence the usefulness of knowledge products as a traditional mass approach in disseminating rice information?
- 3) What factors influence the usefulness of OPAPA as an emerging delivery strategy of rice information extension?

- 4) How do respondent groups (farmers, extension agents, barangay officials and MAFC chairs) evaluate the usefulness of KP and OPAPA rice extension materials?
- 5) Is there a relationship between sociodemographic variables and usefulness of rice extension materials?

To guide the presentation of findings, Figure **4-1** reiterates the conceptual framework of the study which shows the independent and dependent variables.

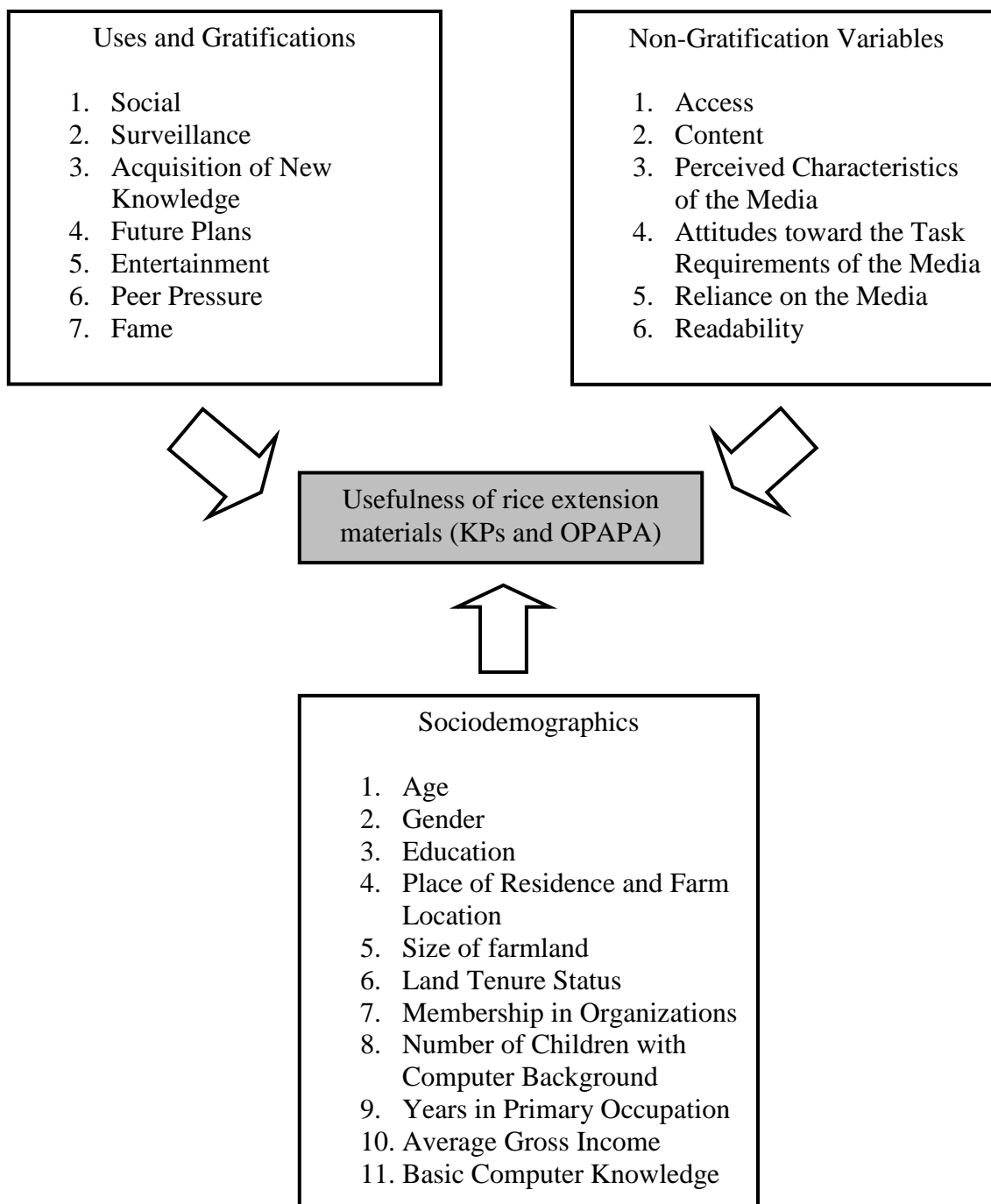


Figure 4-1: Conceptual Framework for the Study

### **Research Question 1: What are the sociodemographic characteristics of rice extension material users?**

This section provides a brief discussion on the sociodemographic profile of the respondents who completed the interview schedules. Although 135 respondents provided useable data, some questions were not answered by all respondents. Hence, the total number of respondent may vary from one characteristic to another.

The sociodemographic characteristics examined in this study were: 1) age, 2) gender, 3) education, 4) place of residence, 5) farm location, 6) size of farm, 7) land tenure status, 8) membership in organizations, 9) number of children with computer background, 10) years in primary occupation, 11) average gross income and 12) basic computer knowledge before the OPAPA training.

For ease of discussion, tables containing descriptive statistics for each variable are presented. However, frequency tables for interval/ratio variables will be in Appendix I.

#### **Age**

A little over one-third of the farmers (35.7%), barangay officials (41.4%), and MAFC chairs (34.3%) were in the 51-60 years age category. On the other hand, extension agents were evenly distributed within the 21-30 to the 51-60 years old categories (see Table I-5 in Appendix I).

The mean age of all four groups of respondents are presented in Table 4-1. As seen in the table, farmers' mean age is 52.82 years ( $SD=11.71$ ) while extension agents were younger with a mean of 42.39 years ( $SD=11.79$ ).

Table 4-1: Age Profile by Respondent Groups

Respondent Group	Mean	SD	Range		
			Value	Min	Max
Farmers (n=28)	52.82	11.71	47	31	78
Extension Agents (n=33)	42.39	11.79	37	24	61
Barangay Officials (n=29)	47.62	10.46	43	26	69
MAFC Chairs (n=35)	52.06	11.60	46	25	71
All (n=125)	48.65	12.05	54	24	78

## Gender

With regard to gender (Table 4-2), 74.8% of all respondents were males. Males comprised 89.3% of the farmers, 93.9% of the barangay officials, and 91.2% of the MAFC. In contrast, a little over two-thirds (69.4%) of the extension agents were females.

Table 4-2: Gender Profile by Respondent Groups

Gender	Farmers (n=28)		Extension Agents (n=36)		Brgy. Officials (n=33)		MAFC (n=34)		Total (n=131)	
		%		%		%		%		%
Male	<b>25</b>	<b>89.3</b>	11	30.6	<b>31</b>	<b>93.9</b>	<b>31</b>	<b>91.2</b>	<b>98</b>	<b>74.8</b>
Female	3	10.7	<b>25</b>	<b>69.4</b>	2	6.1	3	8.8	33	25.2

## Education

Table 4-3 shows the educational profile of all respondents. More than one third of the farmers (35.5%) were high school graduates. Almost one-half of the MAFC chairs (44.1%) had completed some college but did not graduate. On the other hand, barangay officials (66.7%) and extension agents (91.4%) were college graduates. The large percentage of extension agents with baccalaureate degrees can be explained by the fact that such degrees were part of the job requirements. Overall, almost one-half (49.6%) of the respondents were college graduates. Further, no respondent has reported MS or PhD degrees.

With these data, it can be said that respondents in this study were literate. The levels of education achieved by the respondents may support the national data in 2000 that showed the literacy rates of the household population 10 years and older in the regions of Northern Luzon as higher than ninety percent (NSO, 2003).



Table 4-3: Educational Profile by Respondent Groups

Educational Level	Respondent Groups									
	Farmers		Extension Agents		Brgy. Officials		MAFC		All	
	N	%	N	%	N	%	N	%	N	%
Elementary	1	3.2	0	0	0	0	0	0	1	.8
Elementary Graduate	6	19.4	0	0	2	6.1	4	11.8	12	9.0
High School	4	12.9	0	0	2	6.1	1	2.9	7	5.3
High School Graduate	<b>11</b>	<b>35.5</b>	0	0	4	12.1	5	14.7	20	15.0
College	6	19.4	3	8.6	3	9.1	<b>15</b>	<b>44.1</b>	27	20.3
College Graduate	3	9.7	<b>32</b>	<b>91.4</b>	<b>22</b>	<b>66.7</b>	9	26.5	<b>66</b>	<b>49.6</b>

### Place of Residence

For the residential locations of respondents, they were asked to estimate the distance from their homes with respect to PhilRice and ATI as possible primary government sources of rice information. A greater portion of farmers (93.5%), extension agents (55.6%), barangay officials (48.5%), and MAFC chairs (28.1%) were within 30 kilometers of PhilRice-Batac and the regional office of DA-ATI. Also, respondents were within the 30 km radius of possible secondary rice information sources like chemical companies, seed dealers, fertilizer dealers, and farm cooperatives.

Table 4-4 shows the mean distance and SD of respondents' house location with regard to possible information sources. Note that SD is greater than the mean because of

extreme values and primarily since a greater percentage of the respondents resided close to the possible information sources.

**Table 4-4:** Residence Location of Respondent Groups with regard to Rice Information Sources (in km)

Respondent Group	Mean	SD	Range		
			Value	Min	Max
<u>Farmers (n=31)</u>					
PhilRice	10.72	17.94	72.00	< 1	72.00
ATI	5.64	6.09	17.00	< 1	17.00
Chemical Companies	3.72	7.28	20.00	< 1	20.00
Seed Dealers	4.26	7.07	20.00	< 1	20.00
Fertilizer Dealers	1.81	1.56	5.00	< 1	5.00
Farm Cooperatives	0.62	0.79	3.00	< 1	3.00
<u>Extension Agents (n=36)</u>					
PhilRice	90.25	125.92	400.00	< 1	400.00
ATI	85.71	118.92	380.00	< 1	380.00
Chemical Companies	1.20	2.76	12.00	< 1	12.00
Seed Dealers	4.72	5.39	20.00	< 1	20.00
Fertilizer Dealers	5.84	6.37	20.00	< 1	20.00
Farm Cooperatives	3.45	4.922	20.00	< 1	20.00
<u>Barangay Officials (n=33)</u>					
PhilRice	72.36	88.32	260.00	< 1	260.00
ATI	78.18	95.54	300.00	< 1	300.00
Chemical Companies	17.02	86.95	500.00	< 1	500.00
Seed Dealers	16.14	37.17	200.00	< 1	200.00
Fertilizer Dealers	11.26	35.13	200.00	< 1	200.00
Farm Cooperatives	5.00	20.75	120.00	< 1	120.00
<u>MAFC Chairs (n=35)</u>					
PhilRice	106	99.12	350.00	< 1	350.00
ATI	97.48	88.47	347.00	< 1	347.00
Chemical Companies	6.60	24.12	140.00	< 1	140.00
Seed Dealers	5.80	7.96	30.00	< 1	30.00
Fertilizer Dealers	6.30	8.04	30.00	< 1	30.00
Farm Cooperatives	2.74	5.23	23.00	< 1	23.00
<u>Total (n=135)</u>					
PhilRice	71.70	99.14	400.00	< 1	400.00
ATI	68.32	95.43	380.00	< 1	380.00
Chemical Companies	7.05	44.76	500.00	< 1	500.00
Seed Dealers	7.68	19.71	200.00	< 1	200.00
Fertilizer Dealers	6.40	18.25	200.00	< 1	200.00
Farm Cooperatives	3.00	10.90	120.00	< 1	120.00

## Farm Location

Table 4-5 shows that almost all of the rice farms were located close to the information sources especially with the two government sources, PhilRice-Batac and DA-ATI. This is primarily due to the fact that PhilRice-Batac can easily access and train these farmers regarding OPAPA and newer rice technologies compared to other farmers within the northern part of Luzon.

Table 4-5: Descriptive Statistics of Farm Location with regard to Rice Information Sources (in km)

Information Source	Mean	SD	Range		
			Values	Min	Max
PhilRice	10.67	17.97	72.00	< 1	72.00
ATI	5.58	6.20	17.00	< 1	17.00
Chemical Companies	3.65	7.32	20.00	< 1	20.00
Seed Dealers	4.70	7.17	20.00	< 1	20.00
Fertilizer Dealers	2.32	2.25	10.00	< 1	10.00
Farm Cooperatives	0.70	0.80	3.00	< 1	3.00

## Size of Farm

Farmers indicated smaller rice farms. The mean hectareage of farmer respondents was 0.96 ( $SD=0.93$ ). The mean of total owned and tenanted/leased rice farms were 0.78 ( $SD=0.58$ ) and 0.78 ( $SD=0.77$ ) hectares, respectively (Table 4-6). This is lower than the average size of paddy farm in the Philippines which is 1.14 hectares in 2002 (PhilRice, 2007). Further, it should be noted that these rice farms also served as vegetable farms

during other times of the year since the common cropping pattern prevalent in the study areas is rice-vegetables.

**Table 4-6:** Rice Farm Hectarage of Farmer Respondents

Rice Hectares	N	Mean	SD	Range		
				Value	Min	Max
Total rice farm (in ha)	31	0.96	0.93	4.85	.15	5.00
Total owned rice farm (in ha)	14	0.78	0.58	1.85	.15	2.00
Total not owned rice farm (in ha)	12	0.78	0.77	3.90	.10	4.00

### **Land Tenure Status**

In the Philippines, various land ownership statuses exist. However, for the purpose of this study, three most common categories are included. These were 1) owners, 2) tenants, and 3) leaseholders. These categories have certain degrees of control over major farming decisions. Of the 31 farmers, 77% were tenants while 45% were owners. Please note that farmers can belong to one or more of the categories depending on the land parcel in question (Figure 4-2) because a farmer can own land and be a leasee or tenant with regard to the other land parcels.

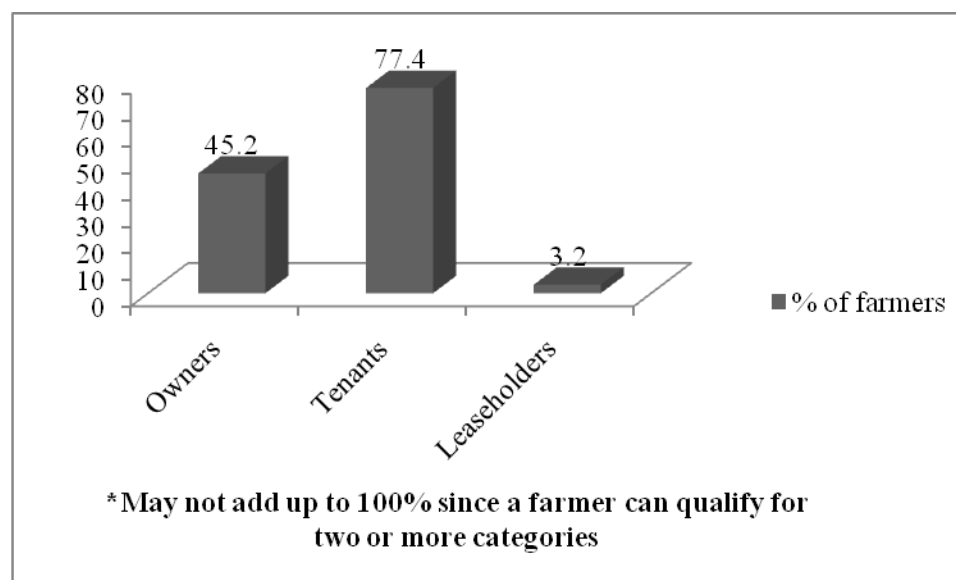


Figure 4-2: Land Tenure Status of Rice Farmers

### Membership in Organizations

Figure 4-3 shows the organizational membership of the respondent groups. Majority of the respondents were members of rice-related/rice farm organizations. Seventy-eight percent of the total respondents were members of organizations and were active in their respective organizations. The organizations ranged from farm organizations to seed organizations. However, it should be noted that farmers and MAFC chairs had higher percentage of membership in such organizations with 93.5% and 94.3%, respectively. This higher membership in organizations is expected since majority of PhilRice trainings were based on networks and linkages with these rice-based and rice-related organizations.

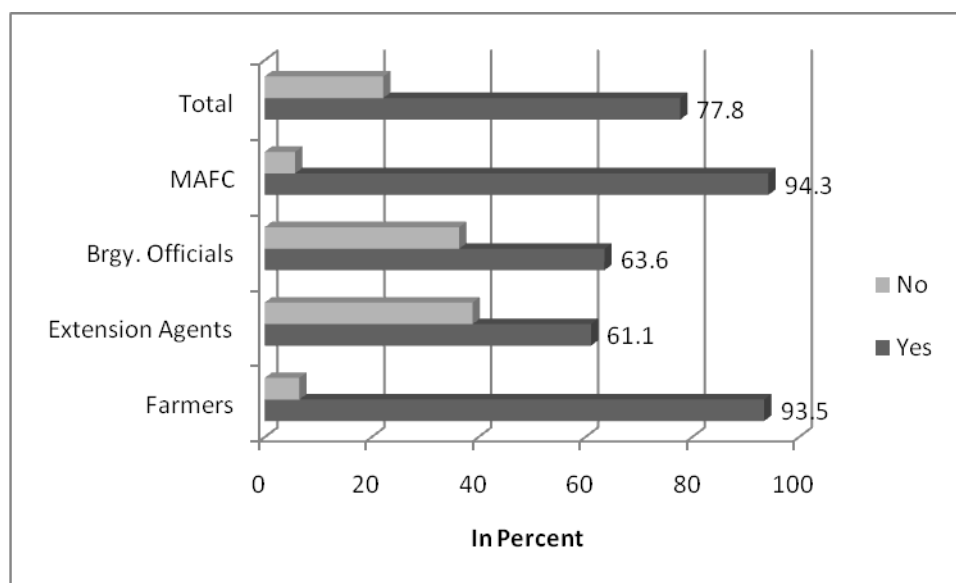


Figure 4-3: Organizational Membership of Respondents

### Number of Children with Computer Background

The respondents were asked if they have children within their households who have computer backgrounds to explore the relationship between children and usefulness of OPAPA and KPs. In essence, the number of children with basic computer background is considered to have an influence on the usefulness of ICTs.

Overall, almost 32% of the respondents have two children who have computer knowledge (see Table I-6 on Appendix I). Table 4-7 shows the household profile of respondent groups with regard to children who have knowledge on computers. Data revealed that one or two children with computer knowledge were found in a respondents' household. The presence of children with computer background regardless of age within

a farm household may be attributable to the fact that the average household size in the study areas as of 2002 was 5.

**Table 4-7:** Number of Children with Computer Background for the Respondent Groups

Respondent Groups	N	Mean	SD	Range		
				Value	Min	Max
Farmers	25	1.48	1.09	4	0	4
Extension Agents	29	1.39	1.02	4	0	4
Barangay Officials	26	2.00	1.54	5	0	5
MAFC	26	1.63	1.40	5	0	5
Total	106	1.62	1.29	5	0	5

### **Years in Primary Occupation**

With regard to number of years spent in their respective primary occupations, respondents averaged almost 21 years. However, farmers have the highest mean of 28 years ( $SD=15.52$ ) followed by MAFC with 23 years ( $SD=16.14$ ). Barangay officials with the lowest number of years can be explained by the fact that their positions were dependent on local elections and they have other occupation aside from being elected officials. See Table 4-8.

Table 4-8: Descriptive Statistics for Years in Primary Occupation

Respondent Groups	N	Mean	SD	Range		
				Value	Min	Max
Farmers	30	28.00	15.52	60	5	65
Extension Agents	35	18.14	11.60	35	2	37
Barangay Officials	30	12.97	13.09	54	1	55
MAFC	34	23.06	16.14	48	2	50
Total	129	20.53	15.03	64	1	65

### Average Gross Rice Farm Income

Farmers' average rice farm income was P30, 000.88 ( $SD=$  P30, 541.29). Gross income ranged from P11, 608.38 to P100, 000.55. When compared to average gross returns of P38, 535 on a single rice cropping in 2006 (PhilRice, 2007), farmers included in the study were within the range.

### Basic Computer Knowledge

The respondents were asked with a yes/no type of question if they have prior computer knowledge and experience before the OPAPA training. This question is to briefly describe whether knowledge and experience impact the usefulness of OPAPA services. Further, responses indicate if respondents have the necessary skills/literacy to access the OPAPA services.

Table 4-9 presents respondents' computer knowledge before the OPAPA training. Only approximately half of extension agents (54.3%) and barangay officials (45.5%) reported knowledge on how to use computers before the OPAPA training; almost no



farmers or MAFC respondents were computer literate, Table 4-9. However, a substantially higher percentage of farmers (96.8%) were aware of the Internet cafes in their respective communities than others, followed by MAFC chairs (82.9%), extension agents (79.4%), and barangay officials (75.8%). Almost 100% of the respondents groups expressed willingness to access OPAPA in Internet cafes (see Table I-4 in Appendix I).

Table 4-9: Percentage of Respondents with Basic Computer Knowledge

Respondent Groups	Knowledge of Computers Before (n=135)	
	N	%
Farmers (n=31)	2	6.5
Extension Agents (n=36)	19	54.3
Brgy. Officials (n=33)	15	45.5
MAFC (n=35)	7	20.0
Total	43	32.1

**Research Question 2: What factors influence the usefulness of knowledge products as a traditional mass approach in disseminating rice information?**

Out of a total 135 respondents, 131 were aware of KPs and were using KPs. Data summarized in Table 4-10 shows the summated scores, means, and standard deviations for the usefulness of KPs by the four groups of respondents. Findings revealed that perceptions on the usefulness of KPs by the four respondent groups were very high as evidenced in the summated scores that were above the theoretical midpoint. Summated scores ranged from 49.22 to 51.83 with 11 as the minimum score and 55 as the maximum. Further, mean statement scores were above the “agree” response (1=strongly disagree to 5=strongly agree). The data also indicated that with among the four

respondent groups, extension agents had the highest mean statement score of 4.71 ( $SD=0.30$ ) for the usefulness of KPs.

Table 4-10: Survey Respondents' Perception Scores on the Usefulness of KPs

Respondent Group	Usefulness of KPs (11-55)*						
	N	# of items	Summated Mean Score	Theoretical Midpoint	Summated Mean SD	Mean Statement Score**	Mean Statement SD
Farmers	30	11	49.87	33	5.88	4.53	0.53
Extension Agents	36	11	51.83	33	3.35	4.71	0.30
Barangay Officials	31	11	49.22	33	3.75	4.48	0.34
MAFC Chairs	34	11	49.88	33	5.71	4.53	0.52
All	131	11	50.26	33	4.82	4.57	0.44

\*Numbers in parenthesis indicate the possible range of summated perception scores for usefulness of KPs

\*\*Responses to the statement was scored as follow: 1=strongly disagree; 2=disagree; 3=uncertain; 4=agree; and 5=strongly agree

On the other hand, to measure the independent variables, survey respondents were asked to indicate their perceptions regarding seven gratification and five non-gratification factors. The gratification factors/variables can be considered as the motives/uses that influence perceptions regarding the usefulness of KPs. On the other hand, non-gratification factors/variables go beyond motives of the individuals in using KPs. These factors were a combination of internal and external factors that affect the usefulness of extension materials. Factors that were considered as “internal” to the individual were perceived characteristics of KPs, attitudes toward the task requirements of KPs, and reliance on KPs. In contrast, external factors were access and content.

Tables **4-11** through **4-14** show the respondents’ perceptions on the gratification and non-gratification variables. The seven gratification variables were: 1) social, 2) surveillance, 3) acquisition of new knowledge, 4) future plans, 5) entertainment, 6) peer pressure and 7) fame. For example, the SOCIAL variable covered the following statements on uses/gratifications of KP: 1) getting advice on rice farming, 2) having information to pass on to others, 3) having something to discuss with others, 4) staying in touch with others, and 5) being able to respond to inquiries on rice production. For the rest of the variables, the item components that may serve as straightforward definitions are presented in Tables **G-8** through **G-20** in Appendix **G**. On the other hand, the non-gratification factors were: 1) content, 2) perceived characteristics of KPs, 3) access, 4) attitudes toward the task requirements of KPs, and 5) reliance on KPs. RELIANCE ON KPs was the only variable measured on the scale of 1=not at all to 5=very great extent. Please note that for the gratification variables, there were five Likert-scale statements for

each of the variable. However, for the non-gratification variables, number of statements varied from one variable to another.

Data in Table **4-11** show farmers' responses on the seven gratification and five non-gratification variables. Summated mean scores on the gratification variables ranged from a low of 19.07 to a high of 24.13. For non-gratification variables, the scores range from a low 19.93 to a high of 45.13. These summated mean scores were well above the theoretical midpoint. ACQUISITION OF NEW KNOWLEDGE (to get information on rice technologies, find helpful rice production information, learn how to do rice production related things, access information specific to the client's needs, and know more about every phase of rice production) was rated the highest by farmers with a mean statement score of 4.83 ( $SD=0.39$ ). On the other hand, CONTENT (relevance and organization of the information) was rated the highest for non-gratification factors with a mean statement score of 4.52 ( $SD=0.52$ ). For the rest of the gratification and non-gratification variables, farmers indicated general "agreement" on the statements with mean scores that ranged from 3.81 to 4.83. Please note that RELIANCE ON KPs was measured on a different scale.

Table 4-11: Farmers' Perception Scores on Gratification and Non-Gratification Variables of KPs

Independent Variables	N	# of items	Summated Mean Score	Theoretical Midpoint	Summated Mean SD	Mean Statement Score**	Mean Statement SD
<b>Gratifications</b>							
Social (5-25)	30	5	22.20	15	2.41	4.44	0.48
Surveillance (5-25)	30	5	23.00	15	2.38	4.60	0.48
Acquisition of New Knowledge (5-25)	30	5	24.13	15	1.94	<b>4.83</b>	<b>0.39</b>
Future Plans (5-25)	30	5	22.53	15	2.44	4.51	0.49
Entertainment (5-25)	30	5	20.23	15	3.50	4.05	0.70
Peer Pressure (5-25)	30	5	19.07	15	3.85	3.81	0.77
Fame (5-25)	30	5	19.70	15	3.36	3.94	0.67
<b>Non-Gratifications</b>							
Content (6-30)	30	6	27.10	18	3.10	<b>4.52</b>	<b>0.52</b>
Perceived Characteristics of KPs (9-45)	30	9	40.57	27	4.37	4.51	0.49
Access (11-55)	30	11	45.13	33	5.46	4.10	0.50
Attitudes toward the Task Requirements of KPs (5-25)	30	5	19.93	15	2.42	3.99	0.48
Reliance on KPs (9-45)	30	9	25.37	27	7.62	2.82	0.85

\* Numbers in parentheses indicate the possible range of summated perception scores for each of the variables

\*\* Responses to the statement was scored as follow: 1=strongly disagree; 2=disagree; 3=uncertain; 4=agree; and 5=strongly agree; except for reliance on KPs which was scored as follows: 1=not at all; 2=some extent; 3=moderate extent; 4=great extent; and 5=very great extent

Table **4-12** shows the results for extension agents. The data revealed that extension agents had positive responses to the gratification and non-gratification variables. Conversely, the summated mean scores of extension agents indicated general “agreement” to the items in the variable groupings. Further, their responses were above the theoretical midpoints for all the gratification and non-gratification variables. As shown in Table **4-12**, extension agents rated ACQUISITION OF NEW KNOWLEDGE ( $M= 4.82$ ;  $SD=0.34$ ) and CONTENT ( $M=4.61$ ;  $SD=0.44$ ) the highest for gratification and non-gratification factors, respectively.

Table 4-12: Extension Agents' Perception Scores on Gratification and Non-Gratification Variables of KPs

Independent Variables	n	# of items	Summated Mean Score	Theoretical Midpoint	Summated Mean SD	Mean Statement Score**	Mean Statement SD
<b>Gratifications</b>							
Social (5-25)	36	5	23.28	15	2.10	4.66	0.42
Surveillance (5-25)	36	5	23.47	15	2.05	4.69	0.41
Acquisition of New Knowledge (5-25)	36	5	24.11	15	1.69	<b>4.82</b>	<b>0.34</b>
Future Plans (5-25)	36	5	24.03	15	1.70	4.81	0.34
Entertainment (5-25)	36	5	20.94	15	2.80	4.19	0.56
Peer Pressure (5-25)	36	5	19.58	15	3.84	3.92	0.77
Fame (5-25)	36	5	20.53	15	3.84	4.11	0.77
<b>Non-Gratifications</b>							
Content (6-30)	36	6	27.67	18	2.64	<b>4.61</b>	<b>0.44</b>
Perceived Characteristics of KPs (9-45)	36	9	49.19	27	4.08	4.47	0.45
Access (11-55)	36	11	43.22	33	7.33	3.93	0.67
Attitudes toward the Task Requirements of KPs (5-25)	36	5	20.00	15	2.94	4.00	0.59
Reliance on KPs (9-45)	36	9	33.30	27	6.43	3.70	0.71

\* Numbers in parentheses indicate the possible range of summated perception scores for each of the variables

\*\* Responses to the statement was scored as follows: 1=strongly disagree; 2=disagree; 3=uncertain; 4=agree; and 5=strongly agree; except for reliance on KPs which was scored as follows: 1=not at all; 2=some extent; 3=moderate extent; 4=great extent; and 5=very great extent



The results for barangay officials are presented in Table **4-13**. Data revealed that like the previous respondent groups, barangay officials rated gratification and non-gratification items positively. The summated mean scores were either above or close to the theoretical midpoint. Barangay officials rated ACQUISITION OF NEW KNOWLEDGE ( $M=4.60$ ;  $SD=0.48$ ) and CONTENT ( $M=4.28$ ;  $SD=0.55$ ) as the highest for gratification and non-gratification variables, respectively.

Table 4-13: Barangay Officials' Perception Scores on Gratification and Non-Gratification Variables of KPs

Independent Variables	n	# of items	Summated Mean Score	Theoretical Midpoint	Summated Mean SD	Mean Statement Score**	Mean Statement SD
<b>Gratifications</b>							
Social (5-25)	31	5	21.97	15	2.26	4.39	0.45
Surveillance (5-25)	31	5	22.64	15	2.27	4.53	0.45
Acquisition of New Knowledge (5-25)	31	5	23.00	15	2.39	<b>4.60</b>	<b>0.48</b>
Future Plans (5-25)	31	5	22.84	15	2.41	4.57	0.48
Entertainment (5-25)	31	5	19.64	15	3.82	3.93	0.76
Peer Pressure (5-25)	31	5	18.52	15	3.44	3.70	0.69
Fame (5-25)	31	5	20.42	15	3.41	4.08	0.68
<b>Non-Gratifications</b>							
Content (6-30)	31	6	25.71	18	3.30	<b>4.28</b>	<b>0.55</b>
Perceived Characteristics of KPs (9-45)	31	9	38.10	27	4.28	4.23	0.48
Access (11-55)	31	11	41.29	33	7.01	3.75	0.64
Attitudes toward the Task Requirements of KPs (5-25)	31	5	19.32	15	3.20	3.86	0.64
Reliance on KPs (9-45)	31	9	26.97	27	8.80	3.00	0.98

\* Numbers in parentheses indicate the possible range of summated perception scores for each of the variables

\*\* Responses to the statement was scored as follow: 1=strongly disagree; 2=disagree; 3=uncertain; 4=agree; and 5=strongly agree; except for reliance on KPs which was scored as follows: 1=not at all; 2=some extent; 3=moderate extent; 4=great extent; and 5=very great extent

Table **4-14** showed the results for MAFC Chairs. Data indicated that all summated mean scores of the MAFC respondents were above the theoretical midpoint. It should be noted that MAFC also rated ACQUISITION OF NEW KNOWLEDGE ( $M=4.61$ ;  $SD=0.43$ ) and CONTENT ( $M=4.50$ ;  $SD=0.47$ ) as the highest for gratification and non-gratification variables, respectively.

Table 4-14: MAFC Chairs' Perception Scores on Gratification and Non-Gratification Variables of KPs

Independent Variables	n	# of items	Summated Mean Score	Theoretical Midpoint	Summated Mean SD	Mean Statement Score**	Mean Statement SD
<b>Gratifications</b>							
Social (5-25)	34	5	22.68	15	2.20	4.53	0.44
Surveillance (5-25)	34	5	22.70	15	2.39	4.54	0.48
Acquisition of New Knowledge (5-25)	34	5	23.06	15	2.13	<b>4.61</b>	<b>0.43</b>
Future Plans (5-25)	34	5	22.85	15	2.51	4.57	0.50
Entertainment (5-25)	34	5	20.50	15	3.41	4.10	0.68
Peer Pressure (5-25)	34	5	19.32	15	4.56	3.85	0.92
Fame (5-25)	34	5	21.32	15	3.82	4.26	0.76
<b>Non-Gratifications</b>							
Content (6-30)	34	6	26.97	18	2.83	<b>4.50</b>	<b>0.47</b>
Perceived Characteristics of KPs (9-45)	34	9	40.03	27	4.22	4.45	0.47
Access (11-55)	34	11	43.15	33	7.36	3.92	0.67
Attitudes toward the Task Requirements of KPs (5-25)	34	5	20.53	15	2.39	4.11	0.48
Reliance on KPs (9-45)	34	9	28.59	27	7.33	3.18	0.81

\* Numbers in parentheses indicate the possible range of summated perception scores for each of the variables

\*\* Responses to the statement was scored as follow: 1=strongly disagree; 2=disagree; 3=uncertain; 4=agree; and 5=strongly agree; except for reliance on KPs which was scored as follows: 1=not at all; 2=some extent; 3=moderate extent; 4=great extent; and 5=very great extent

Overall, the respondents indicated general agreement to the gratification and non-gratification variables (Table 4-15). For all respondent groups, the summated mean scores for ACQUISITION OF NEW KNOWLEDGE ( $M=4.72$ ;  $SD=0.42$ ) and CONTENT ( $M=4.48$ ;  $SD=0.50$ ) variables were consistently high. It is noteworthy to mention that responses across respondent groups were positively high, indicating that responses clustered on the agree/strongly agree response scales. However for the variable, RELIANCE on KPs, all respondents indicated dependence only to a moderate extent.

Table 4-15: All Survey Respondents' Perception Scores on Gratification and Non-Gratification Variables of KPs

Independent Variables	n	# of items	Summated Mean Score	Theoretical Midpoint	Summated Mean SD	Mean Statement Score**	Mean Statement SD
<b>Gratifications</b>							
Social (5-25)	131	5	22.56	15	2.27	4.51	0.45
Surveillance (5-25)	131	5	22.97	15	2.27	4.59	0.46
Acquisition of New Knowledge (5-25)	131	5	23.58	15	2.09	<b>4.72</b>	<b>0.42</b>
Future Plans (5-25)	131	5	23.10	15	2.32	4.62	0.46
Entertainment (5-25)	131	5	20.36	15	3.37	4.07	0.67
Peer Pressure (5-25)	131	5	19.14	15	3.93	3.82	0.79
Fame (5-25)	131	5	20.52	15	3.63	4.10	0.73
<b>Non-Gratifications</b>							
Content (6-30)	131	6	26.89	18	3.01	<b>4.48</b>	<b>0.50</b>
Perceived Characteristics of KPs (9-45)	131	9	39.74	27	4.28	4.42	0.48
Access (11-55)	131	11	43.18	33	6.92	3.92	0.63
Attitudes toward the Task Requirements of KPs (5-25)	131	5	19.96	15	2.76	3.99	0.55
Reliance on KPs (9-45)	131	9	28.76	27	8.05	3.19	0.89

\* Numbers in parentheses indicate the possible range of summated perception scores for each of the variables

\*\* Responses to the statement was scored as follow: 1=strongly disagree; 2=disagree; 3=uncertain; 4=agree; and 5=strongly agree; except for reliance on KPs which was scored as follows: 1=not at all; 2=some extent; 3=moderate extent; 4=great extent; and 5=very great extent

This section describes the statistical relationship between usefulness of KPs and the identified gratification and non-gratification variables. To measure the dependent variable which is the usefulness of KPs, survey respondents were asked to indicate the extent of agreement on the 11 statements relating to usefulness of KPs. The 11 statements were measured using a five-point scale (1=strongly disagree to 5=strongly agree). For example, the respondents were asked to provide responses to statements like KPs being useful, KPs being informative, or KPs being valuable in providing rice production tips. Means and standard deviations for each of the 11 statements are found in Table **G-5** in Appendix **G**.

To answer the research question, bivariate analyses were conducted to examine and identify significant relationships among usefulness of KPs and gratification and non-gratification factors. Pearson Product Moment Correlations (PPMR) and point-biserial correlations were computed to describe the relationships. Davis' (1971) conventions were used to interpret the correlation coefficients: .01 to .09 (negligible), .10 to .29 (low), .30 to .49 (moderate), .50 to .69 (substantial), .70 up (very strong), and 1 (perfect). The summated mean scores on the gratification and non-gratification items were correlated with the usefulness of knowledge products using PPMR and point-biserial correlations.

Table **4-16** shows the Pearson correlation coefficients between the independent variables and usefulness of KPs. Data revealed low to very strong positive correlations, significant at 0.01 and 0.05 alpha levels between gratification variables and usefulness of KPs. Correlation coefficients ranged from  $r=.22$  to  $.71$ . Very strong significant positive correlation ( $r=.71$ ,  $p<.01$ ) was found between the SOCIAL gratification variable and the usefulness of KPs. Substantial relationships were found between SURVEILLANCE and

usefulness of KPs ( $r=.58$ ,  $p<.01$ ) and ACQUISITION OF NEW KNOWLEDGE and usefulness of KPs ( $r=.53$ ,  $p<.01$ ). The rest of the gratification variables also indicated low to moderate positive relationships with usefulness of KPs.

On the other hand, for non-gratification variables, CONTENT had substantial significant positive correlations ( $r=.57$ ,  $p<.01$ ) with usefulness of KPs, followed by PERCEIVED CHARACTERISTICS OF KPs with usefulness of KPs  $r=.55$ ,  $p<.01$ . Low to moderate significant positive relationships existed between other non-gratification variables (ACCESS, ATTITUDES toward the TASK REQUIREMENTS of KPs, and RELIANCE ON KPs) and usefulness of KPs. See Table 4-16.

For readability, a nominal non-gratification variable, point-biserial correlation was computed. Results indicated that there was no significant relationship between readability and usefulness of KPs.



Table 4-16: Correlations between Independent Variables and Usefulness of Knowledge Products (N=131)

Gratification Variables	Mean <sup>a</sup>	SD	Pearson's r
Social	4.51	0.45	<b>0.71**</b>
Surveillance	4.59	0.46	<b>0.58**</b>
Acquisition of New Knowledge	4.72	0.42	<b>0.53**</b>
Future Plans	4.62	0.46	<b>0.44**</b>
Entertainment	4.07	0.67	<b>0.37**</b>
Peer Pressure	3.82	0.79	<b>0.27**</b>
Fame	4.10	0.73	<b>0.22*</b>
Non-Gratification Variables			
Content	4.48	0.50	<b>0.57**</b>
Perceived Characteristics of KPs	4.42	0.48	<b>0.55**</b>
Access	3.92	0.63	<b>0.37**</b>
Attitudes towards the Task Requirement of KPs	3.99	0.55	<b>0.36**</b>
Reliance on KPs	3.20	0.89	<b>0.29**</b>

<sup>a</sup>Scale: 1=strongly disagree to 5= strongly agree; except for reliance on KPs, 1=not at all to 5=very great extent

\*Correlation is significant at the 0.05 level (2-tailed)

\*\*Correlation is significant at the 0.01 level (2-tailed)

### **Research Question 3: What factors influence the usefulness of OPAPA as an emerging delivery strategy of rice information extension?**

In this section, statistical results of the relationships for the usefulness of OPAPA and the gratification and non-gratification variables are presented. Usefulness of OPAPA consisted of 11 Likert scale items measured on a five-point scale that ranged from 1=strongly disagree to 5=strongly agree. The statements were similar to those of KPs except that the word KP was replaced by OPAPA. The rationale for doing this was to identify how perceptions regarding the usefulness of OPAPA diverged or converged from

that of KPs and what factors influenced the usefulness of OPAPA. Table **4-17** shows respondents' perception scores on the usefulness of OPAPA. Data revealed that only 110 of the 135 respondents were aware of OPAPA and had used OPAPA services. All (N=110) respondents were in general "agreement" on the usefulness of OPAPA, as evidenced by the summated mean scores which ranged from a low of 4.22 to a high of 4.51 (Table **4-17**).

Table 4-17: Survey Respondents' Perception Scores on the Usefulness of OPAPA

Respondent Group	Usefulness of OPAPA (11-55)*					
	n	Summated Mean Score	Theoretical Midpoint	Summated Mean SD	Mean Statement Score**	Mean Statement SD
Farmers	24	46.46	33	6.51	4.22	0.59
Extension Agents	33	49.58	33	5.65	4.51	0.51
Barangay Officials	24	47.25	33	6.05	4.30	0.55
MAFC Chairs	29	48.28	33	5.83	4.39	0.53
All	110	48.04	33	6.02	4.37	0.55

\*Numbers in parenthesis indicate the possible range of summated perception scores for usefulness of KPs

\*\*Responses to the statement was scored as follow: 1=strongly disagree; 2=disagree; 3=uncertain; 4=agree; and 5=strongly agree

The mean scores for the seven gratification and five non-gratification variables related to OPAPA are presented in Tables **4-18** through **4-22**. In essence, the definitions of these variables were also the same with those for KPs. Means and standard deviations for each of the statements are found in Table **H-8** through **H-20** in Appendix **H**.

Table **4-18** shows the results for farmers. For all gratification variables, summated mean scores were above the theoretical midpoint. Further, mean statement scores revealed that farmers expressed “agreement” on the gratification items. ACQUISITION OF NEW KNOWLEDGE had the highest mean statement score ( $M=4.75$ ;  $SD=0.41$ ) followed by FUTURE PLANS ( $M=4.50$ ;  $SD=0.52$ ), and SOCIAL ( $M=4.38$ ;  $SD=0.53$ ). Likewise, non-gratification variables exhibited the same results with gratification variables. CONTENT had the highest mean statement score ( $M=4.26$ ;  $SD=0.55$ ), followed by ACCESS ( $M=3.94$ ;  $SD=0.44$ ).

Table 4-18: Farmers' Perception Scores on Gratification and Non-gratification Variables of OPAPA

Independent Variables	n	# of items	Summated Mean Score	Theoretical Midpoint	Summated Mean SD	Mean Statement Score**	Mean Statement SD
<b>Gratifications</b>							
Social (5-25)	24	5	21.58	15	2.70	4.38	0.53
Surveillance (5-25)	24	5	22.50	15	2.60	4.32	0.54
Acquisition of New Knowledge (5-25)	24	5	23.75	15	2.03	<b>4.75</b>	<b>0.41</b>
Future Plans (5-25)	24	5	21.88	15	2.64	4.50	0.52
Entertainment (5-25)	24	5	19.83	15	4.34	3.87	0.64
Peer Pressure (5-25)	24	5	18.54	15	3.62	3.71	0.72
Fame (5-25)	24	5	19.33	15	3.21	3.97	0.87
<b>Non-Gratifications</b>							
Content (6-30)	24	6	25.54	18	3.30	<b>4.26</b>	<b>0.55</b>
Perceived Characteristics of OPAPA (12-60)	24	12	46.88	36	6.07	3.91	0.51
Access (12-60)	24	12	47.25	36	5.29	3.94	0.44
Attitudes toward the Task Requirements of OPAPA (6-30)	24	12	21.17	18	3.67	3.53	0.61
Reliance on OPAPA (12-60)	24	6	22.12	36	6.89	1.84	0.57

\* Numbers in parentheses indicate the possible range of summated perception scores for each of the variables

\*\* Responses to the statement was scored as follow: 1=strongly disagree; 2=disagree; 3=uncertain; 4=agree; and 5=strongly agree; except for reliance on OPAPA which was scored as follows: 1=not at all; 2=some extent; 3=moderate extent; 4=great extent; and 5=very great extent

Table **4-19** shows the results for extension agents. The summated mean scores of extension agents for both the gratification and non-gratification variables were above the respective theoretical midpoints except for the RELIANCE ON OPAPA non-gratification variable. ACQUISITION OF NEW KNOWLEDGE and CONTENT had the highest mean statement scores of 4.73 ( $SD=0.41$ ) and 4.52 ( $SD=0.47$ ), respectively. RELIANCE ON OPAPA variable, which was measured on a different scale (1=not at all to 5=very great extent) indicated that respondents depend on OPAPA to some extent ( $M=2.48$  ( $SD=1.04$ )).

Table 4-19: Extension Agents' Perception Scores on Gratification and Non-gratification Variables of OPAPA

Independent Variables	N	# of items	Summated Mean Score	Theoretical Midpoint	Summated Mean SD	Mean Statement Score**	Mean Statement SD
<b>Gratifications</b>							
Social (5-25)	33	5	22.54	15	2.55	4.70	0.39
Surveillance (5-25)	33	5	23.12	15	2.29	4.51	0.51
Acquisition of New Knowledge (5-25)	33	5	23.67	15	2.06	<b>4.73</b>	<b>0.41</b>
Future Plans (5-25)	33	5	23.52	15	1.95	4.62	0.46
Entertainment (5-25)	33	5	21.18	15	3.53	4.14	0.71
Peer Pressure (5-25)	33	5	19.39	15	4.64	3.88	0.93
Fame (5-25)	33	5	20.70	15	3.55	4.24	0.71
<b>Non-Gratifications</b>							
Content (6-30)	33	6	27.09	18	2.83	<b>4.52</b>	<b>0.47</b>
Perceived Characteristics of OPAPA (12-60)	33	12	49.97	36	5.59	4.16	0.47
Access (12-60)	33	12	44.70	36	9.06	3.72	0.75
Attitudes toward the Task Requirements of OPAPA (6-30)	33	12	23.97	18	3.04	3.98	0.51
Reliance on OPAPA (12-60)	33	6	29.79	36	12.44	2.48	1.04

\* Numbers in parentheses indicate the possible range of summated perception scores for each of the variables

\*\* Responses to the statement was scored as follow: 1=strongly disagree; 2=disagree; 3=uncertain; 4=agree; and 5=strongly agree; except for reliance on OPAPA which was scored as follows: 1=not at all; 2=some extent; 3=moderate extent; 4=great extent; and 5=very great extent

With regard to barangay officials, it is noticeable how the findings were similar and at the same time different with the results of the previous respondent groups (see Table 4-20). The results were similar in the sense that summated mean scores were above the theoretical midpoints denoting positive responses on the variables. However, only RELIANCE ON OPAPA was way below the theoretical midpoint ( $M=23.12$ ;  $SD=10.57$ ). Moreover, the results were different because SOCIAL variable had the highest mean statement score ( $M=4.41$ ;  $SD=0.61$ ) for gratification variable grouping compared to ACQUISITION of NEW KNOWLEDGE for the other three respondent groups. However, CONTENT has still the highest mean statement score of 4.21 ( $SD=0.58$ ) for the non-gratification variables.



Table 4-20: Barangay Officials' Perception Scores on Gratification and Non-gratification Variables of OPAPA

Independent Variables	n	# of items	Summated Mean Score	Theoretical Midpoint	Summated Mean SD	Mean Statement Score**	Mean Statement SD
<b>Gratifications</b>							
Social (5-25)	24	5	21.04	15	2.61	<b>4.41</b>	<b>0.61</b>
Surveillance (5-25)	24	5	21.71	15	3.37	4.21	0.52
Acquisition of New Knowledge (5-25)	24	5	21.83	15	3.07	4.37	0.61
Future Plans (5-25)	24	5	22.04	15	3.06	4.34	0.67
Entertainment (5-25)	24	5	19.36	15	4.42	3.98	0.89
Peer Pressure (5-25)	24	5	17.75	15	4.41	3.55	0.88
Fame (5-25)	24	5	19.88	15	4.46	3.89	0.88
<b>Non-Gratifications</b>							
Content (6-30)	24	6	25.25	18	3.48	<b>4.21</b>	<b>0.58</b>
Perceived Characteristics of OPAPA (12-60)	24	12	46.62	36	8.04	3.88	0.67
Access (12-60)	24	12	43.12	36	8.53	3.59	0.71
Attitudes toward the Task Requirements of OPAPA (6-30)	24	12	21.38	18	4.60	3.56	0.77
Reliance on OPAPA (12-60)	24	6	23.12	36	10.57	1.93	0.88

\* Numbers in parentheses indicate the possible range of summated perception scores for each of the variables

\*\* Responses to the statement was scored as follow: 1=strongly disagree; 2=disagree; 3=uncertain; 4=agree; and 5=strongly agree; except for reliance on OPAPA which was scored as follows: 1=not at all; 2=some extent; 3=moderate extent; 4=great extent; and 5=very great extent

Table **4-21** revealed the results for MAFC Chairs. The data presented in the table did not deviate from the common patterns that were exhibited and discussed in the farmers' and extension agents' categories. All gratification and non-gratification variables had summated scores that were above the respective theoretical midpoints. Data further indicated that ACQUISITION OF NEW KNOWLEDGE and CONTENT variables were rated high and with mean statement scores of 4.61 ( $SD=0.50$ ) and 4.38 ( $SD=0.49$ ), respectively.

Table 4-21: MAFC Chairs' Perception Scores on Gratification and Non-gratification Variables of OPAPA

Independent Variables	n	# of items	Summated Mean Score	Theoretical Midpoint	Summated Mean SD	Mean Statement Score**	Mean Statement SD
<b>Gratifications</b>							
Social (5-25)	29	5	21.83	15	2.94	4.50	0.56
Surveillance (5-25)	29	5	21.86	15	3.05	4.37	0.59
Acquisition of New Knowledge (5-25)	29	5	23.09	15	2.51	<b>4.61</b>	<b>0.50</b>
Future Plans (5-25)	29	5	22.48	15	2.81	4.37	0.61
Entertainment (5-25)	29	5	20.62	15	3.55	4.17	0.94
Peer Pressure (5-25)	29	5	19.48	15	4.31	3.90	0.86
Fame (5-25)	29	5	20.83	15	4.68	4.12	0.71
<b>Non-Gratifications</b>							
Content (6-30)	29	6	26.28	18	2.91	<b>4.38</b>	<b>0.49</b>
Perceived Characteristics of OPAPA (12-60)	29	12	48.28	36	4.45	4.02	0.37
Access (12-60)	29	12	45.59	36	6.62	3.80	0.55
Attitudes toward the Task Requirements of OPAPA (6-30)	29	12	21.83	18	3.23	3.68	0.54
Reliance on OPAPA (12-60)	29	6	24.86	36	11.03	2.07	0.92

\* Numbers in parentheses indicate the possible range of summated perception scores for each of the variables

\*\* Responses to the statement was scored as follow: 1=strongly disagree; 2=disagree; 3=uncertain; 4=agree; and 5=strongly agree; except for reliance on OPAPA which was scored as follows: 1=not at all; 2=some extent; 3=moderate extent; 4=great extent; and 5=very great extent

Table 4-22 shows the results for all respondents. When examined closely, data in Table 4-22 revealed that all survey respondents generally “agreed” to the gratification statements of OPAPA as evidenced by mean statement scores. This finding was similar to that of the non-gratification variables except for RELIANCE ON OPAPA which was measured on a different scale and had a mean statement score of 2.11 ( $SD=0.91$ ). This RELIANCE ON OPAPA mean statement score suggests that respondents depended on OPAPA to some extent.

Overall, it is noteworthy to mention that ACQUISITION OF NEW KNOWLEDGE ( $M=4.62$ ,  $SD=0.50$ ) in the gratification variable category and CONTENT ( $M=4.36$ ,  $SD=0.52$ ) in the non-gratification variable category had consistently high mean statement scores compared to other gratification and non-gratification variables.

Table 4-22: All Survey Respondents' Perception Scores on Gratification and Non-gratification Variables of OPAPA

Independent Variables	n	# of items	Summated Mean Score	Theoretical Midpoint	Summated Mean SD	Mean Statement Score**	Mean Statement SD
<b>Gratifications</b>							
Social (5-25)	110	5	21.82	15	2.72	4.51	0.53
Surveillance (5-25)	110	5	22.34	15	2.85	4.36	0.54
Acquisition of New Knowledge (5-25)	110	5	23.11	15	2.50	<b>4.62</b>	<b>0.50</b>
Future Plans (5-25)	110	5	22.56	15	2.65	4.46	0.58
Entertainment (5-25)	110	5	20.36	15	3.93	4.05	0.80
Peer Pressure (5-25)	110	5	18.87	15	4.29	3.77	0.87
Fame (5-25)	110	5	20.25	15	4.01	4.07	0.79
<b>Non-Gratifications</b>							
Content (6-30)	110	6	26.14	18	3.15	<b>4.36</b>	<b>0.52</b>
Perceived Characteristics of OPAPA (12-60)	110	12	48.12	36	6.13	4.00	0.51
Access (12-60)	110	12	45.14	36	7.66	3.76	0.64
Attitudes toward the Task Requirements of OPAPA (6-30)	110	12	22.23	18	3.75	3.70	0.62
Reliance on OPAPA (12-60)	110	6	25.36	36	10.94	2.11	0.91

\* Numbers in parentheses indicate the possible range of summated perception scores for each of the variables

\*\* Responses to the statement was scored as follow: 1=strongly disagree; 2=disagree; 3=uncertain; 4=agree; and 5=strongly agree; except for reliance on OPAPA which was scored as follows: 1=not at all; 2=some extent; 3=moderate extent; 4=great extent; and 5=very great extent

Pearson Product Moment Correlations (PPMR) and point-biserial correlations were used to identify relationships between usefulness of OPAPA and the gratification and non-gratification variables. Table 4-23 shows the relationships between these variables. Overall, low to substantial significant positive correlations were found between the gratification and non-gratification variables and the usefulness of OPAPA. With regard to the gratification variables, substantial significant positive correlations were found between both FUTURE PLAN ( $r=.64$ ,  $p< 0.01$ ) and SOCIAL ( $r=.64$ ,  $p< 0.01$ ) and usefulness of OPAPA, followed by ACQUISITION OF KNOWLEDGE ( $r=.57$ ,  $p<.01$ ). Further, the rest of the gratification variables (SURVEILLANCE, FAME, PEER PRESSURE, and ENTERTAINMENT) had low to moderate significant positive correlations with usefulness of OPAPA.

For non-gratification variables, CONTENT had substantial significant positive correlation ( $r=.57$ ,  $p<.01$ ) with the usefulness of OPAPA (Table 4-23). Moreover, low to moderate significant positive relationships existed between PERCEIVED CHARACTERISTICS OF OPAPA ( $r=.45$ ,  $p<0.01$ ), ACCESS ( $r=.37$ ,  $p<0.01$ ) and ATTITUDES TOWARD THE TASK REQUIREMENTS OF OPAPA ( $r=0.29$ ,  $p<0.01$ ) and usefulness of OPAPA. RELIANCE ON OPAPA showed no significant relationships with usefulness of OPAPA. READABILITY variable was not computed since all respondents had indicated the same positive response on whether OPAPA is readable or not.

Table 4-23: Correlations between Independent Variables and Usefulness of OPAPA (N=110)

Gratification Variables	Mean <sup>a</sup>	SD	Pearson's r
Future Plans	4.51	0.53	<b>0.64**</b>
Social	4.36	0.54	<b>0.64**</b>
Acquisition of New Knowledge	4.62	0.50	<b>0.57**</b>
Surveillance	4.46	0.58	<b>0.56**</b>
Fame	4.05	0.80	<b>0.38**</b>
Peer Pressure	3.77	0.87	<b>0.28**</b>
Entertainment	4.07	0.79	<b>0.27**</b>
Non-gratification Variables			
Content	4.36	0.52	<b>0.57**</b>
Perceived Characteristics of OPAPA	4.00	0.51	<b>0.45**</b>
Access	3.76	0.64	<b>0.37**</b>
Attitudes toward the Task Requirements of OPAPA	3.70	0.62	<b>0.29**</b>
Reliance on OPAPA	2.11	0.91	0.11

<sup>a</sup>Scale: 1=strongly disagree to 5= strongly agree; except for reliance on OPAPA, 1=not at all to 5=very great extent

\*Correlation is significant at the 0.05 level (2-tailed)

\*\*Correlation is significant at the 0.01 level (2-tailed)

#### **Research Question 4: How do respondent groups (farmers, extension agents, barangay officials and MAFC chairs) evaluate the usefulness of KPs and OPAPA?**

Two inferential statistical techniques -- dependent t-test and one-way analysis of variance (ANOVA) -- were used to determine differences between respondent groups regarding the usefulness of KPs and OPAPA.

Table 4-24 shows the comparison of means. Results indicated that there is no significant difference in means between OPAPA and KNOWLEDGE PRODUCTS for

farmers ( $t= 1.93$ ,  $df= 23$ ,  $p>.05$ ). However, it should be noted that the  $t$  value for farmers is approaching the .05 significance level.

As for extension agents, significant differences in means existed between the usefulness of OPAPA and KPs,  $t= 2.37$ ,  $df= 32$ ,  $p<.05$ . Extension agents perceived KPs as significantly more useful than OPAPA.

For barangay officials, significant differences in means existed between the usefulness of OPAPA and KPs ( $t= 2.77$ ,  $df= 22$ ,  $p<.05$ ). Barangay officials viewed KPs as significantly more useful than OPAPA.

For the last group, MAFC chairs, no significant difference in means existed between OPAPA and KPs ( $t= 1.79$ ,  $df= 27$ ,  $p>.05$ ). However, when the  $t$  value for MAFC chairs was examined, it was approaching the significance level of .05.

Overall, for all respondents, significant differences existed in mean scores between the usefulness of OPAPA and KPs ( $t= 4.12$ ,  $df= 107$ ,  $p<001$ ).



**Table 4-24:** Paired T-test Comparison of Means and Standard Deviations for Usefulness of KPs and OPAPA by Respondent Groups

Respondent Groups	df	Usefulness of KPs		Usefulness of OPAPA		t-value	Sig (2-tail)
		Mean*	SD	Mean*	SD		
Farmers	23	4.53	0.56	4.22	0.59	1.93	.07
Extension Agents	<b>32</b>	<b>4.71</b>	<b>0.31</b>	<b>4.51</b>	<b>0.51</b>	<b>2.37</b>	<b>.02</b>
Brgy. Officials	<b>22</b>	<b>4.53</b>	<b>0.34</b>	<b>4.35</b>	<b>0.49</b>	<b>2.77</b>	<b>.01</b>
MAFC	27	4.53	0.54	4.38	0.54	1.79	.09
All Respondents	<b>107</b>	<b>4.59</b>	<b>0.45</b>	<b>4.38</b>	<b>0.53</b>	<b>4.12</b>	<b>.01</b>

\*Scale: 1=strongly disagree to 5=strongly agree

To test the differences in means of usefulness of KP or OPAPA among the four respondent groups, ANOVA was used. No significant differences in mean ratings of KPs existed as perceived by the four group respondents ( $F=1.93$ ;  $df=3$ ;  $p>0.05$ ). For OPAPA also, no significant differences were found among respondent groups ( $F=1.44$ ;  $df=3$ ;  $p>0.05$ ). See Figure 4-4.

Usefulness of Extension Strategies	Respondent Groups			
	Farmers	Extension Agents	Barangay Officials	MAFC Chairs
Usefulness of KPs	4.53	4.71	4.48	4.53
	F= 1.93; df= 3; p>.05			
Usefulness of OPAPA	4.22	4.51	4.30	4.39
	F= 1.44; df= 3; p>.05			

\*Mean computed on 1 to 5 scale (strongly disagree to strongly agree)

Figure 4-4: ANOVA Results: Usefulness of KPs and OPAPA of Group Respondents

**Research Question 5: Is there a relationship between sociodemographic variables and usefulness of rice extension materials?**

This section presents the relationships between sociodemographic variables discussed earlier and the respondents' perception on the usefulness of rice extension materials, KPs and OPAPA. The independent variables were the sociodemographics and the dependent variable was the usefulness of KPs or OPAPA. Eleven Likert-type questions (measured on 1=strongly disagree to 5= strongly agree) were used to measure the respondents' perception on the usefulness of KPs and OPAPA. Summated mean

scores for KPs and OPAPA are presented earlier in Table **4-10** and Table **4-17**, respectively.

The relationship between sociodemographic variables and usefulness of rice extension materials were examined using point-biserial correlations and Pearson Product Moment Correlations (PPMR). Associations between sociodemographic variables and the summated scores for usefulness of KPs by respondent groups are presented and summarized in Tables **4-25** and **4-26**, while Tables **4-27** and **4-28** present the results for OPAPA.

### **Sociodemographics and Usefulness of KPs**

Table **4-25** shows the variables that were analyzed using PPMR since these variables were on an interval/ratio scale. Overall, there were no sociodemographic variables associated with the usefulness of knowledge products. However for extension agents, the number of children with computer background has a negative moderate correlation with the usefulness of knowledge products ( $r=-0.34$ ,  $p<.05$ ).

Table 4-25: Correlations between Sociodemographic Factors and Usefulness of Knowledge Products

Sociodemographic Variables	Usefulness of Knowledge Products				
	Farmers	Extension Agents	Brgy. Officials	MAFC	All
Age	0.11	0.02	0.10	0.08	0.01
Distance of House to PhilRice	0.14	-0.06	0.09	0.15	0.07
Distance House to ATI	0.33	-0.07	0.04	0.15	0.05
Size of Farm	0.20	NA	NA	NA	NA
Distance of Farm to PhilRice	0.14	NA	NA	NA	NA
Distance of Farm to ATI	0.32	NA	NA	NA	NA
Average Gross Income	-0.16	NA	NA	NA	NA
Years in Primary Occupation	0.13	0.16	-0.05	0.31	0.15
Number of Children with Computer background	0.02	<b>-0.34*</b>	0.29	0.22	0.06

\*Correlation is significant at the 0.05 level (2-tailed)

NA-Means not applicable variable

A set of sociodemographic variables measured on a nominal, dichotomous scale were analyzed using point-biserial correlations. These variables were: 1) gender, 2) education, and 3) land tenure status specific for farmer-respondents. Since educational attainment and land tenure status had several levels, the levels were collapsed to create artificially dichotomized variables in order to compute point-biserial correlation coefficients. Educational attainment was grouped into 1) less than college and 2) had some college or more while land tenure status was grouped into 1) owners and 2) tenants.

Table 4-26 shows results for all respondents. There were no significant correlations between sociodemographic variables and usefulness of KPs. However for the respondent groups, land tenure status for farmers ( $r_{pt\ bis} = 0.42$ ,  $p < .05$ ) and gender for MAFC chairs ( $r_{pt\ bis} = -0.36$ ,  $p < .05$ ) revealed moderate correlations with usefulness of KPs.

Table 4-26: Relationships between Select Sociodemographic Factors and Usefulness of Knowledge Products

Respondent Groups	Sociodemographic Factors						Point-Biserial Correlations
	<b>Gender</b>						
	N	Male Mean <sup>a</sup>	SD	N	Female Mean <sup>a</sup>	SD	
Farmers	25	4.53	0.56	3	4.39	0.56	-0.08
Extension Agents	11	4.74	0.24	25	4.70	0.33	-0.07
Barangay Officials	30	4.46	0.33	1	5.00	--	0.29
MAFC Chairs	30	4.61	0.44	3	3.97	1.00	<b>-0.36*</b>
All	96	4.56	0.43	32	4.61	0.47	0.05
	<b>Education</b>						
	Less than college			Some College or More			
	N	Mean <sup>a</sup>	SD	N	Mean <sup>a</sup>	SD	
Farmers	21	4.49	0.50	9	4.64	0.63	0.13
Extension Agents	0	0.00	0.00	35	4.72	0.31	--
Barangay Officials	8	4.28	0.38	23	4.54	0.31	0.34
MAFC Chairs	9	4.74	0.42	24	4.47	0.55	-0.23
All	38	4.50	0.47	91	4.60	0.43	0.10
	<b>Land Tenure Status</b>						
	Owner			Tenant			
	N	Mean <sup>a</sup>	SD	N	Mean <sup>a</sup>	SD	
Farmers	14	4.77	0.35	23	4.48	0.57	<b>0.42*</b>

\*Correlation is significant at the 0.05 level (2-tailed)

<sup>a</sup>Scale: 1= strongly disagree to 5= strongly agree

The next section discusses the relationships between sociodemographics and the usefulness of OPAPA.

### **Sociodemographics and Usefulness of OPAPA**

Table 4-27 shows that for all four groups of respondents, no relationships existed between sociodemographic variables and usefulness of OPAPA. However, a moderate significant positive correlation ( $r=0.41$ ,  $p<.05$ ) was found between years in primary occupation and usefulness of OPAPA for MAFC chairs.

Table 4-27: Correlations between Sociodemographics and Usefulness of OPAPA

Sociodemographic Variables	Usefulness of OPAPA				
	Farmers	Extension Agents	Brgy. Officials	MAFC	Total
	Pearson's r values				
Age	-0.02	0.19	-0.02	0.30	0.08
Distance of house to PhilRice	0.08	-0.15	0.20	0.32	0.12
Distance of house to ATI	0.31	-0.10	0.02	0.36	0.10
Distance of farm to PhilRice	0.80	NA	NA	NA	NA
Distance of farm to ATI	0.31	NA	NA	NA	NA
Size of Farm	-0.00	NA	NA	NA	NA
Gross Income	-0.02	NA	NA	NA	NA
Years in Primary Occupation	-0.22	0.25	-0.24	<b>0.41*</b>	0.04
Number of Children with Computer background	0.10	-0.11	0.30	0.16	0.08

\*Correlation is significant at the 0.05 level (2-tailed)

NA-Means not applicable variable

Table 4-28 shows the point-biserial correlations of sociodemographics like gender, education, and land tenure status. The table revealed that there were no sociodemographic variables that are related with the usefulness of OPAPA services.



Table 4-28: Relationships between Select Sociodemographic Factors and Usefulness of OPAPA

Respondent Groups	Sociodemographic Factors						Point-Biserial Correlations
	<b>Gender</b>						
	N	Male Mean <sup>a</sup>	SD	N	Female Mean <sup>a</sup>	SD	
Farmers	20	4.19	0.64	2	4.41	0.19	0.11
Extension Agents	10	4.55	0.43	23	4.49	0.55	-0.06
Barangay Officials	23	4.30	0.56	1	4.18	--	-0.04
MAFC Chairs	25	4.41	0.54	3	4.33	0.58	-0.05
All	78	4.34	0.56	29	4.45	0.52	0.09
	<b>Education</b>						
	Less than college			Some College or More			
	N	Mean <sup>a</sup>	SD	N	Mean <sup>a</sup>	SD	
Farmers	15	4.06	0.51	9	4.49	0.64	0.36
Extension Agents	0	0.00	0.00	32	4.49	0.51	--
Barangay Officials	5	4.15	0.49	19	4.33	0.57	0.14
MAFC Chairs	8	4.48	0.39	20	4.40	0.56	-0.07
All	28	4.19	0.50	80	4.43	0.55	0.17
	<b>Land Tenure Status</b>						
	Owner			Tenant			
	N	Mean <sup>a</sup>	SD	N	Mean <sup>a</sup>	SD	
Farmers	14	4.23	0.63	17	4.39	0.61	0.01

<sup>a</sup>Scale: 1=strongly disagree to 5= strongly agree

## **Chapter 5**

### **Summary, Conclusions, Implications and Recommendations**

This chapter presents the summary, conclusions, and recommendations of the study. It is organized into five sections: 1) purpose of the study and research questions, 2) summary of study procedures, 3) findings by research questions, 4) conclusions and discussion, and 5) implications and recommendations.

### **Purpose of the Study and Research Questions/Objectives**

The overall purpose of the study was to assess the usefulness of rice extension materials in the Philippines specifically in Northern Luzon, Philippines. The specific research questions of the study were:

- 1) What are the sociodemographic characteristics of rice extension material users?
- 2) What factors influence the usefulness of knowledge products as a traditional mass approach in disseminating rice information?
- 3) What factors influence the usefulness of OPAPA as an emerging delivery strategy of rice information extension?
- 4) How do respondent groups (farmers, extension agents, barangay officials and MAFC chairs) evaluate the usefulness of KPs and OPAPA?
- 5) Is there a relationship between sociodemographic variables and usefulness of rice extension materials?

To guide the discussion, Figure 5-1 reiterates the conceptual framework used for this study.

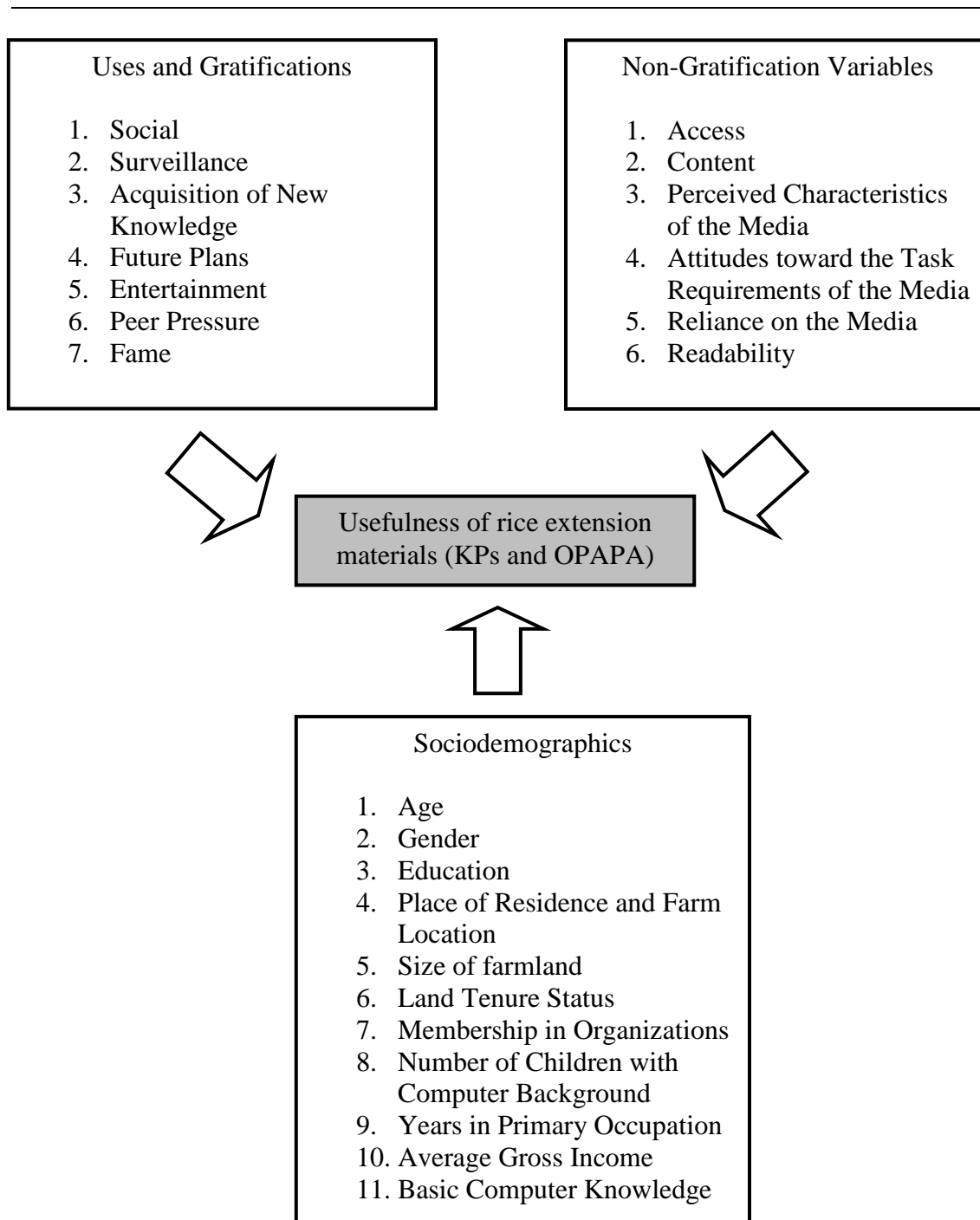


Figure 5-1: Conceptual Framework for the Study

### Summary of Study Procedures

The study was conducted in the Northern part of Luzon which covered three regions in the Philippines under the area of responsibility of PhilRice-Batac. The three regions are Ilocos, Cagayan Valley, and Cordillera Administrative Region. See Table **I-2** in Appendix **9**. Agriculture is the major source for income in these regions. Before the research was conducted, approval for human subjects was obtained from the Penn State Office of Research Protections.

The study was descriptive-correlational in design. An exhaustive list of farmers, extension agents, barangay officials, and MAFC chairs who have undergone the OPAPA training was obtained from the Philippine Rice Research Institute-Batac branch. The list was purged for duplications to come up with the accessible population.

The data sample for the study was  $n=135$ . Usable data were provided by all the 135 survey respondents. For the purpose of the study, respondents were considered a census of the training participants and as a convenient nonrandom “slice sample” since other populations with the same characteristics exist in the Philippines (Oliver and Hinkle, 1981). Descriptive and inferential statistics were used to analyze data. Data were analyzed using SPSS v.16.

Data were collected using certified enumerators in February to March 2008. The enumerators participated in a one-day orientation regarding appropriate procedures to use for data collection. A survey manual, Likert-scale pictogram, and informed consent forms were given to the enumerators. The data were encoded in Microsoft Excel 2003 by a

hired data encoder after the survey. The Excel file was then converted to SPSS by the researcher.

### **Instrumentation**

A survey questionnaire was developed based on the review of literature. The instrument was organized into six sections: 1) usefulness of knowledge products, 2) factors related to the usefulness of knowledge products, 3) usefulness of OPAPA, 4) factors related to usefulness of OPAPA, 5) reliance on mass information delivery strategies/web-based services, and 6) sociodemographics. The gratification variables included in the sections regarding the usefulness of KPs and OPAPA were adaptation of Charney and Greenberg (2002) study. The rest of the variables were from salient theories on technology uses and adoption (Bjiker et al., 1987; Irani, 2000). A panel of experts at Penn State and PhilRice examined the survey instrument for content and face validity.

The survey instrument was then translated into Ilocano, the dialect used in the survey area. Also, the instrument was pilot-tested in Muñoz, Nueva Ecija, Philippines in February 2008 for estimating reliability using 22 individuals who were not part of the study. The overall Cronbach's alpha for the sections on KPs and OPAPA were "excellent" ( $\alpha=.97$  respectively). Hence, no major revisions were made to the survey instruments.

## Summary of Findings by Research Questions

For ease of discussion, the summary of findings is presented by research questions.

### **Research Question 1: What are the sociodemographic characteristics of rice extension material users?**

The sociodemographic characteristics examined in this study were: 1) age, 2) gender, 3) education, 4) place of residence, 5) farm location, 6) size of farm, 7) land tenure status, 8) membership in organizations, 9) number of children with computer background, 10) years in primary occupation, 11) average gross income and 12) basic computer knowledge before the OPAPA training. The summary of findings on this research question is organized according to the four respondents groups included in the study.

#### Farmers

Almost 36% of rice farmers were between 51 to 60 years old. The average age for farmers was 52.82 ( $SD=11.71$ ). Eighty-nine percent were males while 11% were females. Approximately 36% of farmers had a high school education. Almost all of the farmers were within 30 kms from a major government institution (PhilRice and ATI) and possible secondary rice information sources like chemical companies, seed and fertilizer dealers, and farm cooperatives.

Farmers had an average farm size of 0.96 hectare ( $SD=0.93$ ) which is lower than the national average rice paddy size of 1.14 hectares in 2002 (PhilRice, 2007). Seventy-seven percent of farmers were tenants compared to 45% who were owners. Farmers spent an average 28 years in farming as their primary occupation ( $SD=15.52$ ). Conversely, the farmers' gross income from rice ranged from P11, 608.38 to P100, 000.55 (with \$1=P45 approximately). It should be noted that the farmers included in the study also planted vegetables since the most common cropping pattern in the areas is rice-vegetables. Ninety-four percent of farmers were members of rice-related/rice farm organizations. Farmers averaged two children ( $SD=1.09$ ) with a computer background. Additionally, before the OPAPA training, only seven percent of the farmers had basic computer knowledge.

#### Extension Agents

Extension agents ranged in age from 21-30 to 51-60 years with a mean of 42.39 years ( $SD=11.79$ ). The majority (69.4%) of the extension agents were females in contrast to the rest of the respondent groups. Further, extension agents had the highest percentage (91.4%) of college graduates and the remaining extension agents had some college. This fact may be attributed to their job requirement.

Almost 56% percent of extension agents lived within the 30 km radius from PhilRice and ATI and the same secondary information sources with that of the farmers. Also, sixty-one percent of extension agents were members of rice-related/rice farm

organizations, the lowest among the respondent groups. On average, extension agents reported 18 years of experience ( $SD=11.60$ ).

With regard to number of children who have basic computer knowledge, extension agents had an average of almost two children ( $SD=1.02$ ). Moreover, more than 50% of extension agents had basic computer knowledge even before the OPAPA training, the highest among respondent groups.

### Barangay Officials

Males comprised 93.9% of barangay officials and 41.4% were in the 51 to 60 age category with a mean of 48 ( $SD=10.46$ ). Approximately sixty-seven percent (66.7%) reported undergraduate degrees as their highest educational level and 63.6% were members of rice-related/rice farm organizations. Barangay officials reported an average of 12.97 ( $SD=13.09$ ) years in their respective primary occupations. It should be noted that the primary occupation of this respondent group might not be as barangay official since a barangay official only served for a number of years for the position is based on election. Almost 50% of barangay officials lived near PhilRice, ATI and other secondary sources of rice information.

Barangay officials had two or more children with computer background ( $M=2.00$ ,  $SD=1.54$ ). Almost 46% of these barangay officials reported basic computer knowledge before they underwent the OPAPA training.



## MAFC Chairs

Thirty-four percent of MAFC chairs were between 51 to 60 years with a mean of 52 years ( $SD=11.60$ ). Males comprised 91% of MAFC chairs. Approximately 45% reported that they had some college and 27% had obtained undergraduate degrees. Only 28% of MAFC chairs were within the 30 km radius from PhilRice and ATI. However, they lived closer to secondary sources of information and surprisingly, 94.3% were members of farm organizations, the highest among respondent groups. This maybe attributed to the fact that some of the MAFC chairs were also farmers.

MAFC chairs had two or more children with computer background ( $M=1.63$ ,  $SD=1.40$ ). However, only 20% of the MAFC chairs had basic computer/Internet background. MAFC chairs spent an average of 23 years ( $SD=16.14$ ) in their primary occupation.

### **Research Question 2: What factors influence the usefulness of knowledge products as a traditional mass approach in disseminating rice information?**

#### Gratification Variables and Usefulness of KPs

Bivariate analysis was completed to examine the relationship between gratification variables and usefulness of KPs. Usefulness of KPs is based on 11 statements using a five-point Likert-scale (1=strongly disagree to 5=strongly agree). Gratification variables were grouped into seven factors and each factor had five statements, measured on a five-point Likert scale (1=strongly disagree to 5=strongly

agree). Gratification variables were the motives, needs, uses that should be satisfied by KPs so that respondents would perceive KPs as useful.

Findings revealed that perceptions on the usefulness of KPs by the four respondent groups were very high as evidenced in the summated scores. The summated scores of usefulness of KPs were then correlated with the seven gratification factors. Low to very strong, significant, positive relationships were found between gratification factors, 1) social, 2) entertainment, 3) acquisition of new knowledge, 4) surveillance, 5) peer pressure, 6) future plans, and 7) fame, and usefulness of knowledge products.

Table **5-1** presents a summary of the correlations for usefulness of KPs and OPAPA with gratification and non-gratification variables.

Table 5-1: Summary for the Relationships Between Gratification, Non-Gratification Factors and Usefulness of KPs and OPAPA based on Davis' Conventions

Independent Variables	Usefulness of KPs			Usefulness of OPAPA		
	Negligible (.01 to .09)	Low to Moderate (.10 to.49)	Substantial to Very Strong (.50 up)	Negligible (.01 to .09)	Low to Moderate (.10 to.49)	Substantial to Very Strong (.50 up)
<b>Gratification Variables</b>						
Social			<b>0.71**</b>			<b>0.64**</b>
Surveillance			<b>0.58**</b>			<b>0.56**</b>
Acquisition of New Knowledge			<b>0.53**</b>			<b>0.57**</b>
Future Plans		<b>0.44**</b>				<b>0.64**</b>
Entertainment		<b>0.37**</b>			<b>0.27**</b>	
Peer Pressure		<b>0.27**</b>			<b>0.28**</b>	
Fame		<b>0.22*</b>			<b>0.38**</b>	
<b>Non-Gratification Variables</b>						
Content			<b>0.57**</b>			<b>0.57**</b>
Perceived Characteristics of KPs			<b>0.55**</b>		<b>0.45**</b>	
Access		<b>0.37**</b>			<b>0.37**</b>	
Attitudes towards Task Requirement of KPs		<b>0.36**</b>			<b>0.29**</b>	
Reliance		<b>0.29**</b>		0.11		

\*Correlation is significant at the 0.05 level (2-tailed)

\*\*Correlation is significant at the 0.01 level (2-tailed)

Based on Davis' (1971) conventions, the SOCIAL factor indicated a very strong relationship ( $r=0.71$ ,  $p<0.01$ , 2-tailed) with usefulness of KPs. This showed that as perceived uses of KPs satisfied the SOCIAL needs of the respondents, their perceptions on the usefulness of KPs substantially increased.

SURVEILLANCE, another gratification variable indicated substantial significant positive relationship ( $r=0.58$ ,  $p<0.01$ , 2-tailed) with the usefulness of KPs, suggesting that as KPs fulfill SURVEILLANCE needs, usefulness of KPs also increased.

Another gratification variable, ACQUISITION OF NEW KNOWLEDGE showed a substantial significant positive relationship ( $r=0.53$ ,  $p<0.01$ , 2-tailed) with usefulness of KPs suggesting that as respondents' perception on the ACQUISITION OF NEW KNOWLEDGE increased because of information offered by KPs, perceived usefulness of KPs also increased.

The rest of the gratification factors showed low to moderate significant positive relationships with usefulness of KPs. These factors were: FUTURE PLANS ( $r=0.44$ ,  $p<0.01$ , 2-tailed), ENTERTAINMENT ( $r=0.37$ ,  $p<0.01$ , 2-tailed), PEER PRESSURE ( $r=0.27$ ,  $p<0.01$ , 2-tailed), and FAME ( $r=0.22$ ,  $p<0.05$ , 2-tailed). Moderate significant positive correlations of FUTURE PLANS and ENTERTAINMENT suggested that these gratification factors also influenced usefulness of KPs albeit moderately. As for PEER PRESSURE and FAME, respondents viewed these factors as having low influence on the usefulness of KPs.

## Non-gratification Variables and Usefulness of KPs

Non-gratification factors/variables which contribute to KPs' usefulness were factors that went beyond individual psychological motives in using KPs. These factors were a combination of internal and external factors that affect usefulness of extension materials. Factors that were considered as "internal" to the individuals were perceived characteristics of KPs, attitudes toward the task requirements of KPs, and reliance on KPs. In contrast, external factors were access, content, and readability.

Non-gratifications factors, namely, 1) access, 2) perceived characteristics, 3) attitudes toward the perceived characteristics, 4) content, 5) reliance, and 6) readability were correlated with usefulness of KPs. Moderate to substantial significant positive relationships were found between the five non-gratification factors (excluding READABILITY) and usefulness of KPs.

CONTENT (statements regarding relevance, organization, and importance of topics in KPs) dominated all other non-gratification variables with a substantial significant positive correlations ( $r=0.57$ ,  $p<0.01$ , 2-tailed) with usefulness of KPs, followed by PERCEIVED CHARACTERISTICS OF KPs with a substantial significant positive correlations ( $r=0.55$ ,  $p<0.01$ , 2-tailed). ACCESS ( $r=0.37$ ,  $p<0.01$ , 2-tailed) and ATTITUDES TOWARD THE TASK REQUIREMENTS OF KPs ( $r=0.36$ ,  $p<0.01$ , 2-tailed) had moderate significant positive relationships with usefulness of KPs. A low significant positive relationship ( $r=0.29$ ,  $p<0.01$ , 2-tailed) was found between RELIANCE and usefulness of KPs. Readability was the only non-gratification variable that was not related with usefulness of KPs.

**Research Question 3: What factors influence the usefulness of OPAPA as an emerging delivery strategy of rice information extension?**

## Gratifications and Usefulness of OPAPA

The third research question examined the relationships between gratifications variables and usefulness of OPAPA. Eleven statements regarding the usefulness of OPAPA were developed. The statements were similar to those used for KPs and were also measured on a five-point Likert-scale (1=strongly disagree to 5=strongly agree). The same KP gratification groupings were also utilized for OPAPA. The rationale for doing this was to identify how perceptions regarding the usefulness of OPAPA diverged or converged with that of KPs.

Data revealed that fewer number of respondents (110 compared to 131 out of 135 respondents for KPs) were aware and had used OPAPA. However, all the 110 respondents were in general “agreement” on the usefulness of OPAPA as revealed by high summated mean scores. When bivariate analyses were completed, low to substantial, significant, positive correlations were found between the seven gratification factors, 1) social, 2) entertainment, 3) acquisition of new knowledge, 4) surveillance, 5) peer pressure, 6) future plans, and 7) fame, and usefulness of OPAPA.

Four gratification factors showed substantial significant positive relationship with usefulness of OPAPA. These include FUTURE PLANS ( $r=0.64$ ,  $p<0.01$ , 2-tailed), SOCIAL ( $r=0.64$ ,  $p<0.01$ , 2-tailed), ACQUISITION OF NEW KNOWLEDGE ( $r=0.57$ ,  $p<0.01$ , 2-tailed) and SURVEILLANCE ( $r=0.56$ ,  $p<0.01$ , 2-tailed). It should be noted that FUTURE PLANS has tied with the SOCIAL factor and still SURVEILLANCE and

ACQUISITION OF NEW KNOWLEDGE factors have more or less the same correlation values with that of KPs. These particular findings suggested that respondents viewed these four gratification variables as primary factors that influence usefulness of rice extension delivery strategies/materials.

The remaining gratification variables, FAME ( $r=0.38$ ,  $p<0.01$ , 2-tailed), PEER PRESSURE ( $r=0.28$ ,  $p<0.01$ , 2-tailed), and ENTERTAINMENT ( $r=0.27$ ,  $p<0.01$ , 2-tailed) showed low to moderate significant positive relationships with usefulness of OPAPA. These findings suggest that as perceptions on the gratification variables increased, then perceived usefulness of OPAPA also increased.

#### Non-gratification Variables and Usefulness of OPAPA

Non-gratification variables such as 1) access, 2) content, 3) perceived characteristics of the media, 4) attitudes toward task requirements of the media, 5) readability and 6) reliance were correlated with the usefulness of OPAPA. Positive low to substantial relationships were found between non-gratification variables and usefulness of OPAPA.

CONTENT had the highest significant positive correlation ( $r=0.57$ ,  $p<0.01$ , 2-tailed) among the non-gratification variables, followed by PERCEIVED CHARACTERISTICS OF OPAPA ( $r=0.45$ ,  $p<0.01$ , 2-tailed), ACCESS ( $r=0.37$ ,  $p<0.01$ , 2-tailed), and ATTITUDES toward the TASK REQUIREMENTS OF OPAPA ( $r=0.29$ ,  $p<0.01$ , 2-tailed). With regard to readability, all respondents affirmed that OPAPA's text was readable. Finally, no relationship ( $r=0.11$ ,  $p>0.05$ ) existed between RELIANCE on

OPAPA and usefulness of OPAPA. This finding may mean that usefulness of an ICT-mediated is not affected whether respondents were dependent on it for rice information. Reliance on the existing rice information source like OPAPA can be a function also of whether one has access to such information source.

**Research Question 4: How do respondent groups (farmers, extension agents, barangay officials, and MAFC chairs) evaluate the usefulness of KPs and OPAPA?**

Another research question of this study was to compare how respondent groups perceived the usefulness of KPs and OPAPA. Paired t-test and one-way ANOVA were computed to compare means of the usefulness of KPs and OPAPA rice extension materials to determine if there are statistical differences in means on the usefulness of KPs and OPAPA as perceived by the four respondent groups.

For all respondents, significant differences in means were found between usefulness of KPs and OPAPA ( $t=4.12$ ,  $p<.01$ , 2-tailed,  $df=107$ ). For the extension agents, significant differences in means were found between usefulness of KPs and OPAPA ( $t=2.37$ ,  $p<.05$ , 2-tailed). Similarly, significant differences were found between usefulness of KPs and OPAPA for barangay officials ( $t=2.77$ ,  $p<.05$ , 2-tailed). However, no significant differences were found for farmers and MAFC chairs. It should be noted that the differences were approaching significance (0.05 level) for these two groups. See Table 4-24.

Further, to know the differences in means among respondent groups for usefulness of KPs and OPAPA, a one-way ANOVA was used. The data yielded no



significant differences in means of KPs and OPAPA among respondent groups. Refer to Figure 4-4.

**Research Question 5: Is there a relationship between sociodemographic variables and usefulness of rice extension materials?**

To address the research question, sociodemographic variables of the respondents were correlated with the usefulness of KPs and OPAPA.

**Sociodemographic Variables and Usefulness of KPs**

The relationships between sociodemographic variables and usefulness of rice extension materials revealed moderate relationships.

For all respondents, there were no significant relationships between sociodemographic variables and usefulness of KPs. However, the LAND TENURE STATUS variable for farmers was positively correlated ( $r_{pt\ bis}=0.42$ ,  $p<0.05$ , 2-tailed) with KPs' usefulness. Examination of the data revealed higher mean scores for rice farm owners.

On the other hand, for extension agents, NUMBER OF CHILDREN WITH COMPUTER BACKGROUND indicated moderate significant negative relationship ( $r=-0.34$ ,  $p<0.05$ , 2-tailed) with usefulness of KPs. This indicated that as the number of children with computer background increases in an extension agent's household, perceptions on the usefulness of KPs decreases at a moderate rate. Perhaps this outcome is due to increasing preference for alternative information delivery like what OPAPA

offers. Moreover, ICT-mediated extension like OPAPA may be seen as “interesting” and “appealing” within the household since the level of computer/Internet literacy of the children fits with the skill required to access OPAPA.

Additionally, for MAFC chairs, a moderate significant negative correlation ( $r_{pbis} = -0.36, p < 0.05, 2\text{-tailed}$ ) was found between GENDER and usefulness of KPs. When means were examined for gender of MAFC chairs, males had higher scores than females. However, caution should be used when interpreting this data, since the majority of the MAFC chairs were males. The only respondent group which did not show any relationship between sociodemographic variables and usefulness of KPs was barangay officials.

#### Sociodemographic Variables and Usefulness of OPAPA

The data showed that for all respondents, no significant relationships were found between sociodemographic variables and usefulness of OPAPA. However, for the respondent groups, only one significant relationship was found; that is, for MAFC chairs, the variable YEARS IN PRIMARY OCCUPATION and usefulness of OPAPA ( $r = 0.41, p < 0.05, 2\text{-tailed}$ ), suggesting that as years spent in primary occupation increased, perceptions on the usefulness of OPAPA also increased.

## **Conclusions, Discussions, and Implications**

The following conclusions and discussions were made based on the findings of the study.

### **Sociodemographics of Rice Extension Material Users**

This study profiled the sociodemographic characteristics of rice extension material users in Northern Luzon, Philippines, the area of responsibility for PhilRice-Batac Branch. Ten sociodemographic variables were identified, based on literature, to describe the characteristics of the four respondent groups included in the study.

1. Based on age and number of children with computer background, it can be concluded that all respondent groups with the exception of extension agents were in the older cohort and had children with basic computer background. Since rice farming is considered a household endeavor in the Philippines (Dawe, 2006), identification of possible trainees/rice extension material targets within the household should be undertaken for OPAPA and KPs. Program planners should not rely on the assumption that farmers themselves are the primary receivers and consumers of rice information. The need exists to include the children of the respondents who reported having the basic computer background, a necessary skill needed to access OPAPA services. Perhaps, this need will culturally sensitize younger generations to rice agriculture and at the same time, help them convey the rice information to their parents.

2. Regarding gender, it can be concluded that extension's effort should also be invested in mainstreaming women as stakeholders of rice information and

communication materials especially when farm diversity was an acknowledged fact (Sachs, 1996; Tanzo, 2005). Inclusion of women into rice training and information campaigns should be recognized since decisions within rice farms are managed by the household including women, not just by a single individual (Tanzo, 2005; Dawe, 2006).

3. Need exists to consider educational attainment of respondents. Such consideration will provide a roadmap when developing extension strategies for the respective rice stakeholders. This approach can ensure that extension delivery mechanisms are developed in accordance with the educational characteristics of the rice information consumers.

4. With regard to residence, it can be concluded that those farmers who resided close to PhilRice-Batac were the ones who had more access to trainings such as the OPAPA training compared to those who lived farther from such sources. The significance of distance is noticeable when all farmers were within the 30- km radius of PhilRice-Batac and DA-ATI. In contrast, the remaining respondent groups were from all over Northern Luzon. It should be noted, however, that these key personnel, i.e. extension agents, barangay officials, and MAFC chairs, were PhilRice rice production training participants. Hence, when PhilRice conducts rice information campaigns and training, a feedback mechanism on whether the key personnel who participated in OPAPA training were able to duplicate the training and communicate the salient points of the training to their respective constituents, should be ensured and prioritized. Also, there were secondary sources (chemical companies, seed and fertilizer dealers, and farmer cooperatives) within the 30 km radius of each rice stakeholder as revealed by the data, suggesting that the availability of rice extension materials should be strengthened

involving these secondary information sources for ease of access. The secondary sources can serve as farmer networks that can provide access for KPs distribution and OPAPA connectivity.

5. Overall, the sociodemographic profile of the four respondent groups showed that inherent characteristics of the respective groups should be understood when planning and designing rice-related training materials. Further, it can be concluded that audience segmentation and analysis should be undertaken based on sociodemographics to offer appropriate, need-based training for the respective groups. Conversely, examining the full continuum of sociodemographic characteristics for training participants should be undertaken to accommodate the needs and varying sociodemographic profiles of rice stakeholder groups. This finding supported the recommendation of Radhakrishna et al. (2003) and Laughlin and Schmidt (1995) on the importance of audience analysis when selecting effective and efficient delivery methods for transferring information.

### **Relationship between Sociodemographics and Usefulness of Rice Extension Materials**

Aside from the sociodemographic profiles of rice extension material users, the study also examined the relationships between the sociodemographic factors and the usefulness of rice extension materials. Ten sociodemographic variables were correlated with perceived usefulness of rice extension materials.

Overall, there was no significant relationship between sociodemographic variables and usefulness of rice extension materials, KP or OPAPA. This was in contrast with the literature (e.g. Losh, 2004; Wilson et al., 2003; Shelley et al., 2003; Lin, 1998)

that indicated the influence of sociodemographics. However, for specific respondent groups, there were significant sociodemographic variables that influenced usefulness of KPs and OPAPA. Perhaps the non-association of sociodemographic variables and usefulness of rice extension materials can be explained by the homogeneity of the respondent groups, meaning there was not much variation in the sociodemographic characteristics within and between respondent groups. Despite the insignificant statistical relationships for sociodemographic variables and usefulness of KPs and OPAPA, particular characteristics of the respondent groups should not be overlooked and downplayed. The sociodemographic characteristics are important considerations in delivering effective and efficient rice information extension (Radhakrishna et al., 2003).

The findings in this study support the study of Caldwell and Richardson (1995) indicating that age, education level, size of farming operation, or number of information sources generally had no influence on the preferences of farmers. Also in the case of KPs that were disseminated since the establishment of PhilRice, it is plausible to agree with Lin and Atkin's (2002) observation that demographics were less important when innovations were gone past the early adopters. However, in the case of OPAPA, it is surprising how sociodemographics were inconsistent in association with this newly established rice information strategy. Perhaps it is more logical to assume that sociodemographics were not that important when variables beyond sociodemographics such as gratification and non-gratification factors were well-correlated with the usefulness of KPs and OPAPA.

### **Factors that Influence Usefulness of KPs**

In contrast to sociodemographics, gratification and non-gratification variables were found to be associated with the usefulness of KPs. Gratification variables like SOCIAL, SURVEILLANCE, and ACQUISITION OF NEW KNOWLEDGE were the top three variables having significant substantial positive correlations with usefulness of KPs. On the other hand, CONTENT and PERCEIVED CHARACTERISTICS OF KPs were the non-gratification variables found to have significant substantial positive relationships with usefulness of KPs.

The SOCIAL aspect as motivation for respondent groups to rate KPs as useful should be given attention by program planners and rice information sources. The ACQUISITION OF NEW KNOWLEDGE variable and how it is embedded within SOCIAL/community settings should be studied on what Hassanein (1999) discussed on the significance of “trading ideas and transforming agriculture” within a farming network. Further, when SURVEILLANCE is also a substantial significant factor, it is imperative for Philippine rice extension to not only offer updated and trustworthy rice information but also recommend rice news and rice production events that are not available elsewhere. Thus, it is beneficial to examine KPs with regard to these variables to achieve maximum usefulness of KPs to the different rice stakeholders.

With regard to the non-gratification factors, CONTENT should be relevant to the needs of the KP users. Further, how they perceived the characteristics of KPs should also be given attention since how they view KPs influence usage and usefulness of KPs.

To take into consideration the significant relationships found in this study, rice extension program planners should examine the gratification and non-gratification variables that influence perception on how useful KPs are. To establish the personal and collective (community) purposes of rice information users based on uses and gratifications of KPs is a significant primary step in recognizing the social/individual cognitive aspects of KPs. On the other hand, the non-gratification variables incorporated in this study should also be given emphasis since these variables create an encouraging environment for the rice information users to access KPs.

### **Factors that Influence Usefulness of OPAPA**

The factors that were associated with the usefulness of OPAPA were similar to the factors that positively influenced the usefulness of KPs. The SOCIAL gratification variable consistently had the highest correlation coefficient. With OPAPA, FUTURE PLANS tied with the SOCIAL factor, indicating that respondent groups recognized the role and potential of ICTs in agriculture and in this case, OPAPA's role in the future of agricultural extension. However, the future plan aspect should be grounded on how survey respondents perceived the usefulness of OPAPA in the context of community settings, given the high ratings of the SOCIAL aspect. Moreover, according to Rice and Webster (2001) as they summarized and drew from Bly et al. (1993) on the contextual and social influences on the adoption, diffusion and use of new media, "work is fundamentally social, so collaborative technologies are defined by the social setting (such as group size, commonality of purpose, and degree of openness about work" (p. 208).



The central question when promoting OPAPA is: How can PhilRice satisfy the need for SOCIAL uses of an ICT-based rice extension when accessing OPAPA is seemingly an individualistic activity? The solution lies on the establishment and strengthening of community access centers which would emphasize how stakeholders in a particular geographical location can concurrently learn and exchange rice information using ICTs without losing the sense of community/collectivity. Since majority of the farmers were members of farm organizations, “farmer-to-farmer communication for innovation” as termed by Leeuwis (2004) should be encouraged. In doing so, the OPAPA-trained farmers can serve as a part of the greater network upholding “optimal available knowledge, experience, and skills of farmers in a community” (p. 221) since these farmers are faced with similar constraints and problems (Leeuwis, 2004). Further, the significant positive relationships between the variables included in this study and the usefulness of OPAPA should be examined to prioritize methods that appeal to the respondents’ uses/gratification factors.

Non-gratification variables should also be included when promoting OPAPA especially CONTENT which was perceived by respondents as a substantial variable that influenced OPAPA’s usefulness. This indicated that the relevance and substance of extension materials to rice production and preference of target users would surely be a criterion regarding the usefulness of the delivery mechanism. Further on access, as Markus (1994) said that communication is an interdependent phenomenon, communicating ICT-mediated rice science and technologies requires a mass of users to have access to the particular media.

## **Recommendations**

Based on the findings and conclusions, the following three sets of recommendations are made for rice agriculture extension strategy decisions. These include 1) policy, 2) actions from PhilRice, and 3) further research.

### **Recommendations for Policy**

1. The findings indicated a strong association between the SOCIAL gratification variable (which includes getting advice on rice farming, passing information to peers, staying in touch with other rice production personnel, and responding to inquiries on rice production) for both KPs and OPAPA and the usefulness of KPs and OPAPA. Hence, taking into consideration the social/shared uses and settings of rice extension materials during information campaigns will support rice clients' tendencies for reciprocity. This means that the worth of rice extension materials' content is within the context of information social networks exchange among clients. Perhaps rice extension materials may serve as a community discussion topic for rice clients and a deliberate strategy to discuss the materials' content with people who are also consumers of the same information. At the same time, it is a method to socialize with peers and other rice production personnel. It is also appropriate to recommend that "community access is critical for promoting the technology and improving proficiency of local community members in its use" (Tenessen, PonTell, Romine, Motheral, 1997). Also, the innovative features of OPAPA in building community partnerships for ICT access is in the right direction given that rice clients recognize the FUTURE PLAN (encompasses the need to

keep learning, be updated with rice information, and develop new ideas on rice production and new interests) gratification aspect of OPAPA in tandem with the SOCIAL aspect.

2. The findings also indicated that all gratification and non-gratification variables included in the study were positively related to the usefulness of rice extension materials, KPs and OPAPA. Hence, extension materials that satisfy the gratification variables coupled with favorable conditions created by the non-gratification variables, then rice extension materials have a greater chance to be adopted and accessed. This maybe seen as “balanced” extension materials, in terms of relevance and organization of the materials’ content; and also a higher chance of appealing to the individual psychological factors that were found to have substantial relationships in this study. It is important that rice extension materials/strategies consider gratification factors like SOCIAL, SURVEILLANCE, ACQUISITION OF NEW KNOWLEDGE, and FUTURE PLANS and non-gratification factors like CONTENT and PERCEIVED CHARACTERISTICS OF THE MEDIA. These variables are consistent for both KPs and OPAPA.

3. The research has indicated that there are significant differences in means on the usefulness of KPs and OPAPA. Overall, KPs were rated higher than OPAPA by all survey respondents despite the fact that both were rated positively. Thus, it is appropriate to recommend that distribution and access to KPs should be strengthened to reach the majority of the audience who still prefer KPs rather than OPAPA services. On the other hand, promotion of OPAPA services should be reinforced and intensified to accommodate rice information consumers who seek alternative media. As King and

Boehlje (2000) recommended, program should rethink supply-oriented versus demand-driven extension. With a demand-driven extension, the target audience's preference and needs will dictate on how rice extension materials will be offered/disseminated and what rice information will be delivered.

This finding further implies that in a country like the Philippines and in an area like the Northern part of Luzon, ICT diffusion still lags behind developed countries and access to the Internet especially the OPAPA's e-Extension remains a challenge. Thus, it is logical to suggest that an extension campaign promoting rice extension materials should be undertaken. Since access is critical for OPAPA to be adopted by the respondents, the continuous establishment of Cyber Communities in the Northern part of Luzon will enhance community access and will encourage rice extension material consumers to get information in alternative media.

### **Recommendation for Actions from PhilRice**

1. The research has profiled extension material users and found that certain sociodemographic characteristics were specific to different stakeholder groups. However, the findings indicated no major sociodemographic variables associated with the usefulness of the two rice extension delivery methods (KPs and OPAPA). This finding suggests the need for an audience analysis in reaching a wider array of rice information consumers in the Philippines, especially in PhilRice-Batac's area of responsibility, the northern part of Luzon. Such an audience analysis will ascertain information specificity for different rice clients and their preferences for accessing and using the information

from different extension delivery strategies to more effectively use declining resources. This audience analysis should also provide profiles of non-users of either PhilRice KPs or OPAPA services. Perhaps, an institution-wide audience analysis should be undertaken in order to focus rice extension efforts and to examine information consumers' preference to access through KPs or OPAPA and to periodically update extension materials based on the results of the audience analysis. Further, audience analysis will help establish the answer to a salient extension question: What topics are preferred by rice information consumers? Such analysis will help rice extension strategies to be more directed, efficient and effective in meeting the needs of specific rice client groups.

This study recommends the need for a comprehensive audience analysis before disseminating rice information. Perhaps, a more consumer-driven rice information extension should be undertaken rather than the PhilRice-preferred materials to be diffused. This strategy would have a major impact on access and accountability of government funds.

2. Information and communication technologies change so fast in today's world. The uses of these technologies also have far reaching implications for agriculture especially rice agricultural extension in the Philippines. However as Cartmell, Orr, and Kelemen (2006) recommended, the challenge "lies not in necessarily using the latest or the trendiest of technological advancements to deliver the message, but rather in determining the preferred method for reaching a particular audience" (no page number). Thus, it is crucial for PhilRice to take into account how KPs or OPAPA are perceived as shown in this study and determine how to approach the strengths and weaknesses of these two extension strategies. This study has indicated that there were no major differences

between the uses/motives/gratifications behind accessing KPs and OPAPA. To better promote OPAPA in order for the Academy to make a permanent, distinct, and indelible mark on rice agriculture extension, PhilRice should capitalize on OPAPA's anywhere, anytime access information characteristics, free from geographical barriers.

3. Findings revealed that majority of the farmers and MAFC chairs reported no basic computer background before the OPAPA training. This finding suggests that the possibility of OPAPA access will be considerably affected by information technology literacy of these rice clients. Hence, assessment and feedback on the impact of the OPAPA training should be undertaken.

4. Since majority of the respondents are members of rice-related and rice-based farm organizations, PhilRice should intensify/establish partnerships and linkages with these organizations for KP dissemination and advanced OPAPA trainings.

### **Recommendations for Further Research**

1. It is recommended that this study be replicated in other regions and provinces in the Philippines especially in the major rice-producing areas. Such research is needed to better understand the factors that showed positive associations in this study.

2. Further research is needed to examine how the variables presented in this study are ranked by rice information clients. In doing so, variables that have a major influence on the usefulness of Philippine rice extension materials/strategies will be determined and can be developed.

3. This study used a convenient, non-random sample of the rice information clients of PhilRice. Future research should try to study random samples of rice information consumers to provide an unbiased assessment of the usefulness of Philippine rice extension materials which can be generalized to the populations studied. Also, future research should address whether or not high ratings on the perceived usefulness of KPs and OPAPA are mainly due to their utilitarian aspects or due to the fact that PhilRice has already established a positive relationship with these rice information consumers. The highest ratings on the SOCIAL gratification very well suggest that forming relationship with the targeted audience has positive influence on KPs' and OPAPA's usefulness. This finding would affirm the need to have a sociological study on how "trust" from key rice information stakeholders can be gained to establish social networks that are favorable in disseminating and diffusing rice information.

4. Clearly, this study has indicated how PhilRice has communicated the Institute's scientific results to the target stakeholders in rice agriculture. A salient factor that should also be studied is how intended information users generate and exchange rice information within their social networks and how the rice information disseminated by PhilRice fit into the existing local patterns of rice agricultural knowledge.

5. Finally, a study that will focus on the barriers/limitations of accessing KPs and OPAPA should also be conducted. Knowing the barriers and limitations experienced by target rice information users will add to a holistic assessment of the Philippine rice extension situation especially that PhilRice aims to deliver effective and efficient rice extension materials.

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## Appendix A

### Survey Approval

**From** "Seisler, Andrea" <ars17@psu.edu>  
"Seisler, Andrea" <ars17@psu.edu> ⊕

**To** rzt127@psu.edu  
rzt127@psu.edu ⊕

**Subject** IRB# 27427 - Assessing the Usefulness of Rice Extension Materials in the Philippines

**Date** Wed, Feb 20, 2008 08:35 AM

**CC** brr100@psu.edu, rzrelado@yahoo.com  
brr100@psu.edu ⊕ , rzrelado@yahoo.com ⊕

Hi Rhemilyn,

The Office for Research Protections (ORP) has reviewed the above-referenced study and determined it to be exempt from IRB review. You may begin your research. This study qualifies under the following category(ies):

**Category 2:** Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observations of public behavior unless: (i) information obtained is recorded in such a manner that human participants can be identified, directly or through identifiers linked to the participants; **and** (ii) any disclosure of the human participants' responses outside the research could reasonably place the participants at risk of criminal or civil liability or be damaging to the participants' financial standing, employability, or reputation. [45 CFR 46.101(b)(2)]

#### **PLEASE NOTE THE FOLLOWING:**

Include your IRB number in any correspondence to the ORP.

The principal investigator is responsible for determining and adhering to additional requirements established by any outside sponsors/funding sources.

#### **Record Keeping**

- o The principal investigator is expected to maintain the original signed informed consent forms, if applicable, along with the research records for at least three (3) years after termination of the study.
- o This will be the only correspondence you will receive from our office regarding this modification determination.

**MAINTAIN A COPY OF THIS EMAIL FOR YOUR RECORDS.**

**Consent Document(s)**

- o The exempt consent form(s) will no longer be stamped with the approval/expiration dates.
- o The most recent consent form(s) that you sent in for review is the one that you are expected to use.

**Follow-Up**

- o The Office for Research Protections will contact you in three (3) years to inquire if this study will be on-going.
- o If the study is completed within the three year period, the principal investigator may complete and submit a **Project Close-Out Report**.  
(<http://www.research.psu.edu/orp/areas/humans/applications/closeout.rtf>)

**Revisions/Modifications**

- o Any changes or modifications to the study must be submitted to the Office for Research Protections on the *Modification Request Form - Exemption* available on our website:  
<http://www.research.psu.edu/orp/areas/humans/applications/modrequest.rtf>
- o **Modifications will not be accepted unless the Modification Request Form is included with the submission.**

Please do not hesitate to contact me if you have any questions or concerns.

Thank you,  
Andrea

Andrea R. Seisler, MBE  
Compliance Coordinator  
Office for Research Protections  
The Pennsylvania State University  
201 Kern Graduate Building  
University Park, PA16802  
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## Appendix B

### Sample Final Survey (English and Ilocano Translations)

Note: Only a sample questionnaire for extension agents is included. However, note that questionnaires for the rest of the respondent groups were the same. Specific words (extension agent) are replaced when dealing with farmers, barangay officials, and MAFC chairs.

Assessing the Usefulness of Rice Extension Materials in the Philippines  
A Sample Questionnaire for Extension Agents

Region:	City/Municipality:
Province:	Barangay:
Name of Enumerator:	Email Address/Contact Number:

When was the last time you needed an item for information on rice?

- Today
- Yesterday
- This week
- This month
- Last month
- Last cropping season
- Cannot remember

#### I. Usefulness of Knowledge Products

1. Are you aware of any rice knowledge products (KPs) from PhilRice?

- Yes (If **YES**, continue to 1.1.)
- No (If **NO**, go to 7.)

1.1 If **YES**, what are these KPs? Check all that apply.

- |   | <b>Print Materials</b>                                | <b>Audio Materials</b>                            |
|---|---|---|
| <input type="checkbox"/> Posters  | <input type="checkbox"/> Newspaper/Magazine Clippings | <input type="checkbox"/> Video/VCDs               |
| <input type="checkbox"/> PhilRice Newsletters   | <input type="checkbox"/> Books                        | <input type="checkbox"/> Radio/broadcast releases |
| <input type="checkbox"/> Billboards   | <input type="checkbox"/> Flipcharts                   | <input type="checkbox"/> CDs                      |
| <input type="checkbox"/> Pamphlets/ leaflets/<br>Q&A/technobulletins/<br>PhilRice Calendars | <input type="checkbox"/> Others: _____                | <input type="checkbox"/> Others: _____            |

2. Have you used any KP from PhilRice?

- Yes (If **YES**, continue to 2.1.)
- No (If **NO**, go to item 8.)

2.1. If **YES**, what are these KPs? Check all that apply.

<b>Print Materials</b>		<b>Audio Materials</b>
<input type="checkbox"/> Posters	<input type="checkbox"/> Newspaper/Magazine Clippings	<input type="checkbox"/> Video/ VCDs
<input type="checkbox"/> PhilRice Newsletters	<input type="checkbox"/> Books	<input type="checkbox"/> Radio/ broadcast releases
<input type="checkbox"/> Billboards	<input type="checkbox"/> Flipcharts	<input type="checkbox"/> CDs
<input type="checkbox"/> Pamphlets/ leaflets/ Q&A/technobulletins/ PhilRice Calendars	<input type="checkbox"/> Others: _____	<input type="checkbox"/> Others: _____

3. What are the topics of the KPs that you have used? Check all that apply. See list for possible answers.

<input type="checkbox"/> Importance of Rice	<input type="checkbox"/> Crop Establishment
<input type="checkbox"/> Parts of the Rice Plant/ Morphology	<input type="checkbox"/> Water Management
<input type="checkbox"/> Rice Environments	<input type="checkbox"/> Nutrient Management
<input type="checkbox"/> Rice Varieties	<input type="checkbox"/> Integrated Pest Management
<input type="checkbox"/> Seed Production and Seed Exchange	<input type="checkbox"/> Harvest Management
<input type="checkbox"/> Land Preparation	<input type="checkbox"/> Post Harvest Management
<input type="checkbox"/> Others, specify: _____ _____	

4. Among the KPs that you have used, identify top five most preferred materials?

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_
- d. \_\_\_\_\_
- e. \_\_\_\_\_

5. Perceptions and attitudes toward the usefulness of knowledge products.

Please answer the following questions/ statements by encircling appropriate response. Use the following scale for your answer.

**Strongly Agree= 5**

**Agree=4**

**Uncertain=3**

**Disagree=2**

**Strongly Disagree=1**

Statements	Responses				
5.1. I find KPs useful.	5	4	3	2	1
5.2. Through KPs, I learn about rice production techniques.	5	4	3	2	1
5.3. With KPs, I am well-informed of new technologies.	5	4	3	2	1
5.4. I use the information included in KPs.	5	4	3	2	1
5.5. The information in KPs is interesting.	5	4	3	2	1
5.6. KPs enhance my capacity as a rice extension agent.	5	4	3	2	1
5.7. KPs are informative.	5	4	3	2	1

5.8. I have shared what I learn from KPs with rice farmers.	5	4	3	2	1
5.9. I trust the information included in KPs.	5	4	3	2	1
5.10. KPs provide valuable tips on rice farming.	5	4	3	2	1
5.11. I have shared the information in KPs with my fellow extension agents.	5	4	3	2	1

## 6. Actual use of KPs.

6.1. On average, how many times do you use KPs in a month? Check one.

KPs	Response				
	Not at all	Once a month	Twice a month	Once a week	Twice or more a week
Posters					
Pamphlets/ leaflets/ Q&A/ technobulletins/ PhilRice calendar					
Video/ VCDs					
Other KPs					
1.					
2.					
3.					
4.					
5.					

6.2. On average, how many hours a month do you believe you spent on KPs? Check one.

KPs	Response						
	Not at all	Less than 1 hour to 5 hours	More than 5 hours to 10 hours	More than 10 hours to 15 hours	More than 15 hours to 20 hours	More than 20 hours to 25 hours	More than 25 hours
Posters							
Pamphlets/ leaflets/ Q&A/ technobulletins/ PhilRice calendar							
Video/ VCDs							
Other KPs							
1.							
2.							
3.							
4.							
5.							

(After Question 6.2, proceed to Part II.)

**(Item 7 is for those who are not aware of PhilRice KPs.)**

7. Are you interested in receiving knowledge products from PhilRice?

- Yes (If **YES**, continue to 7.1.)  
 No (If **NO**, go to item 7.3.)

7.1. If **YES**, what are your reasons why you want to have KPs? Check all that apply.

- I want to learn new information on rice technologies.  
 I want to know new rice production techniques.  
 I want to be informed of rice production trends.  
 I want to be effective in my work related to rice agriculture.  
 I want to share up to date information (e.g. farmers, extension agents, farm organizations, etc.).  
 Others, specify:  
 \_\_\_\_\_

7.2. What do you think are the reasons why you did not receive any KPs? Check all that apply.

- KPs are not free.  
 I do not know where to get them.  
 There is no distribution of KPs.  
 KPs supply is limited.  
 I do not think I am supposed to get them.  
 Others, specify:  
 \_\_\_\_\_

7.3. If **NO**, why not? Check all that apply.

- I have different information source on rice technologies.  
 I am confident of my rice production knowledge.  
 I rely on other sources of rice production trends.  
 I have ties with information sources (e.g. chemical companies, seed companies, etc).  
 I do not trust information included in KPs.  
 I think KPs are only for those who are directly involved in rice production (e.g. farmers, extension agents, etc.)  
 Others, specify:  
 \_\_\_\_\_

**(After Question 7.3, proceed to Part III.)**

**(Item 8 is for those who are aware of PhilRice KPs, but have not used them.)**

8. What are the reasons why you did not use KPs? Check all that apply.

- I have different information source on rice technologies.  
 I am confident of my own rice production knowledge.  
 I rely on other information sources of rice production trends.  
 I have ties with other information sources (e.g. chemical companies, seed companies, etc).  
 I do not trust the information included in KPs.  
 I think KPs are only for those who are directly involved in rice production (e.g. farmers, extension agents, etc.)  
 Others, specify:  
 \_\_\_\_\_

**(After Question 8, proceed to Part III.)**

## II. Factors Related to the Usefulness of Knowledge Products

Please answer the following questions/ statements by encircling appropriate response. Use the following scale for your answer.

Strongly Agree= 5

Agree=4

Uncertain=3

Disagree=2

Strongly Disagree=1

### A. Motives and gratification for KP usage

I use KPs...

Statements	Responses				
<b>Social</b>					
1. To get advice on rice farming.	5	4	3	2	1
2. To have information to pass on to other people.	5	4	3	2	1
3. To have something to discuss with other extension agents.	5	4	3	2	1
4. To stay in touch with other rice production personnel.	5	4	3	2	1
5. To be able to respond to inquiries on rice production.	5	4	3	2	1
<b>Entertainment/Leisure</b>					
1. To be entertained.	5	4	3	2	1
2. To feel good.	5	4	3	2	1
3. To have fun.	5	4	3	2	1
4. To find excitement.	5	4	3	2	1
5. To be inspired with real life stories on rice production.	5	4	3	2	1
<b>Acquisition of New Knowledge</b>					
1. To get information on new rice technologies.	5	4	3	2	1
2. To find helpful rice production information.	5	4	3	2	1
3. To learn how to do rice production related things.	5	4	3	2	1
4. To access information specific to my needs as extension agent.	5	4	3	2	1
5. To know more about every phase of rice production.	5	4	3	2	1
<b>Surveillance</b>					
1. To keep up with what is going on in rice production.	5	4	3	2	1
2. To get information I can trust.	5	4	3	2	1
3. To get rice news that is not available elsewhere.	5	4	3	2	1
4. To get information on rice production events.	5	4	3	2	1
5. To be informed on rice-based production.	5	4	3	2	1

<b>Peer Pressure</b>					
1. Because everyone else is using it.	5	4	3	2	1
2. To feel knowledgeable.	5	4	3	2	1
3. To feel important.	5	4	3	2	1
4. To gain status.	5	4	3	2	1
5. To be above others.	5	4	3	2	1
<b>Future Plans</b>					
1. To keep learning.	5	4	3	2	1
2. To stay up to date with rice information.	5	4	3	2	1
3. To develop new ideas on rice production.	5	4	3	2	1
4. To stay up to date with my career.	5	4	3	2	1
5. To develop new interests.	5	4	3	2	1
<b>Fame</b>					
1. To be ahead of others in rice information.	5	4	3	2	1
2. So that others will look up to me for rice information.	5	4	3	2	1
3. To let people know that I am well-informed.	5	4	3	2	1
4. To be considered as a credible information source.	5	4	3	2	1
5. To be able to help others with rice production concerns.	5	4	3	2	1

## B. Access to KPs

I have access to KPs...

<b>Statements</b>	<b>Response</b>				
1. Whenever I want it.	5	4	3	2	1
2. From academic institutions.	5	4	3	2	1
3. From farmers' learning centers.	5	4	3	2	1
4. Through farmer organizations/ cooperatives.	5	4	3	2	1
5. Through PhilRice office/ rice-related institutions.	5	4	3	2	1
6. Through chemical companies.	5	4	3	2	1
7. Through seed dealers/ seed growers.	5	4	3	2	1
8. Through fertilizer dealers.	5	4	3	2	1
9. From LGU Agriculture office.	5	4	3	2	1
10. From FITS center.	5	4	3	2	1
11. From farmers.	5	4	3	2	1

**C. Perceived characteristics of KPs**

Statements	Response				
	5	4	3	2	1
1. Learning to use KPs is easy for me.	5	4	3	2	1
2. The information on KPs is flexible to farmers' needs.	5	4	3	2	1
3. I like how the information is presented in KPs.	5	4	3	2	1
4. The way the information is written in KPs is clear to me.	5	4	3	2	1
5. Information included in KPs flows well from page to page.	5	4	3	2	1
6. KPs are attractive.	5	4	3	2	1
7. KPs are presented in a familiar format for easy understanding.	5	4	3	2	1
8. KPs are easy to use.	5	4	3	2	1
9. KPs are visually appealing.	5	4	3	2	1
10. The information on KPs is flexible to extension agents' needs.	5	4	3	2	1

**D. Attitudes toward the task requirements of KPs**

Statements	Response				
	5	4	3	2	1
1. The information in KPs is easy to follow.	5	4	3	2	1
2. The only thing for me to do when I receive a KP is to read it.	5	4	3	2	1
3. I need to get hold of KPs before I get the information.	5	4	3	2	1
4. I prefer to have hard copies than searching in computers.	5	4	3	2	1
5. I am used to having KPs.	5	4	3	2	1

**E. Content of KPs**

Statements	Response				
	5	4	3	2	1
1. The information included in KPs is relevant.	5	4	3	2	1
2. The pictures clearly illustrate the topic being presented.	5	4	3	2	1
3. The information presented is understandable.	5	4	3	2	1
4. KPs provide essential details on rice production.	5	4	3	2	1
5. KPs provide important updates on rice production.	5	4	3	2	1
6. KPs' information is logically organized.	5	4	3	2	1

**F. Readability of KPs**

Questions	Responses	
	Yes	No
1. Is the text readable?	<input type="checkbox"/>	<input type="checkbox"/>
2. Are the words simple?	<input type="checkbox"/>	<input type="checkbox"/>
3. Are the sentences short?	<input type="checkbox"/>	<input type="checkbox"/>

- 4. Are the sentences easy to understand?
- 5. Are KPs free of grammatical errors?
- 6. Are technical jargons/terms explained?

(Proceed to Part III.)

**III. Usefulness of Open Academy for Philippine Agriculture (OPAPA) Program**

1. Are you aware of any OPAPA rice information services?

- Yes (If **YES**, continue to 1.1.)
- No (If **NO**, go to 7.)

1.1 If **YES**, what are these OPAPA services that you are aware of? Check all that apply.

**OPAPA Components**

- |   |   |  |
|---|---|--|
| <input type="checkbox"/> Basic ICT/ Computer Training   | <input type="checkbox"/> Radio+Internet+SMS messaging | <input type="checkbox"/> e-Learning modules      |
| <input type="checkbox"/> Farmers' Call/Text Center 0920-911-1398  | <input type="checkbox"/> Rice Cyber Clinic            | <input type="checkbox"/> Mobile Internet Bus     |
| <input type="checkbox"/> Rice Doctor  | <input type="checkbox"/> e-Commerce                   | <input type="checkbox"/> Access Provision        |
| <input type="checkbox"/> E-technobulletins  | <input type="checkbox"/> Rice Knowledge Bank          | <input type="checkbox"/> Fact Sheets/Techno Tips |
| <input type="checkbox"/> Pinoy Farmer's Internet ( <a href="http://www.openacademy.ph">www.openacademy.ph</a> ) |   | <input type="checkbox"/>                         |

2. Have you used any OPAPA rice information services?

- Yes (If **YES**, continue to 2.1.)
- No (If **NO**, go to item 8.)

2.1 If **YES**, what are these OPAPA services that you have availed of? Check all that apply.

**OPAPA Components**

- |   |   |   |
|---|---|---|
| <input type="checkbox"/> Basic ICT/ Computer Training   | <input type="checkbox"/> Radio+Internet+SMS messaging | <input type="checkbox"/> e-Learning modules       |
| <input type="checkbox"/> Farmers' Call/Text Center 0920-911-1398  | <input type="checkbox"/> Rice Cyber Clinic            | <input type="checkbox"/> Mobile Internet Bus      |
| <input type="checkbox"/> Rice Doctor  | <input type="checkbox"/> e-Commerce                   | <input type="checkbox"/> Access Provision         |
| <input type="checkbox"/> E-technobulletins  | <input type="checkbox"/> Rice Knowledge Bank          | <input type="checkbox"/> Fact Sheets/ Techno Tips |
| <input type="checkbox"/> Pinoy Farmer's Internet ( <a href="http://www.openacademy.ph">www.openacademy.ph</a> ) |   |   |

3. What are the topics of the OPAPA services that you have used? Check all that apply. See list for possible answers.

- |  |   |
|--|---|
| <input type="checkbox"/> Importance of Rice                  | <input type="checkbox"/> Crop Establishment         |
| <input type="checkbox"/> Parts of the Rice Plant/ Morphology | <input type="checkbox"/> Water Management           |
| <input type="checkbox"/> Rice Environments                   | <input type="checkbox"/> Nutrient Management        |
| <input type="checkbox"/> Rice Varieties                      | <input type="checkbox"/> Integrated Pest Management |
| <input type="checkbox"/> Seed Production and Seed Exchange   | <input type="checkbox"/> Harvest Management         |
| <input type="checkbox"/> Land Preparation                    | <input type="checkbox"/> Post Harvest Management    |
| <input type="checkbox"/> Others, specify:                    |   |

\_\_\_\_\_

\_\_\_\_\_



4. Among the OPAPA services that you have used, identify top five most preferred?

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_
- d. \_\_\_\_\_
- e. \_\_\_\_\_

5. Perceptions and attitudes toward the usefulness of OPAPA web-based services.

Please answer the following questions/ statements by encircling appropriate response. Use the following scale for your answer.

**Strongly Agree= 5**

**Agree=4**

**Uncertain=3**

**Disagree=2**

**Strongly Disagree=1**

Statements	Responses				
5.1. I find OPAPA services useful.	5	4	3	2	1
5.2. Through OPAPA services, I learn how to improve my rice production knowledge.	5	4	3	2	1
5.3. With OPAPA services, I am well-informed of new technologies.	5	4	3	2	1
5.4. I use the information included in OPAPA services.	5	4	3	2	1
5.5. The information in OPAPA services is interesting.	5	4	3	2	1
5.6. Using OPAPA services enhances my capacity as a rice extension agent.	5	4	3	2	1
5.7. OPAPA services are informative.	5	4	3	2	1
5.8. I have shared what I learn from OPAPA services with rice farmers.	5	4	3	2	1
5.9. I trust the information included in OPAPA services.	5	4	3	2	1
5.10. OPAPA services provide valuable tips on rice farming.	5	4	3	2	1
5.11. I have shared the information in OPAPA services with my fellow extension agents.	5	4	3	2	1

## 6. Actual use of OPAPA.

6.1. On average, how many times do you access OPAPA services in a month? Check one.

OPAPA Services	Response				
	Not at all	Once a month	Twice a month	Once a week	Twice or more a week
ICT Training					
Farmer's Text/Call Center					
OPAPA Website/Pinoy Farmers' Internet					
Other Services					
1.					
2.					
3.					
4.					
5.					

6.2. On average, how many hours do you believe you spent on OPAPA services a month? Check one.

OPAPA Services	Response						
	Not at all	Less than 1 hour to 5 hours	More than 5 hours to 10 hours	More than 10 hours to 15 hours	More than 15 hours to 20 hours	More than 20 hours to 25 hours	More than 25 hours
ICT Training							
Farmer's Text/Call Center							
OPAPA Website/Pinoy Farmers' Internet							
Other Services							
1.							
2.							
3.							
4.							
5.							

(After Question 6.2, proceed to Part IV.)

(Item 7 is for those who are not aware of OPAPA web-based services.)

7. Are you interested in OPAPA?

- Yes (If YES, continue to 7.1.)  
 No (If NO, go to item 7.3.)

7.1. If YES, what are your reasons why you want to access OPAPA? Check all that apply.

- I want to learn new information on rice technologies.  
 I want to know new rice production techniques.  
 I want to be informed of rice production trends.  
 I want to improve my work in rice agriculture.  
 I want to learn how to use Internet.  
 I want to learn how to use the computer.

- I want to buy rice seeds, books, magazines, brochures, rice equipment/ machines (ecommerce).  
 Others, specify: \_\_\_\_\_

7.2. What do you think are the reasons why you do not have access to OPAPA? Check all that apply.

- OPAPA is not free.  
 I do not know where to access OPAPA.  
 There is no promotion of OPAPA.  
 OPAPA is dependent on Internet.  
 I do not have a cellular phone.  
 I do not have load for my cellular phone.  
 Others, specify: \_\_\_\_\_

7.3. If **NO**, why not? Check all that apply.

- I have different information source on rice technologies.  
 I am confident of my rice production techniques.  
 I rely on other sources of rice production trends.  
 I have ties with information sources (e.g. chemical companies, seed companies, etc).  
 I do not trust information included in OPAPA.  
 I think OPAPA is only for those who are directly involved in rice production (e.g. farmers, extension agents, etc.)  
 Others, specify: \_\_\_\_\_

(After Question 7.3, proceed to Part V.)

(Item 8 is for those who are aware of OPAPA web-based services but have not used them.)

8. What are the reasons why you did not access OPAPA? Check all that apply.

- I have different information source on rice technologies.  
 I am confident of my rice production techniques.  
 I rely on other sources of rice production trends.  
 I have ties with information sources (e.g. chemical companies, seed companies, etc).  
 I do not trust the information included in OPAPA.  
 I am not used to Internet.  
 I do not know how to use the computer.  
 I think OPAPA is only for those who are directly involved in rice production (e.g. farmers, extension agents, etc).  
 I do not have a cellular phone.  
 I do not have load for my cellular phone.  
 Others, specify: \_\_\_\_\_

(After Question 8, proceed to Part V.)

#### IV. Factors Related to the Usefulness of OPAPA

Please answer the following questions/ statements by encircling appropriate response. Use the following scale for your answer.

**Strongly Agree= 5**

**Agree=4**

**Uncertain=3**

**Disagree=2**

**Strongly Disagree=1**

**A. Motives and gratification for OPAPA usage**

I use OPAPA web-based services...

Statements	Responses				
<b>Social</b>					
1. To get advice on rice farming.	5	4	3	2	1
2. To have information to pass on to other people.	5	4	3	2	1
3. To have something to discuss with other extension agents.	5	4	3	2	1
4. To stay in touch with other rice production personnel.	5	4	3	2	1
5. To be able to respond to inquiries on rice production.	5	4	3	2	1
<b>Entertainment/Leisure</b>					
1. To be entertained.	5	4	3	2	1
2. To feel good.	5	4	3	2	1
3. To have fun.	5	4	3	2	1
4. To find excitement.	5	4	3	2	1
5. To be inspired with real life stories on rice production.	5	4	3	2	1
<b>Acquisition of New Knowledge</b>					
1. To get information on new rice technologies.	5	4	3	2	1
2. To find helpful rice production information.	5	4	3	2	1
3. To learn how to do rice production related things.	5	4	3	2	1
4. To access information specific to my needs as extension agent.	5	4	3	2	1
5. To know more about every phase of rice production.	5	4	3	2	1
<b>Surveillance</b>					
1. To keep up with what is going on in rice production.	5	4	3	2	1
2. To get information I can trust.	5	4	3	2	1
3. To get rice news that is not available elsewhere.	5	4	3	2	1
4. To get information on rice production events.	5	4	3	2	1
5. To be informed on rice-based production.	5	4	3	2	1
<b>Peer Pressure</b>					
1. Because everyone else is using it.	5	4	3	2	1
2. To feel knowledgeable.	5	4	3	2	1
3. To feel important.	5	4	3	2	1
4. To gain status.	5	4	3	2	1
5. To be above others.	5	4	3	2	1

<b>Future Plans</b>					
1. To keep learning.	5	4	3	2	1
2. To stay up to date with rice information.	5	4	3	2	1
3. To develop new ideas on rice production.	5	4	3	2	1
4. To stay up to date with my career.	5	4	3	2	1
5. To develop new interests.	5	4	3	2	1
<b>Fame</b>					
1. To be ahead of others in rice information.	5	4	3	2	1
2. So that others will look up to me for rice information.	5	4	3	2	1
3. To let people know that I am well-informed.	5	4	3	2	1
4. To be considered as a credible information source.	5	4	3	2	1
5. To be able to help others with rice production concerns.	5	4	3	2	1

### **B. Access to OPAPA**

I have access to OPAPA...

<b>Statements</b>	<b>Response</b>				
1. Whenever I want it.	5	4	3	2	1
2. From academic institutions.	5	4	3	2	1
3. Through farmers' learning centers.	5	4	3	2	1
4. Through farmer organizations/cooperatives.	5	4	3	2	1
5. Through PhilRice office/ rice-related institutions.	5	4	3	2	1
6. Through chemical companies.	5	4	3	2	1
7. Through seed dealers/ seed growers.	5	4	3	2	1
8. Through fertilizer dealers.	5	4	3	2	1
9. From LGU Agriculture office.	5	4	3	2	1
10. From FITS center.	5	4	3	2	1
11. From farmers.	5	4	3	2	1
12. Through cellular phone.	5	4	3	2	1

### **C. Perceived characteristics of OPAPA**

<b>Statements</b>	<b>Response</b>				
1. Learning to use OPAPA web-based services is easy for me.	5	4	3	2	1
2. The information on OPAPA web-based services is flexible to farmers' needs.	5	4	3	2	1
3. I like how the information is presented in OPAPA website.	5	4	3	2	1
4. I find it hard to understand the language used in OPAPA website.	5	4	3	2	1
5. The way the information is written in OPAPA is clear to me.	5	4	3	2	1
6. Information included in OPAPA website flows from page to page.	5	4	3	2	1

7. OPAPA website is attractive.	5	4	3	2	1
8. OPAPA website is presented in a familiar format for easy understanding.	5	4	3	2	1
9. OPAPA website is easy to navigate.	5	4	3	2	1
10. OPAPA website is visually appealing.	5	4	3	2	1
11. The ICT Training is easy to understand.	5	4	3	2	1
12. The farmer's text center is easy to access.	5	4	3	2	1

#### D. Attitudes toward the task requirements of OPAPA

Statements	Response				
1. The information in OPAPA is easy to follow.	5	4	3	2	1
2. The only thing for me to do when I access OPAPA is learning how to use the Internet.	5	4	3	2	1
3. I need to have access to the Internet before I get the information.	5	4	3	2	1
4. I know how to use computers.	5	4	3	2	1
5. I am used to accessing the Internet.	5	4	3	2	1
6. I am used to using a cellular phone.	5	4	3	2	1

#### E. Content of OPAPA

Statements	Response				
1. The information included in OPAPA website is relevant.	5	4	3	2	1
2. The pictures clearly illustrate the topic being presented.	5	4	3	2	1
3. The information presented is understandable.	5	4	3	2	1
4. OPAPA web-based services provide essential details on rice production.	5	4	3	2	1
5. OPAPA web-based services provide important updates on rice production.	5	4	3	2	1
6. OPAPA's website information is logically organized.	5	4	3	2	1

#### F. Readability of OPAPA

Questions	Responses	
	Yes	No
1. Is the text readable?	<input type="checkbox"/>	<input type="checkbox"/>
2. Are the words simple?	<input type="checkbox"/>	<input type="checkbox"/>
3. Are the sentences short?	<input type="checkbox"/>	<input type="checkbox"/>
4. Are the sentences easy to understand?	<input type="checkbox"/>	<input type="checkbox"/>
5. Are OPAPA web-based services free of grammatical errors?	<input type="checkbox"/>	<input type="checkbox"/>
6. Are technical jargons/terms explained?	<input type="checkbox"/>	<input type="checkbox"/>

### V. Reliance on Mass Information Delivery Strategies/Web-based Services

To what extent do you rely on the following information sources? Use the following scale for responses. Select applicable items based on uses of KPs and OPAPA in Sections I and III.

**Very great extent= 5**  
**Great extent= 4**  
**Moderate extent= 3**  
**Some extent= 2**  
**Not at all= 1**

Statements	Response				
1. Posters	5	4	3	2	1
2. PhilRice Newsletters	5	4	3	2	1
3. Billboard	5	4	3	2	1
4. Pamphlets/ leaflets/ Q&A/ technobulletins	5	4	3	2	1
5. Newspapers/ magazine clippings	5	4	3	2	1
6. Books	5	4	3	2	1
7. Flip Charts	5	4	3	2	1
8. Video/ VCDs/ CDs	5	4	3	2	1
9. Radio/ broadcast releases	5	4	3	2	1
10. Farmers' call/text center	5	4	3	2	1
11. Rice doctor	5	4	3	2	1
12. E-technobulletins	5	4	3	2	1
13. Radio+Internet+SMS messaging	5	4	3	2	1
14. Rice cyber clinic	5	4	3	2	1
15. e-Commerce	5	4	3	2	1
16. Rice knowledge bank	5	4	3	2	1
17. e-Learning modules	5	4	3	2	1
18. Mobile internet bus	5	4	3	2	1
19. Access provision	5	4	3	2	1
20. Fact sheets/ tehnotips	5	4	3	2	1
21. Pinoy farmers' internet	5	4	3	2	1

### VI. Sociodemographics

1. Name (optional): \_\_\_\_\_

2. Age: \_\_\_\_\_

3. Gender:

Male

Female

## 4. Education:

- Elementary (1-5 years)  
 Elementary graduate (6 years)  
 High School (7-9 years)  
 High School graduate (10 years)  
 College (11-13 years)  
 College graduate (14 years)  
 Others specify: \_\_\_\_\_

## 5. Estimated distance (km) of house to:

PhilRice: \_\_\_\_\_  
 ATI: \_\_\_\_\_  
 Chemical companies: \_\_\_\_\_  
 Seed dealers: \_\_\_\_\_  
 Fertilizer dealers: \_\_\_\_\_  
 Farmer cooperatives: \_\_\_\_\_

## 6. Farm organizations (active membership), if any:

- a. \_\_\_\_\_  
 b. \_\_\_\_\_  
 c. \_\_\_\_\_

10. Are you a rice farmer?                      Yes                       No

11. Primary occupation: \_\_\_\_\_

12. Years in present primary occupation: \_\_\_\_\_

13. Number of household members (living with the respondent who know how to use the internet/ computers) and indicate ages.

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

14. Are you aware of Internet cafes near you?                      Yes                       No

15. Do you know how to use computers before?                      Yes                       No

16. Are you willing to access the OPAPA website from internet cafes?

Yes                       No

**VII. Comments**

\_\_\_\_\_



Assessing the Usefulness of Rice Extension Materials in the Philippines-Ilocano Version  
A Sample Questionnaire for Extension Agents

Rehion:	Siudad/Munisipyo:
Probinsia:	Barangay:
Nagan ti Enumerator:	Email Address/Contact Number:

**Kaano ti naudi a panagkasapulanyo kadagiti material a pagadalanyo iti impormasion?**

- Ita nga aldaw  
 Idi kalman  
 Ita a lawas  
 Ita a bulan  
 Iti napalabas a bulan  
 Iti napalabas a panagmumula  
 Saan a malagip

**I. Kinapateg dagiti produkto a paggapuan iti adal Knowledge Products (KPs) (Aniaman a naipablaak a pagbasaan wenno mabuya mainaig iti panagpatanor iti pagay)**

1. Ammoyo kada ti maipapan kadagiti KPs manipud iti PhilRice?

- Wen (No **WEN**, inka iti sumaruno a saludsod.)  
 Saan (No **SAAN**, inka iti saludsod ti bilang 7.)

1.2 No **WEN**, ania dagitoy a KPs? Kur-itan amin nga adda kadakayo.

	<b>Naisurat a Material</b>	<b>Manggeg/Mabuya a Material</b>
<input type="checkbox"/> Posters	<input type="checkbox"/> Newspaper/Magazine Clippings	<input type="checkbox"/> Video/VCDs
<input type="checkbox"/> PhilRice Newsletters	<input type="checkbox"/> Books	<input type="checkbox"/> Radio/broadcast releases
<input type="checkbox"/> Billboards	<input type="checkbox"/> Flipcharts	<input type="checkbox"/> CDs
<input type="checkbox"/> Pamphlets/ leaflets/ Q&A/technobulletins/ PhilRice Calendars	<input type="checkbox"/> Others: _____	<input type="checkbox"/> Others: _____

2. Inusaryo kadin dagitoy a KPs manipud iti PhilRice?

- Wen (No **WEN**, inka iti sumaruno a saludsod.)  
 Saan (No **SAAN**, inka iti saludsod ti bilang 8.)

2.1. No **WEN**, ania dagitoy a KPs? Kur-itan amin nga adda kadakayo.

	<b>Naisurat a Material</b>	<b>Manggeg/Mabuya a Material</b>
<input type="checkbox"/> Posters	<input type="checkbox"/> Newspaper/Magazine Clippings	<input type="checkbox"/> Video/VCDs
<input type="checkbox"/> PhilRice Newsletters	<input type="checkbox"/> Books	<input type="checkbox"/> Radio/broadcast releases
<input type="checkbox"/> Billboards	<input type="checkbox"/> Flipcharts	<input type="checkbox"/> CDs
<input type="checkbox"/> Pamphlets/leaflets/ Q&A/technobulletins/ PhilRice Calendars	<input type="checkbox"/> Others: _____	<input type="checkbox"/> Others: _____

3. Ania dagiti nausaryo a topiko kadagiti KPs? Kur-itan amin nga adda kadakayo.

- Ti kinapateg ti pagay  
 Paspaset/Pakabuklan ti mula a pagay  
 Panagmula  
 Panangtarawidwid iti danum

- |   |   |
|---|---|
| <input type="checkbox"/> Lugar a pagmulaan iti pagay                        | <input type="checkbox"/> Panangmanehar iti ramen ti daga                          |
| <input type="checkbox"/> Dagiti barayti ti pagay                            | <input type="checkbox"/> Napagkaykaysa a wagas ti panangtarawidwid kadagiti peste |
| <input type="checkbox"/> Panagpaadu iti bin-i ken Pannakisinnukat iti bin-i | <input type="checkbox"/> Panangtarawidwid iti apit                                |
| <input type="checkbox"/> Panangisagana iti Talon                            | <input type="checkbox"/> Panangmanehar ti apit kalpasan ti panagani               |
| <input type="checkbox"/> Ilanad no adda pay sabali:                         |   |
- \_\_\_\_\_
- \_\_\_\_\_

4. Kadagiti nausaryo a KPs, mangilanad iti tallo a kangrunaan/kapatgan kadakayo?

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_
- d. \_\_\_\_\_
- e. \_\_\_\_\_

5. Dagiti maawatan ken kababalinyo mainaig iti kinapateg dagiti KPs.

Sungbatanyo dagiti sumaganad a salsaludsod/kapanunotan babaen ti panangtimbukelyo kadagiti maitutop a numero. Usarenyo dagiti sumaganad a pangibasaran iti sungbatyo.

**Umanamong unay= 5**  
**Umanamong=4**  
**Agdudua=3**  
**Saan nga umanamong=2**  
**Saan a pulos umanamong=1**

<b>Kapampanunotan</b>	<b>Sungbat</b>				
5.1. Makatulong unay dagiti KPs.	5	4	3	2	1
5.2. Babaen kadagiti KPs, nasursurok ti maipapan iti panagpatanor ti pagay.	5	4	3	2	1
5.3. Babaen kadagiti KPs, maammuak dagiti baro a teknolohia.	5	4	3	2	1
5.4. Us-usarek dagiti impormasion a nailanad kadagiti KPs.	5	4	3	2	1
5.5. Makaited-interes dagiti impormasion a nailanad kadagiti KPs.	5	4	3	2	1
5.6. Pasayaaten dagiti KPs ti kinasigok kas maysa nga ekstensionis.	5	4	3	2	1
5.7. Makaisuro dagiti KPs.	5	4	3	2	1
5.8. Naibinglayko kadagiti mannalon dagiti nasursurok kadagiti KPs.	5	4	3	2	1
5.9. Agtalekak kadagiti impormasion a nailanad kadagiti KPs.	5	4	3	2	1
5.10. Mangipaay dagiti KPs kadagiti napapateg a singasing iti panagtalon.	5	4	3	2	1
5.11. Naibinglayko kadagiti padak a teknisian dagiti impormasion kadagiti KPs.	5	4	3	2	1

## 6. Dagiti pakaaramatan dagiti KPs.

6.1. Mamin-anoyo nga usaren dagiti KPs iti makabulan? Mangkur-it iti maysa a sungbat.

KPs	Sungbat				
	Saan pulos a nausar	Maminsan ti makabulan	Mamindua ti makabulan	Maminsan ti makalawas	Mamindua ti makalawas
Posters					
Pamphlets/ leaflets/ Q&A/ technobulletins/ PhilRice calendar					
Video/ VCDs					
Sabali pay a KPs:					
1.					
2.					
3.					
4.					
5.					

6.2. Mano nga oras ti kadawyan a mabusbosyo nga agusar kadgiti KPs iti kada bulan? Mangkur-it iti maysa a sungbat.

KPs	Sungbat						
	Saan pulos a nausar	Saan a lumabes iti 5 oras	Nasursurok ngem 5 oras aginggat 10 oras	Nasursurok ngem 10 oras aginggat 15 oras	Nasursurok ngem 15 oras aginggat 20 oras	Nasursurok ngem 20 oras aginggat 25 oras	Nasursurok ngem 25 oras
Posters							
Pamphlets/ leaflets/ Q&A/ technobulletins/ PhilRice calendar							
Video/ VCDs							
Sabali pay a KPs:							
1.							
2.							
3.							
4.							
5.							

(Apaman a masungbatan ti saludsod iti bilang 6.2, agpatuloy iti Paset II)

(Dagiti saludsod iti bilang 7 ket para kadagiti saan a makaammo kadagiti PhilRice KPs)

7. Interesadokayo kadi a makaawat kadagiti KPs?

- Wen (No **wen**, inka iti sumaruno a saludsod.)
- Saan (No **saan**, inka iti saludsod iti bilang 7.3.)

- 7.1. No **WEN**, apay a kayatyo ti maaddaan kadagiti KPs? Kur-itan amin a mabalin a sungbat.
- Kayatko a masursuro dagiti baro a teknolohia iti panagpatanor iti pagay.
- Kayatko a maammuan dagiti baro a teknolohia iti panagpatanor oti pagay.
- Kayatko a maammuan dagiti impormasion mainaig iti panagdur-as iti panagpatanor iti pagay.
- Kayatko ti agbalin a nasigo iti trabahok mainaig iti panagpatanor iti pagay.
- Kayatko a mairanud dagiti mannalon, ekstensiyonis, ken grupo dagiti mannalon kadagiti kabaruan nga impormasion maipapan iti pangpatanor iti pagay
- Ilanad no adda pay sabali:
- 

- 7.2. Panagkunanam, apay nga di ka naaddaan uray maysa a KPs? Kur-itan amin a mabalin a sungbat.
- Saan a libre dagiti KPs.
- Saanko nga ammo ti pangalaan kadagiti KPs.
- Awan ti maar-aramid a panagiwaras kadagiti KPs.
- Saan nga umdas ti supplay dagiti KPs.
- Saan a kasapulan a maaddaanak kadagiti KPs.
- Ilanad no adda pay sabali:
- 

- 7.3 No **SAAN**, ania ti makagapu? Kur-itan amin a mabalin a sungbat.
- Adda sabali a pagal-alaak iti impormasion maipapan iti panagpatanor iti pagay.
- Agtalekak iti bukodko nga ammo maipapan iti panagpatanor iti pagay.
- Adda sabali a pagpannurayak iti impormasion maipapan kadagiti panagdur-as iti panagpatanor iti pagay.
- Adda pannakikadduak iti sabali pay a gubuayan iti impormasion (kas koma kadagiti kompania ti kemiko, kompania dagiti agpatpataud iti bin-i, kdpv).
- Diak agtalek kadagiti impormasion a nailanad kadagiti KPs.
- Dagiti KPs ket para laeng kadagiti direkta a nairaman kadagiti aktibidad nainaig iti panagpatanor ti pagay (kas koma kadagiti mannalon, ekstensiyonis, kdpv.)
- Ilanad no adda pay sabali:
- 

**(Apaman a masungbatan ti saludsod iti bilang 7.3, agpatuloy iti Paset III)**

**(Ti saludsod iti bilang 8 ket para kadagiti makaamo kadagiti PhilRice KPs ngem saanda nga us-usaren dagitoy.)**

8. Apay a saanyo nga us-usaren dagiti KPs?
- Adda sabali a pagal-alaak ti impormasion maipapan ti panagpatanor iti pagay.
- Agtalekak bukodko nga ammo maipapan iti panagpatanor iti pagay.
- Adda sabali a pagpannurayak iti impormasion maipapan kadagiti panagdur-as iti panagpatanor iti pagay.
- Adda pannakikadduak iti sabali pay a gubuayan iti impormasion (kas koma kadagiti kompania ti kemiko, kompania nga agpatpataud kadagiti bin-i, kdpv).
- Diak agtalek kadagiti impormasion a nailanad kadagiti KPs.
- Dagiti KPs ket para laeng kadagiti direkta a nairaman kadagiti aktibidad nainaig iti panagpatanor ti pagay (kas koma kadagiti mannalon, ekstensiyonis, kdpv.)
- Ilanad no adda pay sabali:
- 

**(Apaman a masungbatan ti saludsod iti bilang 8, agpatuloy iti Paset III)**

## **II. Dagiti Mangapeko iti Kinapateg dagiti KPs**

Sungbatanyo dagiti sumaganad a salsaludsod/kapanunotan babaen iti panangtimbukelyo kadagiti maitutop a numero. Usarenyo dagiti sumaganad a pangibasaran iti sungbatyo.

**Umanamong unay= 5**

**Umanamong=4**

**Agdudua=3**

**Saan nga umanamong=2**

## Saan a pulos umanamong=1

## A. Dagiti motibo ken pannakapnek iti panagusak ti KPs

Usarek dagiti KPs...

Kapampanunotan	Sungbat				
	Sosyal				
1. Tapno makagun-odak kadagiti singasing maipapan iti panagtalon.	5	4	3	2	1
2. Tapno adda maiyallatiwko nga impormasion kadagiti sabsabali.	5	4	3	2	1
3. Tapno adda mabalinlko a pakisaritaan kadagiti padak nga agpatpatanor iti pagay.	5	4	3	2	1
4. Tapno kanayon ti pannakiumanko kadagiti teknisian.	5	4	3	2	1
5. Tapno kabaalak ti sumungbat kadagiti saludsod maipapan iti panagpatanor iti pagay.	5	4	3	2	1
<b>Pagpalaliwaan/Pagpalabasan iti Oras</b>					
1. Tapno maliwliwaak.	5	4	3	2	1
2. Tapno sumayaat ti riknak.	5	4	3	2	1
3. Tapno adda pakaragsakan.	5	4	3	2	1
4. Tapno adda pakagagaran.	5	4	3	2	1
5. Tapno maparegtaak kadagiti pudno a padpadas mainaig iti panagpatanor iti pagay.	5	4	3	2	1
<b>Panaggun-od iti Baro nga adal</b>					
1. Tapno makagun-od kadagiti baro nga impormasion mainaig ti panagpatanor iti pagay.	5	4	3	2	1
2. Tapno makagun-od kadagiti makagungguna nga impormasion mainaig iti panagpatanor iti pagay.	5	4	3	2	1
3. Tapno masursuro dagiti dadduma pay a bambanag mainaig iti panagpatanor iti pagay.	5	4	3	2	1
4. Tapno makagun-odak kadagiti espisipiko nga impormasion a kasapulak kas maysa nga agsuksukisok.	5	4	3	2	1
5. Tapno ad-adda pay a maamuan dagiti wagas iti panagpatanor iti pagay.	5	4	3	2	1
<b>Panangsubaybay</b>					
1. Tapno mammuak dagiti agdama a pasamak mainaig iti panagpatanor iti pagay.	5	4	3	2	1
2. Tapno makagun-odak kadagiti mapagtalkan nga impormasion.	5	4	3	2	1
3. Tapno makagun-odak kadagiti damdamag mainaig iti pagay a saanko a magun-od iti sadinoman	5	4	3	2	1
4. Tapno maamuak dagiti paspasamak mainaig iti panagpatanor iti pagay	5	4	3	2	1
5. Tapno maammuak dagiti dadduma pay a wagas iti panagpatanor kadagiti sabsabali pay a mulmula malaksid iti pagay	5	4	3	2	1
<b>Panangguygoy dagiti Gagayyem</b>					
1. Agsipud ta us-usaren dayta ti kaaduan .	5	4	3	2	1
2. Tapno makuna nga adu ti ammok.	5	4	3	2	1

3. Tapno makuna a napategak	5	4	3	2	1
4. Tapno maaddaanak iti nasayaat a reputasion	5	4	3	2	1
5. Tapno kanayonak a maidaydayaw	5	4	3	2	1
<b>Panggep iti Masakbayan</b>					
1. Tapno agtultuloy ti panaggun-odko kadagiti adal.	5	4	3	2	1
2. Tapno kanayon a mapakaammuannak.	5	4	3	2	1
3. Tapno maaddaanak kadagiti baro a kapanunotan mainaig iti panagpatanor iti pagay.	5	4	3	2	1
4. Tapno kanayon a maamuak dagiti impormasion mainaig iti panagtalonko.	5	4	3	2	1
5. Tapno makapataudak kadagiti baro a paginteresan.	5	4	3	2	1
<b>Pannakaidayaw</b>					
1. Tapno kanayon a siak ti umuna a makaammo kadagiti impormasion maipapan iti panagpatanor iti pagay.	5	4	3	2	1
2. Tapno siak ti pagsaludsudanda kadagiti impormasion maipapan iti panagpatanor iti pagay.	5	4	3	2	1
3. Tapno maamuan dagiti tattao a kanayon a maipakpakaammo kaniak dagiti baro nga impormasion maipapan iti panagpatanor iti pagay.	5	4	3	2	1
4. Tapno maibilang a mapagtalkan a gubuyang dagiti impormasion.	5	4	3	2	1
5. Tapno kabaalak ti tumulong kadagiti sabsabali mainaig iti panagpatanor iti pagay.	5	4	3	2	1

## B. Pannakagun-od kadagiti KPs

Magun-odko dagiti KPs...

	Kapampanunotan			Sungbat	
1. Iti aniaman a kanito a kayatko.	5	4	3	2	1
2. Manipud kadagiti institusion nga agsuksukisok mainaig iti panagpatanor iti pagay.	5	4	3	2	1
3. Manipud kadagiti lugar a paggiinnadalan dagiti mannalon (farmers' learning center).	5	4	3	2	1
4. Manipud kadagiti organisasion/grupo dagiti mannalon.	5	4	3	2	1
5. Manipud iti opisina ti PhilRice.	5	4	3	2	1
6. Manipud kadagiti kompanya ti kemiko.	5	4	3	2	1
7. Manipud kadagiti pagtagilakuan ti bin-i a bukbukel.	5	4	3	2	1
8. Manipud kadagiti paglakuan iti abono.	5	4	3	2	1
9. Manipud kadagiti lokal nga opisina ti agrikultura.	5	4	3	2	1
10. Manipud kadagiti FITS center (Farmers Information & Technology Service).	5	4	3	2	1
11. Manipud kadagiti mannalon.	5	4	3	2	1

**C. Kalidad dagiti KPs**

	<b>Kapampanunotan</b>					<b>Sungbat</b>				
	5	4	3	2	1	5	4	3	2	1
1. Para kaniak, nalaka ti agsursuro manipud kadagiti KPs.	5	4	3	2	1	5	4	3	2	1
2. Maibagay dagiti impormasion kadagiti KPs kadagiti kasapulan dagiti mannalon.	5	4	3	2	1	5	4	3	2	1
3. Magustuak ti pannakaiparang dagiti impormasion kadagiti KPs.	5	4	3	2	1	5	4	3	2	1
4. Nalaka a maawatan dagiti impormasion kadagiti KPs.	5	4	3	2	1	5	4	3	2	1
5. Naannayas ti panagsasaganad dagiti impormasion a nailanad kadgiti KPs.	5	4	3	2	1	5	4	3	2	1
6. Makaguyugoy dagiti KPs.	5	4	3	2	1	5	4	3	2	1
7. Naiparang dagiti KPs dagiti wagas a nalaka a maawatan.	5	4	3	2	1	5	4	3	2	1
8. Nalaka nga usaren dagiti KPs.	5	4	3	2	1	5	4	3	2	1
9. Naiparang dagiti makaay-ayo a wagas.	5	4	3	2	1	5	4	3	2	1
10. Maibagay dagiti impormasion kadagiti KPs kadagiti kasapulan dagiti teknisian.	5	4	3	2	1	5	4	3	2	1

**D. Dagiti kalikaguman kadagiti KPs /Tignay mainaig kadagitoy a kalikagum**

	<b>Kapampanunotan</b>					<b>Sungbat</b>				
	5	4	3	2	1	5	4	3	2	1
1. Nalaka a surotan dagiti impormasion kadagiti KPs.	5	4	3	2	1	5	4	3	2	1
2. Ti laengen mangbasa ti kasapulan tapno maawatko dagiti KPs.	5	4	3	2	1	5	4	3	2	1
3. Masapul nga awatek nga umuna dagiti KPs sakbay a magun-odko dagiti impormasion	5	4	3	2	1	5	4	3	2	1
4. Kaykayatko ti maaddaan kadagiti naiprinta a KPs ngem iti agsukimat iti internet.	5	4	3	2	1	5	4	3	2	1
5. Naruamakon nga addan kadagiti KPs.	5	4	3	2	1	5	4	3	2	1

**E. Dagiti Linaon Dagiti KPs**

	<b>Kapampanunotan</b>					<b>Sungbat</b>				
	5	4	3	2	1	5	4	3	2	1
1. Agtutunos dagiti impormasion a nailanad kadagiti KPs.	5	4	3	2	1	5	4	3	2	1
2. Nalawag nga iyanninaw dagiti ladawan dagiti nailanad a topiko.	5	4	3	2	1	5	4	3	2	1
3. Nalaka a maawatan dagiti impormasion.	5	4	3	2	1	5	4	3	2	1
4. Mangipaay dagiti KPs kadagiti makagunggona nga impormasion iti panagpatanor iti pagay	5	4	3	2	1	5	4	3	2	1
5. Magipaay dagiti KPs kadagiti napapateg nga impormasion mainaig iti panagdur-as iti panagpatanor iti pagay	5	4	3	2	1	5	4	3	2	1
6. Naurnos dagiti impormasion a nailanad kadagiti KPs	5	4	3	2	1	5	4	3	2	1

**F. Pannakaisurat dagiti KPs**

	<b>Salsaludsod</b>		<b>Sungbat</b>	
	Wen	Saan	Wen	Saan
1. Nalaka kadi a mabasa ti pannakaisuratna?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Nalaka kadi a maawatan dagiti naaramat a balikas?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Ababa kadi dagiti naaramat a balikas?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4. Nalaka kadi a maawatan dagiti naarama a balikast?
5. Nalaka kadi a matarusan balikast?
6. Nailawlawag kadi met laeng dagiti baro/saan a familiar a balikast?

## (Agpatuloy iti Paset III)

**III. Kinapateg ti Open Academy for Philippine Agriculture (OPAPA) Program**

1. Ammoyo kadi dagiti wagas ti OpAPA a mangiwardas kadagiti impormasion mainaig iti panagpatanor iti pagay?

- Wen (No **WEN**, inka iti sumaruno a saludsod.)  
 Saan (No **SAAN**, inka iti saludsod ti bilang 7.)

1.1 No **WEN**, ania kadagitoy a wagas ti OPAPA? Kur-itan amin a mabalin a sungbat.

**OPAPA Components**

- |   |   |  |
|---|---|--|
| <input type="checkbox"/> Basic ICT/ Computer Training   | <input type="checkbox"/> Radio+Internet+SMS messaging | <input type="checkbox"/> e-Learning modules      |
| <input type="checkbox"/> Farmers' Call/Text Center 0920-911-1398  | <input type="checkbox"/> Rice Cyber Clinic            | <input type="checkbox"/> Mobile Internet Bus     |
| <input type="checkbox"/> Rice Doctor  | <input type="checkbox"/> e-Commerce                   | <input type="checkbox"/> Access Provision        |
| <input type="checkbox"/> E-technobulletins  | <input type="checkbox"/> Rice Knowledge Bank          | <input type="checkbox"/> Fact Sheets/Techno Tips |
| <input type="checkbox"/> Pinoy Farmer's Internet ( <a href="http://www.openacademy.ph">www.openacademy.ph</a> ) |   |  |

2. Inusaryo kadin ti aniaman kadagiti serbisio ti OPAPA?

- Wen (No **WEN**, inka iti sumaruno a saludsod.)  
 Saan (No **SAAN**, inka iti saludsod iti bilang 8.)

2.1. No wen, ania kadagitoy a serbisio ti OPAPA? Kur-itan amin a mabalin a sungbat.

**OPAPA Components**

- |   |   |   |
|---|---|---|
| <input type="checkbox"/> Basic ICT/ Computer Training   | <input type="checkbox"/> Radio+Internet+SMS messaging | <input type="checkbox"/> e-Learning modules       |
| <input type="checkbox"/> Farmers' Call/Text Center 0920-911-1398  | <input type="checkbox"/> Rice Cyber Clinic            | <input type="checkbox"/> Mobile Internet Bus      |
| <input type="checkbox"/> Rice Doctor  | <input type="checkbox"/> e-Commerce                   | <input type="checkbox"/> Access Provision         |
| <input type="checkbox"/> E-technobulletins  | <input type="checkbox"/> Rice Knowledge Bank          | <input type="checkbox"/> Fact Sheets/ Techno Tips |
| <input type="checkbox"/> Pinoy Farmer's Internet ( <a href="http://www.openacademy.ph">www.openacademy.ph</a> ) |   |   |

3. Ania kadagiti topiko iti serbisiyo ti OPAPA ti nausaryon? Kur-itan amin a mabalin a sungbat.

- |   |   |
|---|---|
| <input type="checkbox"/> Ti kinapateg ti pagay                              | <input type="checkbox"/> Panagmula  |
| <input type="checkbox"/> Paspaset/Pakabuklan ti mula a pagay                | <input type="checkbox"/> Panangtarawidwid iti danum                               |
| <input type="checkbox"/> Lugar a pagmulaan iti pagay                        | <input type="checkbox"/> Panangmanehar iti ramen ti daga                          |
| <input type="checkbox"/> Dagiti barayti ti pagay                            | <input type="checkbox"/> Napagkaykaysa a wagas ti panangtarawidwid kadagiti peste |
| <input type="checkbox"/> Panagpaadu iti bin-i ken Pannakisinnukat iti bin-i | <input type="checkbox"/> Panangtarawidwid iti apit                                |
| <input type="checkbox"/> Panangisagana iti Talon                            | <input type="checkbox"/> Panangmanehar ti apit kalpasan ti panagani               |
| <input type="checkbox"/> Ilanad no adda pay sabali:                         |   |

\_\_\_\_\_

\_\_\_\_\_



4. Kadagiti serbisio nga ipapaay ti OPAPA a nausaryon, mangilista iti 5 a kangrunaan/kapatgan para kadakayo?

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_
- d. \_\_\_\_\_
- e. \_\_\_\_\_

5. Maawatan ken Panagtignay mainaig iti kinapateg ti OPAPA

Sungbatanyo dagiti sumaganad a salsaludsod/kapanunotan babaen iti panangtimbukelyo kadagiti maitutop a numero. Usarenyo dagiti sumaganad a pangibasaran iti sungbatyo

**Umanamong unay= 5**

**Umanamong=4**

**Agdudua=3**

**Saan nga umanamong=2**

**Saan a pulos umanamong=1**

<b>Kapampanunotan</b>	<b>Sungbat</b>				
5.1. Talaga a makatulong ti OPAPA.	5	4	3	2	1
5.2. Babaen iti OPAPA, nasursurok no kasano a pasayaatek ti wagas ti panagpatanorko iti pagay.	5	4	3	2	1
5.3. Babaen iti OPAPA, maammuak dagiti kabaruan a teknolohia.	5	4	3	2	1
5.4. Us-usarek dagiti impormasion a nailanad iti OPAPA.	5	4	3	2	1
5.5. Makaited-interes dagiti impormasion a nailanad iti OPAPA.	5	4	3	2	1
5.6. Iti panangusarko iti OpAPA, ad-adda a napasayaatko ti kabaalak kas maysa teknisian ti pagay.	5	4	3	2	1
5.7. Makaisuro ti OPAPA.	5	4	3	2	1
5.8. Nairanudko kadagiti mannalon dagiti nasursurok manipud kadagiti serbisio ti OPAPA.	5	4	3	2	1
5.9. Agtalekak kadagiti impormasion a nailanad iti OPAPA.	5	4	3	2	1
5.10. Mangipaay ti OPAPA kadagiti makagunggona a singasing iti panagtalon.	5	4	3	2	1
5.11. Nairanudko kadagiti padak a teknisian dagiti impormasion kadagiti serbisio ti OPAPA.	5	4	3	2	1

## 6. Dagiti Pakausaran ti OPAPA.

6.1. Kadawyan, mamin-anoyo nga usaren dagiti serbisio ti OPAPA iti makabulan? Mangkur-it iti maysa a sungbat.

Serbisio ti OPAPA	Sungbat				
	Saan pulos a nausar	Maminsan ti makabulan	Mamindua ti makabulan	Maminsan ti makalawas	Mamindua ti makalawas
ICT Training					
Farmer's Text/Call Center					
OPAPA Website/Pinoy Farmers' Internet					
Sabali pay a Serbisio:					
1.					
2.					
3.					
4.					
5.					

6.2. Panagkunayo, mano ti kadawyan nga oras a mabusbosyo iti OPAPA iti kada bulan? Mangkur-it ti maysa a sungbat.

Serbisio ti OPAPA	Sungbat						
	Saan pulos a nausar	Saan a lumabes iti 5 oras	Nasursurok ngem 5 oras aginggat 10 oras	Nasursurok ngem 10 oras aginggat 15 oras	Nasursurok ngem 15 oras aginggat 20 oras	Nasursurok ngem 20 oras aginggat 25 oras	Nasursurok ngem 25 oras
ICT Training							
Farmer's Text/Call Center							
OPAPA Website/ Pinoy Farmers' Internet							
Sabali pay a Serbisio:							
1.							
2.							
3.							
4.							
5.							

(Apaman a masungbatan ti saludsod iti bilang 6.2, agpatuloy iti Paset IV)

(Dagiti saludsod iti bilang 7 ket para kadagiti saan a makaammo iti serbisio ti OPAPA)

## 7. Interesadokayo kadi iti OPAPA?

- Wen (No **WEN**, inka iti sumaruno a saludsod.)  
 Saan (No **SAAN**, inka iti bilang 7.3.)

7.1. No **WEN**, apay a kayatyo ti maikonecta iti OPAPA? Kur-itan amin a mabalin a sungbat.

- Kayatko a masursuro dagiti baro nga impormasion maipanggep iti teknolohia ti panagpatanor iti pagay.
- Kayatko a maammuan dagiti baro a teknolohia iti panagpatanor iti pagay.
- Kayatko ti mapakaammuan kadagiti panagdur-as iti panagpatanor iti pagay.
- Kayatko a mapasayaat ti trabahok a nainaig iti panagpatanor iti pagay.
- Kayatko a masursuro ti agusar iti internet.
- Kayatko a masursuro ti agusar iti computer.
- Kayatko ti gumatang bin-i ti pagay, libro, magasin, polieto, makinaria iti panagtalon (e-commerce).
- Ilanad no adda pay sabali:
- 

7.2. Kanagkunam ania ti rason no apay a saan ka a makausar iti serbisio ti OPAPA? Kur-itan amin a mabalin a sungbat.

- Saan a libre ti panagusar dagiti serbisio ti OPAPA
- Saan ko nga ammo no sadino ti pakagun-odak ti serbisio ti OPAPA.
- Awan promocion para iti serbisio ti OPAPA.
- Agdependar ti serbisio ti OPAPA iti Internet.
- Awan cell phone ko.
- Awan karga na a load ti cell phone ko.
- Ilanad no adda pay sabali:
- 

7.3. No saan, apay? Kur-itan amin a mabalin a sungbat.

- Adda sabali a pakagun-odak iti impormasion maipapan iti panagpatanor iti pagay.
- Agtalekak iti pannakaammok maipapan iti panagpatanor iti pagay.
- Adda sabali a pagpannurayak iti impormasion mainaig kadagiti panagdur-as iti panagpatanor iti pagay.
- Adda pannakikadduak iti sabali pay a gubuyan iti impormasion (kas koma kadagiti kompanya ti kemiko, bukbukel, kdpj).
- Diak agtalek kadagiti impormasion a nailanad iti OPAPA.
- Ti OpAPA ket para laeng kadagiti direkta a nairaman kadagiti aktibidad nainaig iti panagpatanor iti pagay (kas kadagiti mannanon, ekstensionis, kdpj.)
- Ilanad no adda pay sabali:
- 

**(Apaman a masungbatan ti saludsod iti bilang 3, inka iti Paset V)**

**(Ti saludsod iti bilang 8 ket para kadagiti makaamo kadagiti serbisio ti OPAPA ngem saanna nga us-usaren dagitoy.)**

8. Apay a saanyo nga us-usaren ti OPAPA?

- Adda sabali a pakagun-odak iti impormasion maipapan iti panagpatanor iti pagay.
- Agtalekak iti pannakaammok maipapan iti panagpatanor iti pagay.
- Adda sabali a pagpannurayak iti impormasion mainaig kadagiti panagdur-as iti panagpatanor iti pagay.
- Adda pannakikadduak iti sabali pay a gubuyan ti impormasion (kas koma kadagiti kompanya ti kemiko, bukbukel, kdpj).
- Diak agtalek kadagiti impormasion a nailanad kadagiti OPAPA.
- Saanko nga ammo ti agusar ti internet.
- Saan ko nga ammo nga usaren ti computer.
- Ti OPAPA ket para laeng kadagiti direkta a nairaman kadagiti aktibidad nainaig iti panagpatanor iti pagay (kas koma kadagiti mannanon, ekstensionis, kdpj.)
- Awan cell phone ko.
- Awan karga na a load ti cell phone ko.
- Ilanad no adda pay sabali:
- 

**(Apaman a masungbatan ti bilang 8, mapan iti Paset V)**

#### IV. Dagiti Makaapekto iti Kinapateg ti OPAPA

Sungbatanyo dagiti sumaganad a salsaludsod/kapanunotan babaen iti panangtimbukelyo kadagiti maitutop a numero. Usarenyo dagiti sumaganad a pangibasaran iti sungbatyo.

Umanamong unay= 5

Umanamong=4

Agdudua=3

Saan nga umanamong=2

Saan a pulos umanamong=1

##### A. Pangpanggep ken Pannakapennek

Usarek dagiti serbisio ti OPAPA ...

	Kapampanunotan			Sungbat		
<b>Sosial</b>						
1. Tapno makagun-odak kadagiti singasing maipapan iti panagtalon.	5	4	3	2	1	
2. Tapno adda maiyallatiwko nga impormasion kadagiti sabsabali.	5	4	3	2	1	
3. Tapno adda ti mabalinko a pakisaritaan kadagiti padak nga agpatpatanor iti pagay.	5	4	3	2	1	
4. Tapno kanayon ti pannakiumanko kadagiti teknisian iti pagay.	5	4	3	2	1	
5. Tapno kabaalak ti sumungbat kadagiti saludsod maipapan iti panagpatanor iti pagay.	5	4	3	2	1	
<b>Pagpalaliwaan/Pagpalabasan iti Oras</b>						
1. Tapno maliwliwaak.	5	4	3	2	1	
2. Tapno sumayaat/marelaks ti riknak.	5	4	3	2	1	
3. Tapno adda pakaragsakan.	5	4	3	2	1	
4. Tapno adda pakagagaran.	5	4	3	2	1	
5. Tapno maparegtaak kadagiti pudno a kapadasan mainaig iti panagpatano iti pagay.	5	4	3	2	1	
<b>Panaggun-od iti Baro a Pannakaammo</b>						
1. Tapno makagun-od kadagiti baro nga impormasion mainaig ti teknolohia iti panagpatanor iti pagay.	5	4	3	2	1	
2. Tapno makagun-od kadagiti makagungona nga impormasion mainaig iti panagpatanor iti pagay.	5	4	3	2	1	
3. Tapno masursuro dagiti dadduma pay a bambanag mainaig iti panagpatanor iti pagay.	5	4	3	2	1	
4. Tapno makagun-odak kadagiti espisipiko nga impormasion a kasapulak kas maysa a mannalon.	5	4	3	2	1	
5. Tapno maamuan ti ad-adu pay maipapan iti tunggal paset dagiti wagas iti panagpatanor iti pagay.	5	4	3	2	1	
<b>Panangsubaybay</b>						
1. Tapno mammuak dagiti agdama a pasamak mainaig iti panagpatanor iti pagay.	5	4	3	2	1	
2. Tapno makagun-odak kadagiti mapagtalkan nga impormasion.	5	4	3	2	1	
3. Tapno makagun-odak kadagiti damdamag mainaig iti pagay a saanko a magun-odan iti sadinoman.	5	4	3	2	1	

4. Tapno maamuak dagiti paspasamak mainaig iti panagpatanor iti pagay.	5	4	3	2	1
5. Tapno maammuak dagiti dadduma pay a wagas iti panagpatanor kadagiti sabsabali pay a mulmula malaksid iti pagay.	5	4	3	2	1
<b>Pananguyugoy dagiti Gagayyem</b>					
1. Agsipud ta us-usaren dayta ti kaadduan .	5	4	3	2	1
2. Tapno makuna nga adu ti ammok.	5	4	3	2	1
3. Tapno makuna a napategak.	5	4	3	2	1
4. Tapno makagun-odak iti nasayaat a reputasion.	5	4	3	2	1
5. Tapno kanayonak a maidaydayaw.	5	4	3	2	1
<b>Masanguanan a Panggep</b>					
1. Tapno agtultuloy ti panaggun-odko ti adal.	5	4	3	2	1
2. Tapno kanayon a mapakaammuannak.	5	4	3	2	1
3. Tapno makapataudak kadagiti baro a kapanunotan mainaig iti panagpatanor iti pagay.	5	4	3	2	1
4. Tapno kanayon a mapakaammuannak kadagiti impormasion mainaig iti agdama a trabahok.	5	4	3	2	1
5. Tapno makapataudak kadagiti baro a paginteresan.	5	4	3	2	1
<b>Pannakaidayaw</b>					
1. Tapno kanayon a siak ti umuna a makaammo kadagiti impormasion maipapan iti panagpatanor iti pagay.	5	4	3	2	1
2. Tapno siak ti pagsaludsudanda kadagiti impormasion maipapan iti panagpatanor iti pagay.	5	4	3	2	1
3. Tapno maamuan dagiti tattao a kanayon a maipakpakaammo kaniak dagiti baro nga impormasion maipapan iti panagpatanor iti pagay.	5	4	3	2	1
4. Tapno maibilang a mapagtalkanak a gubuyan dagiti impormasion.	5	4	3	2	1
5. Tapno kabaalak ti tumulong kadagiti sabsabali mainaig iti panagpatanor iti pagay.	5	4	3	2	1

#### B. Pannakausar dagiti serbisio ti OPAPA

Mausarko ti OPAPA...

	Kapampanunotan			Sungbat	
1. Iti aniaman a kanito a kayatko.	5	4	3	2	1
2. Manipud kadagiti institusion nga agsuksukisok mainaig iti panagpatanor iti pagay.	5	4	3	2	1
3. Manipud kadagiti lugar a paggiinnadalan dagiti mannalon (farmers' learning center).	5	4	3	2	1
4. Babaen kadagiti organisasion/grupo dagiti mannalon.	5	4	3	2	1
5. Babaen iti opisina ti PhilRice.	5	4	3	2	1
6. Babaen kadagiti kompania ti kemiko.	5	4	3	2	1

7. Babaen kadagiti pagtagilakuan iti bin-i a bukukel.	5	4	3	2	1
8. Babaen kadagiti pagtagilakuan iti abono.	5	4	3	2	1
9. Manipud kadagiti lokal nga opisina ti agrikultura	5	4	3	2	1
10. Manipud kadagiti FITS center (Farmers Information & Technology Service).	5	4	3	2	1
11. Manipud kadagiti mannalon.	5	4	3	2	1
12. Babaen iti cell phone.	5	4	3	2	1

**C. Kalidad dagiti serbisio ti OPAPA/Tignay mainaig iti Kalidad ti serbisio ti OPAPA**

	Kapampanunutan		Sungbat		
1. Nalaka para kaniak ti agsursuro manipud kadagiti serbisio ti OPAPA iti internet.	5	4	3	2	1
2. Dagiti impormasion kadagiti serbisio ti OPAPA iti internet ket maibagay kadagiti kasapulan dagiti mannalon.	5	4	3	2	1
3. Magustuak ti pannakaiparang dagiti impormasion ti OPAPA iti internet.	5	4	3	2	1
4. Narigatko a maawatan dagiti lengguahe nga inusar ti OPAPA iti internet.	5	4	3	2	1
5. Nalawag ti pannakaiparang dagiti impormasion kadagiti serbisio ti OPAPA iti internet.	5	4	3	2	1
6. Naannayas ti panagsasaganad dagiti impormasion a nailanad iti OpAPA iti internet.	5	4	3	2	1
7. Makaguyugoy ti pannakaiparang ti serbisio ti OpAPA iti internet.	5	4	3	2	1
8. Naiparang dagiti serbisio ti OPAPA iti wagas a nalaka a maawatan.	5	4	3	2	1
9. Nalaka ti agsukisok iti impormasion kadagiti serbisio ti OPAPA iti internet.	5	4	3	2	1
10. Naiparang dagiti serbisio ti OPAPA iti internet iti makaay-ayo a wagas	5	4	3	2	1
11. Nalaka nga awaten ti panagsursuro nga agusar iti computer ken internet.	5	4	3	2	1
12. Nalaka nga usaren ti text center ti OPAPA.	5	4	3	2	1

**D. Dagiti kalikaguman a serbisio ti OPAPA /Tignay mainaig kadagitoy a kalikagum**

	Kapampanunutan		Sungbat		
1. Nalaka a surotan dagiti impormasion iti OPAPA.	5	4	3	2	1
2. Ti laengen agsursuro iti panangusar iti internet ti masapulko no addan kaniak dagiti serbisio ti OPAPA.	5	4	3	2	1
3. Masapul a magun-odak nga umuna dagiti serbisio ti OPAPA sakbay a magun-odko dagiti impormasion	5	4	3	2	1
4. Ammok nga usaren ti computer.	5	4	3	2	1
5. Nairuamakon nga agsukisok iti internet.	5	4	3	2	1
6. Nairuamakon nga agusar iti cell phone.	5	4	3	2	1

**E. Dagiti Linaon dagiti serbisio ti OPAPA**

	Kapampanunutan	Sungbat				
		5	4	3	2	1
1. Agtutunos dagiti impormasion a nailanad iti OPAPA.	5	4	3	2	1	
2. Nalawag nga iyanninaw dagiti ladawan dagiti nailanad a topiko.	5	4	3	2	1	
3. Nalaka a maawatan dagiti impormasion iti OPAPA.	5	4	3	2	1	
4. Mangipaay dagiti serbisio ti OPAPA iti internet kadagiti makagungona nga impormasion iti panagpatanor iti pagay.	5	4	3	2	1	
5. Mangipaay dagiti serbisio ti OPAPA iti internet kadagiti napapateg nga impormasion mainaig iti panagdur-as iti panagpatanor iti pagay.	5	4	3	2	1	
6. Naurnos dagiti impormasion a nailanad kadagiti serbisio ti OPAPA iti internet.	5	4	3	2	1	

**F. Pannakaiparang dagiti serbisio ti OpAPA**

	Salsaludsod	Sungbat	
		Wen	Saan
1. Nalaka kadi a mabasa ti wagas a pannakaiparangna?		<input type="checkbox"/>	<input type="checkbox"/>
2. Nalaka kadi a maawatan dagiti balikas?		<input type="checkbox"/>	<input type="checkbox"/>
3. Ababa kadi dagiti naaramat a sao?		<input type="checkbox"/>	<input type="checkbox"/>
4. Nalaka kadi a maawatan dagiti naaramat a sao?		<input type="checkbox"/>	<input type="checkbox"/>
5. Nalaka kadi a maawatan dagiti sasao a naaramat iti OPAPA?		<input type="checkbox"/>	<input type="checkbox"/>
6. Nailawlawag kadi met laeng dagiti baro/saan a familiar a sasao?		<input type="checkbox"/>	<input type="checkbox"/>

**V. Panagpannurray kadagiti nadumaduma a wagas iti pannakaidanon dagiti impormasion/ Panagusar iti Internet**

Kasano ti kinapateg ti panagpannurraymo kadagiti sumaganad a gubuayan dagiti impormasion? Usarem dagiti sumaganad a pangibasaram iti sungbatmo.

Gubuayan dagiti Impormasion	Nakapatpateg unay=1	Nakapatpateg=2	Napateg=3	Saan unay napateg=4	Saan pulos a napateg=5	Sungbat				
						5	4	3	2	1
1. Posters	5	4	3	2	1	5	4	3	2	1
2. PhilRice Newsletters	5	4	3	2	1	5	4	3	2	1
3. Billboard	5	4	3	2	1	5	4	3	2	1
4. Pamphlets/ leaflets/ Q&A/ technobulletins	5	4	3	2	1	5	4	3	2	1
5. Newspapers/ magazine clippings	5	4	3	2	1	5	4	3	2	1
6. Books	5	4	3	2	1	5	4	3	2	1
7. Flip Charts	5	4	3	2	1	5	4	3	2	1

8. Video/ VCDs/ CDs	5	4	3	2	1
9. Radio/ broadcast releases	5	4	3	2	1
10. Farmers' call/text center	5	4	3	2	1
11. Rice doctor	5	4	3	2	1
12. E-technobulletins	5	4	3	2	1
13. Radio+Internet+SMS messaging	5	4	3	2	1
14. Rice cyber clinic	5	4	3	2	1
15. e-Commerce	5	4	3	2	1
16. Rice knowledge bank	5	4	3	2	1
17. e-Learning modules	5	4	3	2	1
18. Mobile internet bus	5	4	3	2	1
19. Access provision	5	4	3	2	1
20. Fact sheets/ tehnotips	5	4	3	2	1
21. Pinoy farmers' Internet	5	4	3	2	1

#### VI. Maipapan iti Pagsalsaludsudan

1. Nagan (uray saan nga ibaga): \_\_\_\_\_

2. Tawen: \_\_\_\_\_

3. Kinatao:

Lalaki       Babae

4. Nagun-od nga adal:

- Nakadap-aw iti elementaria (1-5 years)  
 Nagturpos iti Elementaria (6 years)  
 Nakadap-aw iti sekundaria (7-9 years)  
 Nagturpos iti sekundaria (10 years)  
 Nakadap-aw iti kolehio (11-13 years)  
 Nagturpos iti Kolehio (14 years)  
 Ilanad no adda pay sabali:

\_\_\_\_\_

5. Kaadayo (km) ti pagtaengan manipud iti:

PhilRice: \_\_\_\_\_

ATI: \_\_\_\_\_

Kompania ti kemiko: \_\_\_\_\_

Pagtagilakuan kadagiti bin-i a bukbukel: \_\_\_\_\_

Pagtagilakuan kadagiti abono: \_\_\_\_\_

Kooperatiba dagiti mannalon: \_\_\_\_\_

6. Nakikamengan a grupo/organisasion dagiti mannalon, no adda:

a. \_\_\_\_\_

b. \_\_\_\_\_

c. \_\_\_\_\_

10. Maysaka kadi met nga mannalon?

Wen

Saan



11. Kangrunaan a pagsapulan: \_\_\_\_\_

12. Mano a tawenen nga addakayo iti dayta a pagsapulan? \_\_\_\_\_

13. Bilang ti miembro ti familia (dagiti kabbalay mo a makaammo nga agusar iti computer/internet) ken ibaga ti tawen da.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

14. Adda kadi ammom nga asideg a pag-internetan?  Wen  Saan

15. Dati kadi nga ammom ti agusar iti komputer?  Wen  Saan

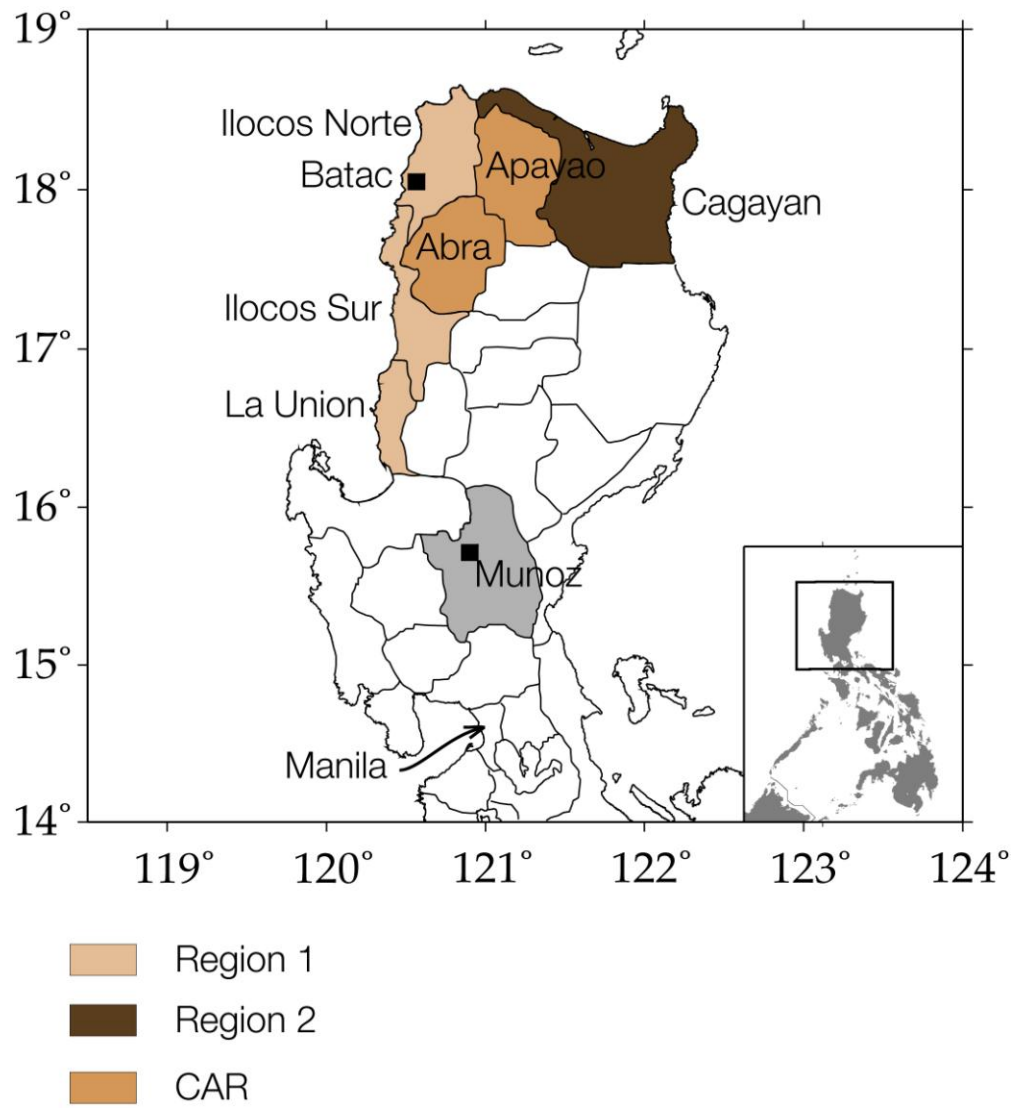
16. Kayat mo kadi ti agusar iti serbisio ti OPAPA iti internet manipud kadagiti mabayadan a pagkomputeran?  
 Wen  Saan

**VII. Comments**

\_\_\_\_\_

## Appendix C

### Map of Surveyed Areas in the Northern Luzon, Philippines



## Appendix D

### Letters of Verification and Pertinent E-mails

#### A. Sample Letter for Verification of Translation



## B. Letter of Support for Access of OPAPA Training List



11 January 2008

Office of Research Protections  
201 Kern Building  
Pennsylvania State University  
State College, PA 16801

Dear Ms. Jodi Mathieu,


Attention: Andrea R. Seisler

This is to certify that we are willing to provide the training list to Ms. Rhemilyn Relado's thesis proposal with **IRB application #27427** entitled, **Assessing the Usefulness of Rice Extension Materials**. In fact, she will be given access to the Open Academy for Philippine Agriculture (OPAPA) training list as necessary in her data collection and for a successful completion of her thesis activities here in the Philippines.

Also, we would like to inform you that Ms. Relado has our support and enthusiasm for her study to be conducted in our project sites here at Philippine Rice Research Institute (PhilRice) - Batac. The results of her study will improve the services that we will provide for our rice farmers especially in the area of rice information delivery.

I hope that this will help secure an approval of her thesis study from your office.

Sincerely,

  
Ms. Bethzaida Catudan  
OPAPA Point Person  
PhilRice-Batac R&D Coordinator

## C. Letter of Thesis Support from PhilRice



17 December 2007

**Ms. RHEMILYN Z. RELADO**  
*Pennsylvania State University*  
*State College, PA 16802*

Dear Rhem:

Greetings!

I am glad that you had been doing very well in your studies. Continue to do well and I am hoping that you will be back to PhilRice soon.

I am very pleased to inform you that PhilRice will be providing funds for your thesis proposal up to P150,000.00 (US\$3,639.89). The results that you will obtain from your research will be very helpful in improving our strategies and materials for information and extension activities in the Philippines.

My best regards.

Very truly yours,



**MADONNA C. CASIMERO**  
*Deputy Executive Director and Chair,*  
*Staff Development Committee*

cc: *Office for Research Protections*  
*201 Kern Building*  
*Pennsylvania State University*  
*State College, PA 16802*  
*Attention: Social Science Research Review*



Certified to ISO 9001:2000;  
 ISO 14001:2004; OHSAS 18001:1999

**Malligaya, Science City of Muñoz, Nueva Ecija, PHILIPPINES**  
 Trunklines: 63 (44) 456-0277; -0285; -0258; -0433; 0426  
 Tel/Fax: 63 (44) 456-0441; -0653; -0651 loc 512; -0394 loc 218; -0649 loc 261  
 Email: [pri@philrice.gov.ph](mailto:pri@philrice.gov.ph) • Website: [www.philrice.gov.ph](http://www.philrice.gov.ph)



## Appendix E

### Survey Manual with Pictogram

#### Assessment of Rice Extension Materials in the Philippines Questionnaire Manual for Enumerators

##### Step 1. Introduction and Consent Form for the Survey

A. E.g. I am \_\_\_\_\_ from \_\_\_\_\_. I am here to ask you if you are willing to participate in our survey.

B. Follow the steps in the **Informed Consent Form for Social Science Research**.

C. If the target respondent is willing to participate, then let him/her sign on the Consent Form. If not willing, do not force the target participant. Instead, thank him/her for his/her time.

D. After signing, give the respondent his/her copy of the consent form and keep the other copy.

##### Step 2. Formal Scheduled Interview with the Respondent

A. Fill the specific details regarding the location of the scheduled interview, e.g. Region, Province, City/Municipality, and Barangay.

B. Inform the respondent that the formal interview will begin.

C. Ask the first question which is on the last time the respondent needed an item for information.

##### Part I. Usefulness of Knowledge Products

A. Begin **Part I**. This part is on the usefulness of **knowledge products (KPs)**. Explain to the respondent that KPs are categorized into print and audio materials. **Print materials** are rice-related posters, PhilRice newsletters, billboards, pamphlets/leaflets/Q&A/technobulletins, newspaper/magazine clippings, books, flipcharts, etc. On the other hand, **audio-visual materials** refer to video, VCDs, radio/broadcast releases, CDs, etc.

B. **Proceed to Question 1 on Part 1**. If the respondent answers **YES**, continue to the next item. If the answer is **NO**, proceed to items on **Question 7**, skip **Question 8** and go to **Part III** of the questionnaire.

For a **YES** answer on **Question 1**, continue to **Question 1.1**. After **Question 1.1**, go to **Question 2**. For **Question 2**, if the answer is **YES**, proceed to the next questions in Part I. If the answer is **NO**, go directly to **Question 8** and after proceed to **Part III** of the questionnaire.

For a **YES** answer on **Question 2**, proceed to **Question 3**. In Question 3, check all the topics of KPs that the respondent has used. Then proceed to **Question 4** and ask the respondent of his/her **top five most** preferred materials based on his/her responses in Question 3. Proceed to **Question 5**. There are statements in Question 5 that will need the following scale for the responses. This is the scale: **Strongly Agree= 5, Agree=4, Uncertain=3, Disagree=2, Strongly Disagree=1**. You will be given a sheet of paper with the mentioned responses for you to show the target respondent of the response scale. After Question 5 is completed, proceed to items under **Question 6**. After the completed items on Question 6, proceed to **Part II** of the questionnaire.

**Note: Part II is only for the respondents who answered YES to Question 1 on Part I and YES to Question 2 on Part I. Otherwise, proceed to Part III.**

### **Part II. Factors Related to the Usefulness of Knowledge Products**

A. Part II is all about the identified factors related to the usefulness of KPs. Again, response scale will be needed. This is the scale: **Strongly Agree= 5, Agree=4, Uncertain=3, Disagree=2, Strongly Disagree=1 except on Section F**. Use the same sheet of paper with the mentioned responses used in Question 5 for you to show the target respondent of the response scale.

B. **Read the Statements in Sections A, B, C, D, and E**. In every statement on each section, wait for the respondent to choose from the response scale and encircle the appropriate number of the scale corresponding to every statement.

C. **After Section E, proceed to Section F**. Statements on Section F requires either YES or NO as responses.

### **Part III. Usefulness of OPAPA**

A. Begin **Part I**. This part is on the usefulness of **OPAPA services**. Explain to the respondent that OPAPA services include the list on Question 1.1. Read the list.

B. **Proceed to Question 1 on Part 1**. If the respondent answers **YES**, continue to the next item. If the answer is **NO**, proceed to items on **Question 7**, skip **Question 8** and go to **Part VI** of the questionnaire.

For a **YES** answer on **Question 1**, continue to **Question 1.1**. After **Question 1.1**, go to **Question 2**. For **Question 2**, if the answer is **YES**, proceed to the next questions in Part I. If the answer is **NO**, go directly to **Question 8** and after proceed to **Part VI** of the questionnaire.

For a **YES** answer on **Question 2**, proceed to **Question 3**. In Question 3, check all the topics of OPAPA service that the respondent has used/accessed. Then proceed to **Question 4** and ask the respondent of his/her **top five most** preferred materials based on his/her responses in Question 3. Proceed to **Question 5**. There are statements in Question 5 that will need the following scale for the responses. This is the scale: **Strongly Agree= 5, Agree=4, Uncertain=3, Disagree=2, Strongly Disagree=1**. You will be given a sheet of paper with the mentioned

responses for you to show the target respondent of the response scale. After Question 5 is completed, proceed to items under **Question 6**. After the completed items on Question 6, proceed to **Part II** of the questionnaire.

**Note: Part IV is only for the respondents who answered YES to Question 1 on Part III and YES to Question 2 on Part III. Otherwise, proceed to Part VI. This part is similar to Part 1 since in this section, the words KPs is replaced by OPAPA. However, statements remain the same.**

#### **Part IV. Usefulness of OPAPA**

A. Part IV is all about the identified factors related to the usefulness of OPAPA services. Again, response scale will be needed. This is the scale: **Strongly Agree= 5, Agree=4, Uncertain=3, Disagree=2, Strongly Disagree=1 except on Section F**. Use the same sheet of paper with the mentioned responses used in Question 5 for you to show the target respondent of the response scale.

**B. Read the Statements in Sections A, B, C, D, and E.** In every statement on each section, wait for the respondent to choose from the response scale and encircle the appropriate number of the scale corresponding to every statement.

**C. After Section E, proceed to Section F. Statements on Section F requires either YES or NO as responses.**

#### **Part V. Reliance on Mass Information Delivery Strategies/Web-based Services**

**Part V** is only for those who respondents who answered on **Parts I, II, III, and IV**. This means that Part V is only for those respondents who are aware of KPS and OPAPA services and at the same, use KPs/OPAPA services. Otherwise, proceed to **Part VI**.

#### **Part VI. Sociodemographics**

Ask the socio-demographics on the questions under Part VI. After completing Part VI, proceed to Part VII.

#### **Part VII. Comments**

On this part of the questionnaire, ask the respondent if they have further comments/suggestions.

#### **Step 3. Conclusion of the Survey**

Tell the respondent that you greatly appreciate his/her participation in the survey. Assure him/her that results of the survey will be used to further improve rice services for specific stakeholders especially with regard to delivery of rice information.



Pictogram for the Likert Scale Questions



5- Strongly Agree



4- Agree



3- Uncertain



2- Disagree



1- Strongly Disagree

## Appendix F

### Script for Enumerators and Consent Form for Study Respondents

#### A. Script for Enumerators

##### Verbal Script for Target Respondent Recruitment

Hello! I am \_\_\_\_\_. I am a data enumerator of the study entitled, Assessing the Usefulness of Philippine Rice Extension Materials. The study is an MS in Agricultural and Extension Education student's thesis from the Pennsylvania State University in the United States. The purpose of the research is to look at the different factors that affect the usefulness of rice extension materials in the Philippines. Thus, we are looking for research volunteers for the study. In this study, you will be asked to respond to questions regarding traditional extension and OPAPA as ICT-mediated extension. At the end of the survey process, you will be asked also of common sociodemographic variables.

Your participation in this research is confidential. The data will be stored and secured at Philippine Rice Research Institute (PhilRice) in a locked file. In the event of a publication or presentation resulting from the research, no personal identifiable information will be shared. The results of the study will be analyzed collectively. The results will be used for the purposes of the study and to help improve the services of the Philippine Rice Research Institute in connection with rice extension.

Also, during the interview, you might be photographed as part of the documentation of the study. The pictures will also be locked in a file at PhilRice. However, only the lead investigator, graduate committee members and the OPAPA personnel will have access to the pictures. After 3 years (February 2011), the pictures will be destroyed. Rest assured that the photographs will not be used in any other purpose outside from this study.

Your decision to be in this research is voluntary. You can stop at any time. You do not have to answer any questions you do not want to answer. Refusal to take part in or withdrawing from this study will involve no penalty or loss of benefits you would receive otherwise.

You must be 18 years of age or older to consent to take part in this research study. Please contact the principal investigator at [r zr127@psu.edu](mailto:r zr127@psu.edu) or ask the Socioeconomic Division of PhilRice if you have further questions.

We will greatly appreciate your participation in this study. Thank you very much.

(Note: If the participant is willing, set the time of the interview and thank him/her again.)

## Verbal Script-Ilocano Version

### Pagsurotan a Maisao iti Napili a Pagsaludsodan

Naimbag nga aldawyo! Siak ni \_\_\_\_\_. Maysaak a katulongan nga agkalap kadagiti impormasyon para iti panagadal a napauluan “Assessing the Usefulness of Philippine Rice Extension Materials”. Daytoy a panagadal ket isay-sayangkat ti maysa nga istudyante ti Master of Science (MS) iti kurso nga Agricultural and Extension Education manipud Pennsylvania State University iti Estados Unidos. Ti panggep daytoy a panagadal ket ammuen dagiti bambanag a mangapektar iti kinapateg dagiti material a pangwardas kadagiti impormasyon maipapan iti panagpatanor ti pagay iti Pilipinas. Ngarud, agsapsapul kami kadagiti situtulok a makipartisipar para iti daytoy a panagadal. Iti daytoy a panagadal, mapagsaludsodan kayo maipapan kadagiti tradisyunal a wagas ti panagiwardas iti impormasyon ken maipapan iti OPAPA kas maysa nga teknolohiya a mangiwardas iti impormasyon babaen iti internet. Kasanguanan a malpas ti panagsaludsod, makiddaw ti panangipaayyo kadagiti sumagmamano nga impormasyon maipapan kadakayo.

Mailed ti pannakipasetyo iti daytoy a panagsukisok. Maidulin a sitatalged iti Philippine Rice Research Institute (PhilRice) ken di mabianan iti asinoman dagiti datus. Nu addan to ti gundaway a maipablaak wenno maipresentar dagiti resulta daytoy a panagsukisok, awan ti personal a pakabigbigan dagiti nakipaset ti maidatag. Maminpinsan a mausig dagiti resulta daytoy a panagadal. Dagiti resulta ti panagusig ket mausar a mangsungbat kadagiti panggep daytoy a panagsukisok ken pangibasaran metten ti Philippine Rice Research Institute para iti pannakapasayaat ti serbisyona mainaig iti panagiwardas kadagiti impormasyon maipapan iti panagpatanor ti pagay.

Kanayunanna, mabalin a maalaankayo iti ladawan kabayatan ti panagsalsaludsod mi kadakayo kas kanayunan a dokumento para iti daytoy a panagadal. Maidulin met a sitatalged iti PhilRice dagiti maala a ladawan. Nupay kasta, ti panguluen daytoy a panagadal, miembros ti komite dagiti agturpos ken ti mangimatmaton ti OPAPA ket mapalubusan a mangkita iti ladawan. Madadael dagiti ladawan kalpasan ti tallo a tawen (February 2011). Maipatalged a saan a mausar dagiti ladawan iti sabali a panggep laksid iti daytoy a panagadal.

Sitululok ti pannakipartisiparyo iti daytoy a panagsukisok. Mabalinyo ti agsardeng iti aniaman a kanito. Saanyo a kasapulan a sungbatan dagiti saludsod a saanyo a kayat a sungbatan. Saankayo a mamulta nu agdesision kayo a sumardeng wenno agkedked makipartisipar iti daytoy a panagadal.

Masapul a saan a nababbaba ngem 18 ti tawenyo tapno mapalubusan kayo a makipartisipar iti daytoy a panagsukisok. No umanamongkayo a makipartisipar iti daytoy a panagsukisok ken kadagiti impormasyon a naibinsa-binsa iti ngato, pangaasiyo ta isuratyo iti baba ti nagan ken ti petsa ita nga aldaw

Pangaasiyo ta kontakenyo ti panguluen daytoy a panagadal iti [rzt127@psu.edu](mailto:rzt127@psu.edu) wenno agdamag iti Socioeconomic Division iti PhilRice nu adda pay kanayunan a saludsodyo.

Apresiarenmi unay ti pannakipasetyo iti daytoy a panagadal. Agyaman kami iti adu.

**(Palagip: Nu situtulok a makipartisipar, iyurnosyo ti aldaw ken oras ti panagsaludsodyo, kalpasanna iyebkasyo manen ti panagyaman)**

## B. Consent Form for Survey Respondents



**Informed Consent Form for Social Science Research**  
The Pennsylvania State University

**Title of Project: Assessing the Usefulness of Rice Extension Materials in the Philippines**

**Principal Investigator:** Rhemilyn Z. Relado, Graduate Student  
009 Ferguson Building  
University Park, PA 16802  
(814) 863-0416; [r zr127@psu.edu](mailto:r zr127@psu.edu)

**Advisor:** Dr. Rama B. Radhakrishna  
212 Ferguson Building  
University Park, PA 16802  
(814) 863-7069; [brr100@psu.edu](mailto:brr100@psu.edu)

**Graduate Committee:** Dr. Joan Thomson, Graduate Committee Member  
102 Ferguson Building  
University Park, PA 16802  
(814) 863- 3825

Dr. Leland Glenna, Graduate Committee Member  
15B Armsby Building  
University Park, PA 16802

- Purpose of the Study:** The purpose of this research is look at the different factors that affect the usefulness of Philippine rice extension materials. Philippine rice extension materials are divided into two: knowledge products (traditional extension, i.e. print and audio materials), and Open Academy for Philippine Agriculture (OPAPA) which is an e-extension.
- Procedures to be followed:** You will be asked to answer a survey questionnaire regarding your perception on the usefulness of Philippine rice extension materials. Also, you will be asked to provide some demographics that are related to the study. You can also choose not to answer questions in the survey questionnaire that will make you uncomfortable. Your willingness to participate will be greatly valued.
- Duration/Time:** The survey questions will require 30 minutes of your time. The survey period will cover the whole month of January for all the individuals that are chosen to participate in this study.
- Statement of Confidentiality:** Your participation in this research is confidential. The data will be stored and secured at Philippine Rice Research Institute (PhilRice) in a locked file. In the event of a publication or presentation resulting from the research, no personal identifiable information will be shared. The results of the study will be analyzed collectively. The results will be used for the purposes of the study and to help improve the services of the Philippine Rice Research Institute in connection with rice extension.

Also, during the interview, you might be photographed as part of the documentation of the study. The pictures will also be locked in a file at PhilRice. However, only the lead investigator, graduate committee members and the OPAPA personnel will have access to the pictures. After 3 years (February 2011), the pictures will be destroyed. Rest assured that the photographs will not be used in any other purpose outside from this study.

- Right to Ask Questions:** Please contact me at my email address at [r zr127@psu.edu](mailto:r zr127@psu.edu) or ask the Socioeconomic Division of the Philippine Rice Research Institute. I will answer your questions regarding the study.

1. **Voluntary Participation:** Your decision to be in this research is voluntary. You can stop at any time. You do not have to answer any questions you do not want to answer. Refusal to take part in or withdrawing from this study will involve no penalty or loss of benefits you would receive otherwise.

You must be 18 years of age or older to consent to take part in this research study. If you agree to take part in this research study and the information outlined above, please sign your name and indicate the date below.

You will be given a copy of this form for your records.

I give my permission to be photographed.

I do not give my permission to be photographed.

\_\_\_\_\_  
Participant Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Person Obtaining Consent

\_\_\_\_\_  
Date



**Porma a Mangipakaammo iti Pammalubos para iti Panangisayangkat iti Panagsukisok**  
Unibersidad ti Estado ti Pennsylvania

**Paulo ti Proyekto:** **Assessing the Usefulness of Rice Extension Materials in the Philippines**

**Pangulueng nga Agsukisok:** Rhemilyn Z. Relado, Graduate Student  
009 Ferguson Building  
University Park, PA 16802  
(814) 863-0416; [rzz127@psu.edu](mailto:rzz127@psu.edu)

**Manangbalakad:** Dr. Rama B. Radhakrishna  
212 Ferguson Building  
University Park, PA 16802  
(814) 863-7069; [brr100@psu.edu](mailto:brr100@psu.edu)

**Komite dagiti Agturpos:** Dr. Joan Thomson, Graduate Committee Member  
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Dr. Leland Glenna, Graduate Committee Member  
15B Armsby Building  
University Park, PA 16802

1. **Panggep Daytoy a Panagadal:** Ti panggep daytoy a panagsukisok ket tapno ammuen dagiti mabalin a mangapektar iti kinapateg dagiti material a pangwardas kadagiti impormasyon maipapan iti panagpatanor ti pagay iti Pilipinas. Adda ti nagkadua a nakabing-bingayan dagitoy a material: umuna, dagiti produkto a pangalaan iti adal (tradisyunal a panangwardas, kas iti naisurat ken manggep a material), ken ti maikadua, ti Open Academy for Philippine Agriculture (OPAPA) nga agusar iti internet a mangwardas kadagiti impormasyon maipapan iti panagpatanor ti pagay.
2. **Dagiti Addang a Suroten:** Mapagsaludsodan kayo maipapan kadagiti maawatanyo mainaig iti kinapateg dagiti material a pangwardas kadagiti impormasyon maipapan iti panagpatanor ti pagay iti Pilipinas. Kasta met, makiddaw ti panangipaayo kadagiti kanayunan nga impormasyon wenno datus a makatulong wenno mainaig iti daytoy a panagadal. Mabalinyo met a saan a sungbatan dagiti saludsod a mangpaalusis kadakayo. Maapresiar la unay ti kinatulokyo a makipaset iti daytoy a panagadal.
3. **Kaatiddog/Kabayag:** Maikalikagum kadakayo ti 30 minutos a mangsungbat kadagiti salsaludsod. Mapagsaludsodan ti amin a napili a makipaset iti daytoy a panagadal iti intero a bulan ti Enero.
4. **Pannakaitalimeng:** Mailimed ti pannakipasetyo iti daytoy a panagsukisok. Maidulin a sitataged iti Philippine Rice Research Institute (PhilRice) ken di mabiangan ti asinoman dagiti datus/impormasyon. Nu addan to ti gundaway a maipablaak wenno maipresentar dagiti resulta daytoy a panagsukisok, awan ti personal a pakabigbigan dagiti nakipaset ti maidatag. Maminpinsan a mausig dagiti resulta daytoy a panagadal. Dagiti resulta ti panagusig ket mausar a mangsungbat kadagiti panggep daytoy a panagsukisok ken pangibasaran ti Philippine Rice Research Institute para iti pannakapasayaat ti serbisyona mainaig iti panangwardas kadagiti impormasyon maipapan iti panagpatanor ti pagay.

Kanayonna, mabalin a maalaankayo iti ladawan kabayatan ti panagsalsaludsod mi kadakayo kas kanayunan a dokumento para iti daytoy a panagadal. Maidulin met a sitatalged iti PhilRice dagiti maala a ladawan. Nupay kasta, ti pangulueng daytoy a panagadal, miembros ti komite dagiti agturpos ken ti mangimatmaton ti OPAPA ket mapalubusan a mangkita iti ladawan. Madadael dagiti ladawan kalpasan ti tallo a tawen (February 2011). Maipatalged a saan a mausar dagiti ladawan iti sabali a panggep laksid iti daytoy a panagadal.

1. **Karbengan nga Agsaludsod:** Mabalin a kontakten dak iti e-mail address ko iti [rzz127@psu.edu](mailto:rzz127@psu.edu) wenna agdamag kayo iti Socioeconomic Division iti Philippine Rice Research Institute. Sidadaan nak a mangsungbat ti aniaman a saludsodyo mainaig iti daytoy a panagadal.
2. **Situlok a Pannakipartisipar:** Situtulok ti pannakipartisiparyo iti daytoy a panagsukisok. Mabalinyo ti agsardeng iti aniaman a kanito. Saanyo a kasapulan a sungbatan dagiti saludsod a saanyo a kayat a sungbatan. Saankayo a mamulta nu agdesision kayo a sumardeng wenna agkedked makipartisipar iti daytoy a panagadal.

Masapul a saan a nababbaba ngem 18 ti tawenyo tapno mapalubusan kayo a makipartisipar iti daytoy a panagsukisok. No umanamongkayo a makipartisipar iti daytoy a panagsukisok ken kadagiti impormasyon a naibinsa-binsa iti ngato, pangaasiyo ta isuratyo iti baba ti nagan ken ti petsa ita nga aldaw.

Maipaayan kayo ti bukodyo a kopya daytoy kasuratan.

\_\_\_ Adda ti pamalubosko a maalaan ti ladawan.

\_\_\_ Saanko nga ipalubos a maalaannak ti ladawan.

\_\_\_\_\_  
Pirma ti makipartisipar

\_\_\_\_\_  
Petsa

\_\_\_\_\_  
Nagan ti manggungun-od iti pamalubos

\_\_\_\_\_  
Petsa

## Appendix G

### Additional Tables for KPs

Table G-1: Respondents Who Indicated Awareness of KPs (N=135)

KPs	Frequency	%
<b>KPs (Yes)</b>	<b>135</b>	<b>100</b>
<b>Posters</b>	<b>126</b>	<b>93.3</b>
Newsletter	114	84.4
Billboards	90	66.7
<b>Pamphlets</b>	<b>133</b>	<b>98.5</b>
Newspaper Clippings	102	75.6
Books	107	79.3
Flip Charts	75	55.6
VCDs	81	60
Radio/Broadcast Release	74	54.8
CDs	72	53.3

Table G-2: Respondents Who Indicated Usage of KPs (N=135)

KPs	Frequency	%
<b>KPs (Yes)</b>	<b>131</b>	<b>97</b>
<b>Posters</b>	<b>99</b>	<b>75.6</b>
<b>Newsletter</b>	<b>89</b>	<b>67.9</b>
Billboards	25	19.1
<b>Pamphlets</b>	<b>124</b>	<b>94.7</b>
Newspaper Clippings	76	58.0
Books	83	63.4
Flip Charts	36	27.5
VCDs	54	41.2
Radio/Broadcast Release	37	28.2
CDs	37	28.2



Table G-3: KP Topics Accessed by Respondents (N=131)

Topics	Frequency	%
Importance of Rice	90	68.7
Parts of the Rice/Morphology	75	57.3
Rice Environments	74	56.5
Rice Varieties	115	87.8
Seed Production and Seed Exchange	68	51.9
Land Preparation	103	78.6
Crop Establishment	104	79.4
<b>Water Management</b>	<b>121</b>	<b>92.4</b>
<b>Nutrient Management</b>	<b>123</b>	<b>93.9</b>
<b>Integrated Pest Management</b>	<b>119</b>	<b>90.8</b>
Harvest Management	76	58.0
Post-harvest Management	79	60.3

Table G-4: Respondents' Preferred KP Materials

KP	Preferred 1	Preferred 2	Preferred 3	Preferred 4	Preferred 5
	N=122	N=121	N=112	N=98	N=69
	%	%	%	%	%
1. Pamphlets	<b>47.5</b>	<b>29.8</b>	11.6	9.2	5.8
2. Books	11.5	18.2	17.9	11.2	10.1
3. PhilRice Newsletters	4.9	20.7	<b>20.5</b>	11.2	2.9
4. Posters	22.1	12.4	14.3	16.3	15.9
5. Newspapers	4.9	9.9	19.6	12.2	7.2
6. VCDs/CDs	7.4	4.1	6.2	<b>19.4</b>	<b>23.2</b>
7. Radio Broadcast	.8	0	2.7	6.1	17.4
8. Technobulletins	.8	0	0	1.0	1.5
9. Flipcharts	0	2.5	3.6	10.2	3.7
10. Billboards	0	2.5	3.6	3.1	7.2

Table G-5: Survey Participants' Responses to Usefulness of KPs

Statements	N	M <sup>a</sup>	SD
<b>1. I find KPs useful.</b>	<b>131</b>	<b>4.63</b>	<b>.56</b>
2. Through KPs, I learn how to improve my rice production techniques.	131	4.59	.55
3. With KPs, I am well-informed of new technologies.	131	4.60	.59
4. I use the information included in KPs.	131	4.50	.56
5. The information in KPs is interesting.	131	4.60	.58
6. KPs enhance my capacity as a rice farmer/ extension agents/ agriculture personnel.	131	4.60	.58
7. KPs are informative.	131	4.62	.56
8. I have shared what I learn from KPs with my co-farmers/ extension agents/ other rice-related individuals.	131	4.51	.59
9. I trust the information included in KPs.	131	4.60	.55
<b>10. KPs provide valuable tips on rice farming.</b>	<b>131</b>	<b>4.63</b>	<b>.54</b>
11. I have shared the information in KPs with other rice production personnel (aside from farmers).	131	4.40	.66
<b>Overall Summated Score</b>	<b>131</b>	<b>4.57</b>	<b>.44</b>

<sup>a</sup>Scale: 1=strongly disagree; 2=disagree; 3=uncertain; 4=agree; and 5=strongly agree

Table **G-6**: Respondents' Average of Times of Using KPs in a Month

OPAPA Services	N	Times of Using OPAPA in a Month									
		Not at all	%	Once a month	%	Twice a month	%	Once a week	%	Twice or more week	%
Posters	100	1	1.0	<b>50</b>	<b>50.0</b>	28	28	14	14.0	7	7.0
Newsletter	59	0	0	<b>37</b>	<b>62.7</b>	13	22.0	6	10.2	3	5.1
Billboards	10	0	0	<b>7</b>	<b>70.0</b>	1	10.0	1	10.0	1	10.0
Pamphlets	128	0	0	<b>49</b>	<b>38.3</b>	35	27.3	24	18.8	20	15.6
Newspaper Clippings	56	0	0	<b>27</b>	<b>48.2</b>	15	26.8	7	12.5	7	12.5
Books	79	0	0	<b>41</b>	<b>51.9</b>	19	24.1	14	17.7	5	6.3
Flip Charts	24	0	0	<b>17</b>	<b>70.8</b>	3	12.5	2	8.3	2	8.3
VCDs	61	1	1.6	<b>47</b>	<b>77.0</b>	5	8.2	6	9.8	2	3.3
Radio/Broadcast Release	22	0	0	<b>12</b>	<b>54.5</b>	4	18.2	5	22.7	1	4.5

Table G-7: Respondents' Average Hours of Using KPs

KPs	N	Average Hours													
		Not at all	%	Less than 1 hour to 5 hours	%	More than 5 hours to 10 hours	%	More than 10 hours to 15 hours	%	More than 15 hours to 20 hours	%	More than 20 hours to 25 hours	%	More than 25 hours	%
Posters	100	0	0	<b>90</b>	<b>90.0</b>	3	3.0	2	2.0	0	0	0	0	5	5.0
Newsletter	61	0	0	<b>51</b>	<b>83.6</b>	5	8.2	2	3.3	0	0	0	0	3	2.2
Billboards	12	0	0	<b>10</b>	<b>83.3</b>	1	8.3	0	0	1	8.3	0	0	0	0
Pamphlets	126	0	0	<b>87</b>	<b>69.0</b>	24	19.0	8	6.3	1	.8	1	.8	5	4.0
Newspaper Clippings	48	0	0	<b>36</b>	<b>75.0</b>	8	16.7	3	6.2	1	2.1	0	0	0	0
Books	76	0	0	<b>55</b>	<b>72.4</b>	17	22.4	1	1.3	1	1.3	0	0	2	2.6
Flip Charts	24	0	0	<b>21</b>	<b>15.6</b>	2	8.3	0	0	0	0	0	0	1	4.2
VCDs	55	1	1.8	<b>47</b>	<b>85.5</b>	4	7.3	1	1.8	0	0	1	1.8	1	1.8
Radio/Broadcast Release	23	0	0	<b>21</b>	<b>91.3</b>	2	8.7	0	0	0	0	0	0	0	0

Table G-8: Survey Participants' Responses on the SOCIAL Gratification of KPs

Statements	N	M <sup>a</sup>	SD
<b>1. To get advice on rice farming.</b>	<b>131</b>	<b>4.65</b>	<b>.50</b>
2. To have information to pass on to other people.	131	4.46	.63
3. To have something to discuss with my co-farmers.	131	4.44	.60
4. To stay in touch with other rice production personnel.	131	4.44	.61
<b>5. To be able to respond to inquiries on rice production.</b>	<b>131</b>	<b>4.58</b>	<b>.50</b>

<sup>a</sup>Scale: 1=strongly disagree; 2=disagree; 3=uncertain; 4=agree; and 5=strongly agree

Table G-9: Survey Participants' Responses on the ENTERTAINMENT Gratification of KPs

Statements	N	M <sup>a</sup>	SD
1. To be entertained.	131	4.08	.80
2. To feel good.	131	4.12	.73
3. To have fun.	131	3.90	.86
4. To find excitement.	131	3.89	.89
<b>5. To be inspired with real life stories on rice production.</b>	<b>131</b>	<b>4.36</b>	<b>.63</b>

<sup>a</sup>Scale: 1=strongly disagree; 2=disagree; 3=uncertain; 4=agree; and 5=strongly agree

Table G-10: Survey Participants' Responses on the ACQUISITION of NEW KNOWLEDGE Gratification of KPs

Statements	N	M <sup>a</sup>	SD
<b>1. To get information on new rice technologies.</b>	<b>131</b>	<b>4.76</b>	<b>.52</b>
2. To find helpful rice production information.	131	4.71	.50
3. To learn how to do rice production related things.	131	4.69	.50
4. To access information specific to my needs as rice farmer.	131	4.66	.53
<b>5. To know more about every phase of rice production.</b>	<b>131</b>	<b>4.76</b>	<b>.43</b>

<sup>a</sup>Scale: 1=strongly disagree; 2=disagree; 3=uncertain; 4=agree; and 5=strongly agree

Table G-11: Survey Participants' Responses on the SURVEILLANCE Gratification of KPs

Statements	N	M <sup>a</sup>	SD
1. To keep up with what is going on in rice production.	131	4.62	.50
2. To get information I can trust.	131	4.61	.50
3. To get rice news that is not available elsewhere.	131	4.54	.54
<b>4. To get information on rice production events.</b>	<b>131</b>	<b>4.63</b>	<b>.52</b>
5. To be informed on rice-based production.	131	4.55	.68

<sup>a</sup>Scale: 1=strongly disagree; 2=disagree; 3=uncertain; 4=agree; and 5=strongly agree

Table G-12: Survey Participants' Responses on the PEER PRESSURE Gratification of KPs

Statements	N	M <sup>a</sup>	SD
1. Because everyone else is using it.	131	3.69	.89
2. To feel knowledgeable.	131	4.11	.83
3. To feel important.	131	3.87	.94
<b>4. To gain status.</b>	<b>131</b>	<b>3.88</b>	<b>.96</b>
5. To be above others.	131	3.59	1.10

<sup>a</sup>Scale: 1=strongly disagree; 2=disagree; 3=uncertain; 4=agree; and 5=strongly agree

Table G-13: Survey Participants' Responses on the FUTURE PLANS Gratification of KPs

Statements	N	M <sup>a</sup>	SD
1. To keep learning.	131	4.64	.51
2. To stay up to date with rice information.	131	4.68	.47
<b>3. To develop new ideas on rice production.</b>	<b>131</b>	<b>4.70</b>	<b>.49</b>
4. To stay up to date with my career.	131	4.53	.57
5. To develop new interests.	131	4.54	.62

<sup>a</sup>Scale: 1=strongly disagree; 2=disagree; 3=uncertain; 4=agree; and 5=strongly agree

Table G-14: Survey Participants' Responses on the FAME Gratification of KPs

Statements	N	M <sup>a</sup>	SD
1. To be ahead of others in rice information.	131	3.98	1.02
2. So that others will look up to me for rice information.	131	3.86	1.04
3. To let people know that I am well-informed.	131	3.94	1.01
4. To be considered as a credible information source.	131	4.26	.74
<b>5. To be able to help others with rice production concerns.</b>	<b>131</b>	<b>4.47</b>	<b>.60</b>

<sup>a</sup>Scale: 1=strongly disagree; 2=disagree; 3=uncertain; 4=agree; and 5=strongly agree

Table G-15: Survey Participants' Responses on ACCESS to KPs

Statements	N	M <sup>a</sup>	SD
1. Whenever I want it.	131	3.94	.87
2. From academic institutions.	131	3.82	.90
<b>3. From farmers' learning centers.</b>	<b>131</b>	<b>4.13</b>	<b>.84</b>
4. Through farmer organizations/cooperatives.	131	4.08	.83
<b>5. Through PhilRice office/ rice-related institutions.</b>	<b>131</b>	<b>4.49</b>	<b>.61</b>
6. Through chemical companies.	131	3.34	.92
7. Through seed dealers/ seed growers.	131	3.61	.94
8. Through fertilizer dealers.	131	3.43	.98
<b>9. From LGU Agriculture office.</b>	<b>131</b>	<b>4.37</b>	<b>.77</b>
10. From FITS center.	131	3.99	1.14
11. From co-farmers.	131	3.94	1.04

<sup>a</sup>Scale: 1=strongly disagree; 2=disagree; 3=uncertain; 4=agree; and 5=strongly agree

Table G-16: Survey Participants' Responses on PERCEIVED CHARACTERISTICS of KPs

Statements	N	M <sup>a</sup>	SD
1. Learning to use KPs is easy for me.	131	4.40	.68
2. The information on KPs is flexible to my farm needs.	131	4.44	.58
3. I like how the information is presented in KPs.	131	4.41	.58
<b>4. The way the information is written in KPs is clear to me.</b>	<b>131</b>	<b>4.45</b>	<b>.56</b>
5. Information included in KPs flows well from page to page.	131	4.44	.60
6. KPs are attractive.	131	4.35	.62
7. KPs are presented in a familiar format for easy understanding.	131	4.43	.58
<b>8. KPs are easy to use.</b>	<b>131</b>	<b>4.47</b>	<b>.59</b>
9. KPs are visually appealing.	131	4.36	.57
<b>10. The information on KPs is flexible to extension agents' needs.</b>	<b>36</b>	<b>4.58</b>	<b>.50</b>

<sup>a</sup>Scale: 1=strongly disagree; 2=disagree; 3=uncertain; 4=agree; and 5=strongly agree



Table G-17: Survey Participants' Responses on ATTITUDES TOWARD THE TASK REQUIREMENTS of KPs

Statements	N	M <sup>a</sup>	SD
<b>1. The information in KPs is easy to follow.</b>	<b>131</b>	<b>4.44</b>	<b>.61</b>
2. The only thing for me to do when I receive a KP is to read it.	131	3.17	1.14
3. I need to get hold of KPs before I get the information.	131	4.01	.83
4. I prefer to have hard copies than searching in computers.	131	4.11	.85
5. I am used to having KPs.	131	4.24	.77

<sup>a</sup>Scale: 1=strongly disagree; 2=disagree; 3=uncertain; 4=agree; and 5=strongly agree

Table G-18: Survey Participants' Responses on CONTENT of KPs

Statements	N	M <sup>a</sup>	SD
1. The information included in KPs is relevant.	131	4.53	.53
2. The pictures clearly illustrate the topic being presented.	131	4.38	.58
3. The information presented is understandable.	131	4.49	.56
4. KPs provide essential details on rice production.	131	4.49	.59
<b>5. KPs provide important updates on rice production.</b>	<b>131</b>	<b>4.54</b>	<b>.54</b>
6. KPs' information is logically organized.	131	4.47	.62

<sup>a</sup>Scale: 1=strongly disagree; 2=disagree; 3=uncertain; 4=agree; and 5=strongly agree

Table G-19: Survey Participants' Responses on RELIANCE on KPs

Statements	N	M <sup>a</sup>	SD
1. Posters	131	3.79	1.45
2. PhilRice Newsletters	131	3.86	1.41
3. Billboards	131	3.25	1.65
4. Pamphlets/leaflets/Q&A/technobulletins	131	4.29	1.08
5. Newspapers/magazine clippings	131	3.43	1.65
6. Books	131	3.47	1.71
7. Flip Charts	131	2.78	1.70
8. Video/VCDs/CDs	131	2.78	1.72
9. Radio/Broadcast releases	131	2.42	1.61

<sup>a</sup>Scale: 1=not at all; 2=some extent; 3=moderate extent; 4=great extent; and 5=very great extent

Table G-20: Participants Responses on READABILITY of KPs

Questions	N	Responses			
		Yes	%	No	%
1. Is the text readable?	131	125	95.4	6	4.6
2. Are the words simple?	131	126	96.2	5	3.7
3. Are the sentences short?	131	124	94.7	7	5.3
4. Are the sentences easy to understand?	131	129	98.5	2	1.5
5. Are KPs free of grammatical errors?	131	118	90.1	13	9.9
6. Are technical jargons/terms explained?	131	122	93.1	9	6.9

## Appendix H

### Additional Tables for OPAPA

Table H-1: Respondents Who Indicated Awareness of OPAPA

OPAPA	N	Frequency	%
<b>OPAPA (Yes)</b>	<b>135</b>	<b>127</b>	<b>94.1</b>
<b>Basic ICT/ Computer Training</b>	<b>127</b>	<b>121</b>	<b>95.3</b>
<b>Farmers' Call/Text Center</b>	<b>127</b>	<b>113</b>	<b>89.0</b>
Rice Doctor	127	88	69.3
E-technobulletins	127	55	43.3
<b>Pinoy Farmers' Internet</b>	<b>127</b>	<b>104</b>	<b>81.9</b>
Radio+Internet+SMS Messaging	127	80	63.0
Rice Cyber Clinic	127	55	43.3
e-Commerce	127	46	36.2
Rice Knowledge Bank	127	96	75.6
e-Learning Modules	127	72	56.7
Mobile Internet Bus	127	69	54.3
Access Provision	127	33	26.0
Fact Sheets/ Techno Tips	127	67	51.9

Table H-2: Respondents Who Indicated Usage OPAPA (N=135)

OPAPA	N	Frequency	%
<b>OPAPA (Yes)</b>	<b>127</b>	<b>110</b>	<b>86.6</b>
<b>Basic ICT/ Computer Training</b>	<b>110</b>	<b>99</b>	<b>90.0</b>
<b>Farmers' Call/Text Center</b>	<b>110</b>	<b>65</b>	<b>59.1</b>
Rice Doctor	110	44	40.0
E-technobulletins	110	24	21.8
Pinoy Farmers' Internet	110	54	49.1
Radio+Internet+SMS Messaging	110	39	35.5
Rice Cyber Clinic	110	15	13.6
e-Commerce	110	15	13.6
<b>Rice Knowledge Bank</b>	<b>110</b>	<b>66</b>	<b>60.0</b>
e-Learning Modules	110	21	19.1
Mobile Internet Bus	110	13	11.8
Access Provision	110	5	4.5
Fact Sheets/ Techno Tips	110	19	17.3

Table H-3: OPAPA Topics Accessed by Respondents (N=110)

Topics	Frequency	%
Importance of Rice	68	61.8
Parts of the Rice/Morphology	58	52.7
Rice Environments	56	50.9
Rice Varieties	84	76.4
Seed Production and Seed Exchange	47	42.7
Land Preparation	60	54.5
Crop Establishment	69	62.7
<b>Water Management</b>	<b>90</b>	<b>81.8</b>
<b>Nutrient Management</b>	<b>100</b>	<b>90.9</b>
<b>Integrated Pest Management</b>	<b>93</b>	<b>84.5</b>
Harvest Management	46	41.8
Post-harvest Management	48	43.6

Table H-4: Respondents' Preferred OPAPA Services

OPAPA Services	Preferred	Preferred	Preferred	Preferred	Preferred
	1	2	3	4	5
	N=106	N=94	N=77	N=49	N=28
	%	%	%	%	%
1. Rice Knowledge Bank	8.5	18.1	<b>20.8</b>	18.4	<b>21.4</b>
2. Pinoy Farmer's Internet	12.3	13.8	10.4	<b>20.4</b>	7.1
3. Basic ICT Training	<b>49.1</b>	20.2	9.1	4.1	7.1
4. Farmers' Call/Text Center	22.6	<b>23.4</b>	6.5	6.1	14.3
5. RIS Messaging	0	3.2	18.2	4.1	10.7
6. Rice Doctor	4.7	14.9	15.6	8.2	3.6
7. E-Fact Sheets	1.9	0	0	6.1	14.3
8. E-Technobulletins	0	3.2	7.8	6.1	0
9. E-learning Modules	.9	1.1	3.9	12.2	14.3
10. E-commerce	0	1.1	3.9	6.1	3.6
11. Rice Cyber Clinic	0	1.1	2.6	6.1	3.6
12. Access Provision	0	0	1.3	2.0	0

Table H-5: Survey Participants' Respondents Responses on Usefulness of OPAPA Statements

Statements	N	M <sup>a</sup>	SD
<b>1. I find OPAPA services useful.</b>	<b>110</b>	<b>4.55</b>	<b>.61</b>
2. Through OPAPA services, I learn how to improve my rice production knowledge.	110	4.35	.64
3. With OPAPA services, I am well-informed of new technologies.	110	4.35	.64
4. I use the information included in OPAPA services.	110	4.25	.66
5. The information in OPAPA services is interesting.	110	4.35	.61
6. Using OPAPA services enhances my capacity as a rice farmer.	110	4.38	.65
7. OPAPA services are informative.	110	4.42	.67
8. I have shared what I learn from OPAPA services with my co-farmers.	110	4.28	.69
9. I trust the information included in OPAPA services.	110	4.42	.64
10. OPAPA services provide valuable tips on rice farming.	110	4.41	.61
11. I have shared the information in OPAPA services with other rice production personnel (aside from farmers).	110	4.29	.70
<b>Overall Summated Score</b>	<b>110</b>	<b>4.37</b>	<b>.55</b>

<sup>a</sup>Scale: 1=strongly disagree; 2=disagree; 3=uncertain; 4=agree; and 5=strongly agree

Table **H-6**: Respondents' Average of Times of Using OPAPA in a Month

OPAPA Services	N	Times of Using OPAPA in a Month									
		Not at all	%	Once a month	%	Twice a month	%	Once a week	%	Twice or more week	%
Basic ICT/ Computer Training	86	2	2.3	<b>72</b>	<b>83.7</b>	7	8.1	4	4.7	1	1.2
Farmers' Call/Text Center	67	0	0	<b>36</b>	<b>53.7</b>	18	26.9	10	14.9	3	4.5
Rice Doctor	32	0	0	<b>30</b>	<b>93.8</b>	2	6.2	0	0	0	0
E-technobulletins	20	0	0	<b>19</b>	<b>95.0</b>	1	5.0	0	0	0	0
Pinoy Farmers' Internet	61	2	3.3	<b>43</b>	<b>70.5</b>	10	16.4	5	8.2	1	1.6
Radio+Internet+SMS Messaging	21	0	0	<b>19</b>	<b>90.5</b>	2	9.5	0	0	0	0
Rice Cyber Clinic	10	0	0	<b>9</b>	<b>90.0</b>	1	10.0	0	0	0	0
e-Commerce	11	0	0	<b>11</b>	<b>100</b>	0	0	0	0	0	0
Rice Knowledge Bank	59	1	1.7	<b>48</b>	<b>81.4</b>	7	11.9	2	3.4	1	1.7
e-Learning Modules	11	0	0	<b>9</b>	<b>81.8</b>	2	18.2	0	0	0	0
Fact Sheets/ Techno Tips	10	0	0	<b>8</b>	<b>80</b>	1	10.0	0	0	1	10.0

Table H-7: Respondents' Average Hours of Using OPAPA

OPAPA	N	Average Hours													
		Not at all	%	Less than 1 hour to 5 hours	%	More than 5 to 10 hours	%	More than 10 to 15 hours	%	More than 15 to 20 hours	%	More than 20 to 25 hours	%	More than 25 hours	%
Basic ICT/ Computer Training	85	1	1.2	<b>72</b>	<b>84.7</b>	8	9.4	2	2.4	2	2.4	0	0	0	0
Farmers' Call/Text Center	67	0	0	<b>56</b>	<b>83.6</b>	9	13.4	2	3.0	0	0	0	0	0	0
Rice Doctor	34	0	0	<b>33</b>	<b>97.1</b>	1	2.9	0	0	0	0	0	0	0	0
E-technobulletins Fact Sheets/ Techno Tips	25	0	0	<b>23</b>	<b>92.0</b>	1	4.0	1	4.0	0	0	0	0	0	0
Pinoy Farmers' Internet	60	2	3.3	<b>46</b>	<b>76.7</b>	11	18.3	0	0	0	0	0	0	1	1.7
Radio+Internet+SMS Messaging	21	0	0	<b>21</b>	<b>100</b>	0	0	0	0	0	0	0	0	0	0
Rice Cyber Clinic	10	0	0	<b>9</b>	<b>90.0</b>	1	10.0	0	0	0	0	0	0	0	0
e-Commerce	11	0	0	<b>11</b>	<b>100</b>	0	0	0	0	0	0	0	0	0	0
Rice Knowledge Bank	53	0	0	<b>51</b>	<b>96.2</b>	0	0	1	1.9	0	0	0	0	1	1.9
e-Learning Modules	10	0	0	<b>10</b>	<b>100</b>	0	0	0	0	0	0	0	0	0	0



Table H-8: Survey Participants' Responses on the SOCIAL Gratification of OPAPA

Statements	N	M <sup>a</sup>	SD
<b>1. To get advice on rice farming.</b>	<b>110</b>	<b>4.43</b>	<b>.58</b>
2. To have information to pass on to other people.	110	4.40	.58
3. To have something to discuss with my co-farmers.	110	4.29	.65
4. To stay in touch with other rice production personnel.	110	4.31	.62
5. To be able to respond to inquiries on rice production.	110	4.39	.62

<sup>a</sup>Scale: 1=strongly disagree; 2=disagree; 3=uncertain; 4=agree; and 5=strongly agree

Table H-9: Survey Participants' Responses on the ENTERTAINMENT Gratification of OPAPA

Statements	N	M <sup>a</sup>	SD
1. To be entertained.	110	4.09	.81
2. To feel good.	110	4.05	.90
3. To have fun.	110	3.91	.94
4. To find excitement.	110	3.95	.96
<b>5. To be inspired with real life stories on rice production.</b>	<b>110</b>	<b>4.36</b>	<b>.70</b>

<sup>a</sup>Scale: 1=strongly disagree; 2=disagree; 3=uncertain; 4=agree; and 5=strongly agree

Table H-10: Survey Participants' Responses on the ACQUISITION of NEW KNOWLEDGE Gratification of OPAPA

Statements	N	M <sup>a</sup>	SD
1. To get information on new rice technologies.	110	4.65	.52
<b>2. To find helpful rice production information.</b>	<b>110</b>	<b>4.66</b>	<b>.52</b>
3. To learn how to do rice production related things.	110	4.61	.54
4. To access information specific to my needs as rice farmer.	110	4.59	.60
5. To know more about every phase of rice production.	110	4.60	.53

<sup>a</sup>Scale: 1=strongly disagree; 2=disagree; 3=uncertain; 4=agree; and 5=strongly agree

Table H-11: Survey Participants' Responses on the SURVEILLANCE Gratification of OPAPA

Statements	N	M <sup>a</sup>	SD
1. To keep up with what is going on in rice production.	110	4.47	.60
<b>2. To get information I can trust.</b>	<b>110</b>	<b>4.49</b>	<b>.73</b>
3. To get rice news that is not available elsewhere.	110	4.42	.66
<b>4. To get information on rice production events.</b>	<b>110</b>	<b>4.49</b>	<b>.60</b>
5. To be informed on rice-based production.	110	4.47	.63

<sup>a</sup>Scale: 1=strongly disagree; 2=disagree; 3=uncertain; 4=agree; and 5=strongly agree

Table H-12: Survey Participants' Responses on the PEER PRESSURE Gratification of OPAPA

Statements	N	M <sup>a</sup>	SD
1. Because everyone else is using it.	110	3.55	.90
<b>2. To feel knowledgeable.</b>	<b>110</b>	<b>4.01</b>	<b>.88</b>
3. To feel important.	110	3.76	1.02
4. To gain status.	110	3.87	1.02
5. To be above others.	110	3.67	1.07

<sup>a</sup>Scale: 1=strongly disagree; 2=disagree; 3=uncertain; 4=agree; and 5=strongly agree

Table H-13: Survey Participants' Responses on the FUTURE PLANS Gratification of OPAPA

Statements	N	M <sup>a</sup>	SD
<b>1. To keep learning.</b>	<b>110</b>	<b>4.59</b>	<b>.56</b>
2. To stay up to date with rice information.	110	4.55	.58
3. To develop new ideas on rice production.	110	4.54	.55
4. To stay up to date with my career.	110	4.42	.63
5. To develop new interests.	110	4.47	.63

<sup>a</sup>Scale: 1=strongly disagree; 2=disagree; 3=uncertain; 4=agree; and 5=strongly agree

Table H-14: Survey Participants' Responses on the FAME Gratification of OPAPA

Statements	N	M <sup>a</sup>	SD
1. To be ahead of others in rice information.	110	4.05	.94
2. So that others will look up to me for rice information.	110	3.92	1.02
3. To let people know that I am well-informed.	110	3.87	1.01
4. To be considered as a credible information source.	110	4.13	.84
<b>5. To be able to help others with rice production concerns.</b>	<b>110</b>	<b>4.28</b>	<b>.83</b>

<sup>a</sup>Scale: 1=strongly disagree; 2=disagree; 3=uncertain; 4=agree; and 5=strongly agree

Table H-15: Survey Participants' Responses on ACCESS to OPAPA

Statements	N	M <sup>a</sup>	SD
1. Whenever I want it.	110	3.84	.99
2. From academic institutions.	110	3.64	.97
3. From farmers' learning centers.	110	3.93	.91
4. Through farmer organizations/cooperatives.	110	3.89	.93
<b>5. Through PhilRice office/ rice-related institutions.</b>	<b>110</b>	<b>4.41</b>	<b>.62</b>
6. Through chemical companies.	110	2.98	.92
7. Through seed dealers/ seed growers.	110	3.36	1.02
8. Through fertilizer dealers.	110	3.21	.98
<b>9. From LGU Agriculture office.</b>	<b>110</b>	<b>4.25</b>	<b>.74</b>
<b>10. From FITS center.</b>	<b>110</b>	<b>3.97</b>	<b>.99</b>
11. From co-farmers.	110	3.77	1.03
12. Through cellular phone.	110	3.90	1.02

<sup>a</sup>Scale: 1=strongly disagree; 2=disagree; 3=uncertain; 4=agree; and 5=strongly agree

Table H-16: Survey Participants' Responses on PERCEIVED CHARACTERISTICS of OPAPA

Statements	N	M <sup>a</sup>	SD
1. Learning to use OPAPA web-based services is easy for me.	110	3.91	.86
2. The information on OPAPA web-based services is flexible to my farm needs.	110	4.19	.68
<b>3. I like how the information is presented in OPAPA website.</b>	<b>110</b>	<b>4.24</b>	<b>.65</b>
4. I find it hard to understand the language used in OPAPA website.	110	2.59	.91
5. The way the information is written in OPAPA is clear to me.	110	4.15	.63
6. Information included in OPAPA website flows from page to page.	110	4.15	.65
<b>7. OPAPA website is attractive.</b>	<b>110</b>	<b>4.23</b>	<b>.66</b>
<b>8. OPAPA website is presented in a familiar format for easy understanding.</b>	<b>110</b>	<b>4.21</b>	<b>.58</b>
9. OPAPA website is easy to navigate.	110	4.04	.72
<b>10. OPAPA website is visually appealing.</b>	<b>110</b>	<b>4.21</b>	<b>.68</b>
11. The ICT Training is easy to understand.	110	4.13	.69
12. The farmer's text center is easy to access.	110	4.09	1.02

<sup>a</sup>Scale: 1=strongly disagree; 2=disagree; 3=uncertain; 4=agree; and 5=strongly agree

Table H-17: Survey Participants' Responses on ATTITUDES TOWARD THE TASK REQUIREMENTS of OPAPA

Statements	N	M <sup>a</sup>	SD
<b>1. The information in OPAPA is easy to follow.</b>	<b>110</b>	<b>4.25</b>	<b>.62</b>
2. The only thing for me to do when I access OPAPA is learning how to use the Internet.	110	3.27	1.00
3. I need to have access to the Internet before I get the information.	110	3.60	.93
4. I know how to use computers.	110	3.61	.97
5. I am used to accessing the Internet.	110	3.43	1.00
6. I am used to using a cellular phone.	110	4.07	.96

<sup>a</sup>Scale: 1=strongly disagree; 2=disagree; 3=uncertain; 4=agree; and 5=strongly agree

Table H-18: Survey Participants' Responses on CONTENT of OPAPA

Statements	N	M <sup>a</sup>	SD
1. The information included in OPAPA website is relevant.	110	4.37	.59
2. The pictures clearly illustrate the topic being presented.	110	4.30	.57
3. The information presented is understandable.	110	4.27	.60
4. OPAPA web-based services provide essential details on rice production.	110	4.41	.58
<b>5. OPAPA web-based services provide important updates on rice production.</b>	<b>110</b>	<b>4.43</b>	<b>.55</b>
6. OPAPA's website information is logically organized.	110	4.35	.63

<sup>a</sup>Scale: 1=strongly disagree; 2=disagree; 3=uncertain; 4=agree; and 5=strongly agree

Table H-19: Survey Participants' Responses on RELIANCE on OPAPA

Statements	N	M <sup>a</sup>	SD
1. Farmer's Call/Text Center	110	3.11	1.77
2. Rice Doctor	110	2.54	1.71
3. E-technobulletins	110	2.03	1.48
4. Radio+Internet+SMS Messaging	110	2.25	1.59
5. Rice Cyber Clinic	110	1.65	1.27
6. e-Commerce	110	1.67	1.29
7. Rice Knowledge Bank	110	2.94	1.66
8. e-Learning Modules	110	1.75	1.36
9. Mobile Internet Bus	110	1.53	1.17
10. Access Provision	110	1.44	1.06
11. Fact Sheets/Technotips	110	1.75	1.37
12. Pinoy Farmers' Internet	110	2.72	1.68

<sup>a</sup>Scale:1=not at all; 2=some extent; 3=moderate extent; 4=great extent; and 5=very great extent

Table H-20: Participants Responses on READABILITY of OPAPA

Questions	N	Responses			
		Yes	%	No	%
1. Is the text readable?	110	110	99.1	0	0
2. Are the words simple?	110	108	98.2	2	1.8
3. Are the sentences short?	110	106	96.4	4	3.6
4. Are the sentences easy to understand?	110	107	97.3	3	2.7
5. Are OPAPA web-based services free of grammatical errors?	110	101	91.8	9	8.2
6. Are technical jargons/terms explained?	110	106	96.4	4	

## Appendix I

### Additional Tables for Sociodemographics

Table I-1: Regional Profile of Respondents

Region	Frequency	%
<b>1</b>	<b>109</b>	<b>80.7</b>
2	18	13.3
CAR	8	5.9
Total	135	100

Table I-2: Provincial Profile of Respondents

Province	Frequency	%
Abra	7	5.2
Apayao	3	2.2
Cagayan	16	11.9
<b>Ilocos Norte</b>	<b>77</b>	<b>57.0</b>
Ilocos Sur	20	14.8
La Union	12	8.9
Total	135	100

Table I-3: Last Time One Needed an Information

Time	Frequency	%
Today	15	11.4
Yesterday	4	3.0
This Week	12	9.1
Last Week	2	1.5
This Month	8	6.1
Last Month	15	11.4
<b>Last Cropping Season</b>	<b>72</b>	<b>54.5</b>
Cannot Remember	4	3.0
Total	132	100

Table I-4: Awareness of Internet Cafes and Willingness to Access OPAPA in Net Cafes

Respondent Groups	Awareness of Internet Cafes (n=132)		Awareness of Internet Cafes (n=132)	
	N	%	N	%
Farmers (n=31)	30	96.8	31	100
Extension	27	79.4	32	91.4
Agents (n=36)				
Brgy. Officials (n=33)	25	75.8	32	97.0
MAFC (n=35)	29	82.9	35	100
Total	111	83.5	130	97.0



Table I-5: Age Categories for Respondent Groups

Age Group	Respondent Groups								All (N=125)	
	Farmers (N=28)		Extension Agents (N=33)		Barangay Officials (N=29)		MAFC Chairs (N=35)		Freq	%
	Freq	%	Freq	%	Freq	%	Freq	%		
21-30	0	0	7	21.2	2	6.9	2	5.7	11	8.8
31-40	5	17.9	8	24.2	4	13.8	3	8.6	20	16.0
41-50	7	25.0	7	21.2	8	27.6	9	25.7	31	24.8
51-60	<b>10</b>	<b>35.7</b>	8	24.2	<b>12</b>	<b>41.4</b>	<b>12</b>	<b>34.3</b>	<b>42</b>	<b>33.6</b>
61-70	4	14.3	3	9.1	3	10.3	8	22.9	18	14.4
71-80	2	7.1	0	0	0	0	1	2.9	3	2.4

Table I-6: Number of Children Living with the Respondents with Computer Background

Number	Respondent Groups								All (N=135)	
	Farmers (N=31)		Extension Agents (N=36)		Barangay Officials (N=33)		MAFC Chairs (N=35)		Freq	%
	Freq	%	Freq	%	Freq	%	Freq	%		
0	6	19.4	7	19.4	7	21.2	9	25.7	29	21.5
1	10	32.3	<b>14</b>	<b>38.9</b>	6	18.2	7	20.0	37	27.4
2	<b>11</b>	<b>35.5</b>	10	27.8	<b>9</b>	<b>27.3</b>	<b>13</b>	<b>37.1</b>	<b>43</b>	<b>31.9</b>
3	2	6.5	4	11.1	4	12.1	2	5.7	12	8.9
4	2	6.5	1	2.8	5	15.2	2	5.7	10	7.4
5	0	0	0	0	2	6.1	2	5.7	4	3.0