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# Preferred channels of issues-related information across the first two stages of innovation adoption: Case of the Kent County Michigan State University Extension clientele

Al-Howshabi, Mansour Ahmed, Ph.D.

Michigan State University, 1993



### PREFERRED CHANNELS OF ISSUES-RELATED INFORMATION ACROSS THE FIRST TWO STAGES OF INNOVATION ADOPTION: CASE OF THE KENT COUNTY MICHIGAN STATE UNIVERSITY EXTENSION CLIENTELE

By

Mansour Al-Howshabi

### A DISSERTATION

Submitted to Michigan State University in partial fulfillment of the requirements for the degree of

### DOCTOR OF PHILOSOPHY

Department of Agricultural and Extension Education

#### ABSTRACT

### PREFERRED CHANNELS OF ISSUES-RELATED INFORMATION ACROSS THE FIRST TWO STAGES OF INNOVATION ADOPTION: CASE OF THE KENT COUNTY MICHIGAN STATE UNIVERSITY EXTENSION CLIENTELE

By

Mansour Al-Howshabi

This study was conducted to identify and describe which channels of information the Kent County Michigan State University Extension clientele considered useful and preferred in selected critical issues areas during the first two stages of innovation adoption. A survey method, using a questionnaire, collected the data for this study and was distributed to a representative sample of 370 clientele in Kent County. Statistical techniques were used for data analysis. Frequencies/descriptive statistics were calculated to analyze, present, and summarize the general findings and data. T-test, ANOVA, and Tukey tests were calculated to determine the usefulness and preference of channels of information in the first two stages of adoption based on the demographic data about the selected issues. Correlations calculated to were also determine the relationships between the available, useful, and preferred mass media and interpersonal channels of information at

knowledge and persuasion stages of adoption. Alpha was set a priori at .05.

The results of the data analysis indicated that:

1. Income was shown as significant in evaluating the availability, usefulness, and preference of information channels. Mass media and interpersonal channels of information were ranked significantly higher by the respondents who earned \$50,000 or more.

2. Respondents with a college/graduate degree ranked the available mass media and interpersonal channels of information higher than did those with less education.

3. Mass media information channels also were ranked significantly higher as available, useful, and preferred channels of information by different age groups for different issues at both stages of adoption.

4. Television, newspapers, newsmagazine, and radio were the most useful and preferred channels of information for the diffusion of new information and technology at the first two stages of adoption of innovation.

5. Most interpersonal channels of information were moderately useful and preferred at the first two stages of adoption for the four selected critical issues.

6. Salespersons were the lowest ranked channels of information at both stages of adoption for all four issues.

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### DEDICATION

This work is dedicated with my love to my Mother, Wife, and Children for their care, patience, and sufferance during my educational journey.

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vii

# TABLE OF CONTENTS

													Page
LIST OF TA	BLES .	• • •		• •	•	••	•	• •	•	•	•	•	. x
LIST OF FI	GURES .	•••	•••	• •	•	••	•	•	•	•	•	•	xiv
CHAPTER													
I. INTR	ODUCTION	• •		• •	•	••	•	• •	•	•	•	•	. 1
st	atement o	of the	Prob	lem	•	•••	•	••	•	•	•	•	. 6
Pu	rpose and	i Obje	ctive	s.	•	• •	•	• •	٠	•	٠	•	. 9
Im	portance	of th	e Stu	dy.	•	• •	•	• •	•	•	٠	•	10
Re	search Hy	pothe	ses .	•••	٠	• •	•	• •	•	•	٠	•	11
Ll	mitation	of th	e Stu	dy .	•	••	•	• •	•	•	٠	•	12
De	finition	of Te	rms	• •	•	• •	•	• •	•	٠	٠	•	13
II. REVI	EW OF THI	E LITE	RATUR	Е.	•	••	•	• •	•	•	•	•	16
Co	operative	e Exte	nsion	Ser	vice	е.							17
	Historica	al Per	spect	ive	of (	Coor	bera	ati	ve	•	•	•	_ /
	Extens	lon Se	rvice	• •		1				•		•	17
	Agricult	ire an	d Mari	keti	na 1	Prod	rar	ns					20
	Natural I	Resour	ces a	nd P	ubl	ic 1	201-	l cv					22
	Extension	Home	Econ	omic	s.					•		Ţ	23
	4-H Youth	) Prog	rams			•••	• •	••	•	•	•	•	24
мі	chigan St	ate U	niver	sitv	Ext	tens	sion	n in	n	•	•	•	61
	Kent Cour	ntv.								_	_		25
Ts	sues Proc	rammi	ng in	Ext	ens	ion	•		•	•	•	•	26
	Issues Ma	nagem	ent .				_			•			28
	Selection	n of T		and	Pro	 hle	- ms		•	•			32
	Shifting	in Fv	tonci	on D	ara		ne	•	•	•	•	•	34
ni	ffusion a	Ad hit	option	on r n of	Tni	ary:	us a a+i⁄	ne.	•	•	•	•	20
DI	Adaption a	of Tr	oputo	iona	D.~~			115					55
	Models of	. Jyour UI IU	noval.	TOUP	PL	JCe	5582	•	•	•	•	•	40
	moders of	. Auop	cion	•••	Dad	•••				•	•	•	4/
	ractors 1	.nr rue	neing	cne	Kd	Le (	JT 4	100]	pc.	lor	1		40
	or runc	vatio	ns .	• •	•	• •	• •	•	•	•	•	٠	49
	Adopter (	atego	ries	• •	•	• •	• •	•	•	٠	٠	٠	52

# CHAPTER

•

	Channels of Information	54 56 58
	Different Channels are Important at	
	Different Stages of Adoption Process	59
	Summary	64
III.	METHODS AND PROCEDURES	67
	Selection of Kent County	67
	Population	70
	Sampling	71
	Development of Instrument	72
	Validity and Reliability	73
	Data Collection	75
	Data Analysis Procedures	77
IV.	FINDINGS	78
	Reliability Tests	78
	Demographic Information	81
	Available Channels of Information	86
	Useful Channels of Information for Knowledge	
	and Persuasion Stages of Adoption	88
	Useful Channels of Information by Issues at	
	Knowledge Stage of Adoption	89
	Food Safety and Quality	89
	Water Quality	91
	Nouth and Warilian at Dick	01
	IOULIN and Tamilles at KISK	21
	Rural and Urban Interlace	94
	at the Persuasion Stage of Adoption	96
	Food Safety and Quality	96
	Wator Quality	96
	Water Quartey	90
	Youth and Families at KISK	101
	Rural and Urban Interface	TOT
	Preferred Channels of Information for the	
	Knowledge and Persuasion Stages of	
	Adoption	101
	Preferred Channels of Information About	
	Four Selected Critical Issues at the	
	Knowledge Stage of Adoption	103
	Preferred Channels of Information About the	
	Four Selected Critical Issues at the	
	Persuasion Stage of Adoption	105

# Chapter

	Stat	isti	cal	Ana	ly	sis	5	•	•	•	•	•	•	•	•	•	•	•	•	107
	T-t	cest	•	• •	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	107
	Ana	ilys	is c	of V	/ar:	iar	nce	3	•	•	•	•	•	•	•	•	•	•	•	108
	Usefi	ll a	nd I	?ref	ier	red	3 C	2ha	nr	le]	Ls	of								
	Inf	form	atio	on	•	•	•	•	•	•	•	•	•	•		•	•	•		113
	Coi	rel	atio	ons	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	119
	Othei	r Im	port	cant	: I:	รรเ	les	5 N	ſer	nti	lor	led	lk	ŊУ	MS	SUE	2			
	Cli	ient	ele	•	•	•	•	•	•		•	•	•	•	•		•		•	123
	Other	r In	form	nati	on	Cł	nan	ne	21s	5 N	ler.	nti	.or	ieć	1 1	y				
	MSU	JE C	lier	nte]	e			•		•		•	•	•	•			•	•	125
v.	DISCUSS	SION	, co	DNCI	US	101	vs,	F	ANE	)										
	RECOMM	ENDA	TION	IS			. '												-	126
																•	•			
	Intro	oduc	tior	<b>л</b> .	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	126
	Discu	issi	on		•	•	•	•	•	•	•	•	•	•	•	•		•	•	127
	Democ	rap	hic	Inf	ori	nat	cic	n			•	•		•	•	•	•	•	•	127
	Usefi	il C	hanr	nels	; o:	6 ]	[nf	or	ma	ati	lor	1	•	•	•	•				129
	Prefe	erre	d Ch	lanr	nels	5 0	of	Ir	nfc	orn	nat	ic	'n							129
	Conc	usi	ons				•		•	•	•								-	130
	Recon	men	dati	ions	f	or.	Fu	rt	he	r	Re	se	ar	-cł	۰ ۱		•	·		137
					-										•	•	•	•	•	107
ADDENI	TCES																			138
731 I DIVI		•	•••	•••	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	100
Δ.	CORRESP	מאטי	ENCE	г.									_							139
н. В	OUFSTIC	NNA	TRE	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	111
<b>D</b> .	YOTOIIC			•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	744
BIBLIC	OGRAPHY	•			•				•		-					•				162
		-		- •	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

•

## LIST OF TABLES

Table	Pa	age
1.	Rank Order of Information Channels by Stages in the Adoption Process	61
2.	Selected Characteristics of the Population in the Kent County Compared with the State of Michigan Population	69
3.	Population and Sampling for Each Program Area	72
4.	Results of Reliability Tests for the Instrument	79
5.	Results of Reliability Tests for All Survey Respondents	80
6.	Gender of Respondents	83
7.	Race of Respondents	83
8.	The Level of Education of the Respondents	84
9.	The Distribution of the Respondents' Incomes .	85
10.	The Distribution of Respondents' Living Areas	85
11.	The Distribution of the Respondents' Age	86
12.	Available Channels of Information by Rank Order From Most Available to Least Available as Identified by the Respondents	87
13.	Means and Standard Deviations by Rank Order Regarding the Usefulness of the Channels of Information About Food Safety and Quality at the Knowledge Stage of Adoption	90
14.	Means and Standard Deviations by Rank Order Regarding the Usefulness of the Channels of Information About Water Quality at the Knowledge Stage of Adoption	92

# Table

15.	Means and Standard Deviations by Rank Order Regarding the Usefulness of the Channels of Information About Youth and Families at Risk at the Knowledge Stage of Adoption	93
16.	Means and Standard Deviations by Rank Order Regarding the Usefulness of the Channels of Information About Rural and Urban Interface at the Knowledge Stage of Adoption	95
17.	Means and Standard Deviations by Rank Order Regarding the Usefulness of the Channels of Information About Food Safety and Quality at the Persuasion Stage of Adoption	97
18.	Means and Standard Deviations by Rank Order Regarding the Usefulness of the Channels of Information About Water Quality at the Persuasion Stage of Adoption	98
19.	Means and Standard Deviations by Rank Order Regarding the Usefulness of the Channels of Information About Youth and Families at Risk at the Persuasion Stage of Adoption	100
20.	Means and Standard Deviations by Rank Order Regarding the Usefulness of the Channels of Information About Rural and Urban Interface at the Persuasion Stage of Adoption	102
21.	Means and Standard Deviations by Rank Order Regarding Channel Preferences for Food Safety and Quality, Water Quality, Youth and Families at Risk and Rural and Urban Interface at the Knowledge Stage of Adoption	104
22.	Means and Standard Deviations by Rank Order Regarding Respondents' Channel Preferences for Food Safety and Quality, Water Quality, Youth and Families at Risk and Rural and Urban Interface at the Persuasion Stage of Adoption	106
23.	Tukey Test for Income Levels and Available Interpersonal Channels of Information	109

Table

•

24.	Tukey Test for Levels of Education and Available Mass Media Channels of Information .	110
25.	Tukey Test for Level of Education and Available Interpersonal Channels of Information	111
26.	Tukey Test for Age Groups and Available Mass Media Channels of Information	112
27.	Tukey Test for Age Groups and Available Interpersonal Channels of Information	113
28.	Tukey Test for Income Levels and Mass Media Channels Useful for Water Quality Information at the Knowledge Stage	114
29.	Tukey Test for Age Groups and Interpersonal Channels Useful for Food Safety and Quality Information at the Knowledge Stage	116
30.	Tukey Test for Age Groups and Mass Media Channels Useful for Water Quality Information at the Knowledge Stage	117
31.	Tukey Test for Age Groups and Mass Media Channels Useful for Youth and Families at Risk Information at the Knowledge Stage	118
32.	Tukey Test for Age Groups and Mass Media Channels Useful for Youth and Families at Risk Information at the Persuasion Stage	118
33.	The Relationship Between Available and Useful Mass Media Information Channels at the Knowledge Stage of Adoption	120
34.	The Relationship Between Available and Useful Mass Media Information Channels at the Persuasion Stage of Adoption	120
35.	The Relationship Between Available and Useful Interpersonal Information Channels at the Knowledge Stage of Adoption	121

Page

Та	b	1	e
----	---	---	---

•

۹.

36.	The Relationship Between Available and Useful Interpersonal Information Channels at the Persuasion Stage of Adoption
37.	The Relationship Between Available and Preferred Mass Media and Interpersonal Information Channels at the Knowledge and Persuasion Stages of Adoption

# LIST OF FIGURES

Figure							Ра				Page	
1.	Survey	Respondents	by	Program	Area	•	•	•	•	•	•	82

# بسم الله الرحمن الرحيم

In The Name Of Allah , Most Grocios, Most Merciful

#### CHAPTER I

### INTRODUCTION

Many channels of information are available to the people. These channels provide information about many issues and assist people in solving problems effectively. Using information is vital during this information age. The real challenge of the present time is not producing information or storing it, but rather, getting people to information in medicine, nutrition, use education, agriculture, and other fields of knowledge. The technological advances have far outstripped the willingness of human beings to apply new knowledge. Computers and organizations store information, but people use information. The Cooperative Extension Service has a great deal to offer in pointing the way to increasing the use of knowledge in the future through its people-orientation (Patton, 1985, p. 5).

The mission of the Michigan State University Extension (MSUE) is to translate or disseminate the latest research findings from the Land-Grant system to help people solve problems. The establishment of extension programming priorities arises at the county level as agents interact with their various clientele. The MSUE must use the most economical and accessible strategies or methods to reach clientele with information that will help them solve problems or explore various critical issues. At the national level, such critical issues include: food safety and quality, international marketing, revitalizing rural America, sustainable agriculture, waste management, water quality, and youth at risk (The United States Department of Agriculture, 1990).

To disseminate information and provide educational/ learning experience about these issues, county extension directors and agents are using a multitude of communication channels. Common channels include radio, newspapers, newsletters, direct mailings and interpersonal communication. Other channels of information, such as tapes, magazines, television, video computers, and satellite dishes, are also used (Vergot, 1990).

Information channels are categorized into mass media media and interpersonal. Under mass channels of information one includes radio, television, satellites, films, posters, pamphlets/brochures, newsletters, slide shows, computer and all the print media channels. Interpersonal channels of information include face-to-face communication with extra-systemic sources such as government sponsored agencies, scientists, commercial

agents, exhibitions, tours, and visits and demonstrations. Interpersonal channels also include intra-systemic sources such as relatives, friends, neighbors, local leaders, and others who belong to the social system (Linganneni, 1981).

In the present era, people have many channels of information which influence the social, cultural, and economic aspects of their daily lives. Michigan State University Extension use communication techniques to reach more clients more frequently and to give extension efforts more impact. Most important is the ability to organize information and present it so that clients and messages come together in a way that best helps the client reach a desired knowledge level and have the skills to make thoughtful decisions or practice desired behavior (Burk, 1984, p. 106). At the different stages of adoption of useful information, MSUE clientele use different channels of communication. Channels of communication and adoption of innovation are interrelated.

Adoption of an innovation is dependent on the available and preferred information channels. Introduction of an innovation inevitably leads to social change, even when it fails to produce the intended consequences. These changes may find expression in the attitude and outlooks of the clientele or in their behavior or in their value systems, or all of these may be affected. While some

innovations may be easily and readily accepted, others meet with resistance or indifference. The successful adoption of innovation depends partly upon the nature of the innovation itself and partly on the social and cultural character of the people among whom it is introduced. Consequently, different social systems may react differently to the same innovations (Rejagopalan and Singh, 1971).

is a mental process through which Adoption an individual passes from first hearing about an innovation to its final acceptance and use. The adoption process involves five stages: (1) Knowledge, (2) Persuasion, (3) Decision, (4) Implementation, and (5) Confirmation. Obviously, not all people go through all of the stages in precisely the same order for all of the decisions they make. They may proceed through only some of the stages, or they may decide at any point that further consideration of the new idea or information is not warranted. Also, at any point in this process, an idea may be rejected. Even after adoption of an idea, the process may be repeated when an alternative is presented (Lionberger, 1982; Rogers, 1983).

Adoption of new technologies in American societies is part of the success story of the Michigan State University Extension. Now, because of the current emphasis on critical issues programming, there is a need to know the

preference and use of different channels of information by clientele, especially as it relates to those critical issues. This research will help MSUE program planners public awareness and understanding of promote the strategies and public policies that the state and the county (local) need to solve problems. Furthermore, the findings of this study will help MSUE to develop and deliver appropriate educational programs pertaining to those issues and problems. Specifically, the findings will help the MSUE in Kent County increase clientele awareness and knowledge, of information pertaining to critical local issues. At the same time, it will also help the clientele better appreciate and understand the shifting of the extension system from disciplinary programming to issues programming and to understand their (the clientele) roles and responsibilities in regard to those issues.

This study investigated the use of and preference for educational information channels relative to selected critical issues during the first two stages of innovation adoption in Kent County, Michigan. The Kent MSUE used to be organized into four major program areas: Agricultural Marketing, Home Economics, 4-H Youth Programs, and Natural Resources and Public Policy.

#### Statement of the Problem

is a public-funded, nonformal, The MSUE system educational system that links the education and research resources and activities of the U.S. Department of Agriculture (USDA), 74 Land-Grant Universities, and 3,150 county administrative units. As its mission. the Cooperative Extension System helps people improve their lives through an educational process that uses scientific knowledge focused on issues and needs. It is a dynamic, ever-changing organization pledged to meeting the country's needs for research, knowledge, and educational programs that will enable people to make practical decisions that can improve their lives (Strategic Directions of CES-USDA, 1990, p. 1).

At the national level, extension programming has been moving from a specific program area orientation to a cross disciplinary, issues-oriented approach. This shift in paradigms in extension reflects a realignment with extension roots and traditions. It is a shift in emphasis from extension's educational methods or strategies back to the outcomes of extension efforts: the improvement of peoples' lives by helping people address and solve society's most pressing problems and issues. It is a refocusing of extension resources on people and on the grass-roots tradition of extension. It is a reaffirmation

of the early history of extension as a public service arm of the entire Land Grant university and a recognition that the scope of the Land Grant university is much broader than it was then. Finally, it is a remembering that the role of the extension worker is both to respond to the public concern and to be an agent of social change (Dalgaard et al., 1988).

For a number of years, until 1992, the Cooperative Extension Service used to be organized into four program areas, i.e., Agricultural Marketing, Natural Resources and Public Policy, Extension Home Economics and 4-H Youth Each of these four program areas traditionally Programs. has its own unique clientele, with some cross over between There are many channels for delivering program areas. information to the clientele in those program areas. Several communication scholars have found that the mass media and interpersonal communication are the most widely used channels in the delivery system. A purpose of the MSUE information delivery system is to convince clientele or targeted population to adopt new ideas/innovations and increase their productivity, income, and knowledge.

However, according to Matlon et al. (1984, pp. 17-18), much research based on new information and/or technology is left idle in research centers because of poor communication or linkages between researchers, extension personnel, and

clientele. Whether the Cooperative Extension Service or the research centers are to bear the blame is not clear. However, one thing which is clearly impeding the flow of information between researchers and Extension personnel on the one hand, and clientele on the other, is lack of identification of effective channels to use in the dissemination of useful information.

A common belief among Extension personnel is that the MSUE is the leading information source frequently consulted and preferred by clientele groups looking for assistance to improve their quality of life and solving their critical As Extension programs shift from disciplinary issues. programming to issues programming, little is yet known about the end results of issues programming in MSUE, especially for risk-benefit issues (Loftis and Kendall, There is a need to create or raise awareness among 1991). clientele about such complex issues as the risk of pesticides in food and for providing scientific information needed for making decisions without bias. Decision making includes rational assessment of the potential risk, determining "acceptable risk," and taking responsible action to minimize or manage that risk for the well-being of those affected. Clientele make decisions to adopt innovations, despite risk, to improve their health, nutrition, social, and economic conditions.

Such adoption of innovation is a complicated process that comprises five stages: (1) Knowledge, (2) Persuasion, (3) Decision, (4) Implementation, and (5) Confirmation (Rogers, 1986). It is important that suitable channels of information be identified and employed effectively at the various stages.

A variety of channels including field trips, guest speakers, group discussions, workshops, demonstrations, audio-visual materials, printed materials, and interactive telecommunications have been advocated by MSUE practitioners for information dissemination. There is need to identify and describe the channels of information that are considered beneficial or useful by clientele across the four MSUE program areas, and to determine how those clientele prefer to get or to receive their educational information about selected critical issues during the first two stages of innovation adoption. Considering all of the above, the researcher investigated the preferred sources of information needed by Extension clientele to pass through the first two stages of adoption in addressing critical issues.

#### <u>Purpose and Objectives</u>

The major purposes of this study were: (1) to identify and describe which channels of information in selected critical issues areas the Kent County MSUE

clientele considered important and useful, and (2) how they preferred to get information about the selected critical issues areas during each of the first two stages of innovation adoption.

To accomplish the major purposes of the study, the researcher proposed the following objectives:

<u>Objective 1</u>: To identify among Kent County MSUE clientele the useful mass media and interpersonal channels of information about selected critical issues during the first two stages of innovation adoption.

Objective 2: To determine how the clientele in Kent County preferred to receive information about the selected critical issues during the first two stages of innovation adoption.

<u>Objective 3</u>: To determine what affect selected demographic variables had on the preference for and/or use of selected information channels for issues information.

#### Importance of the Study

The Michigan State University Extension (MSUE) is using different communication strategies for dissemination of new information among its clientele. The purpose of using different communication channels is to increase clientele productivity production, income, awareness, knowledge, and skills. Additionally, it assists clientele in being exposed to new ideas and opportunities for

personal growth. Although several studies have attempted to determine how clientele prefer to receive information from certain channels of communication, no study has been done examine the usefulness to and preference of information channels during the first two stages of innovation adoption across selected critical CES issues. This study identified and determined the useful channels of information the clientele preferred to use during the first two stages of innovation adoption.

By determining which were the useful channels of information and which channels clientele preferred for their information, the findings of this study could help make the MSUE information delivery system more effective and efficient. The findings should also help MSUE program planners identify the strengths and weaknesses of disseminating useful information to address clientele issue areas while the clientele pass through the various stages of adoption of innovation.

### Research Hypotheses

- <u>Hypothesis 1</u>: The Kent County MSUE clientele prefer to receive their information about selected critical issues from the mass media channels of information at knowledge stage of adoption.
- <u>Hypothesis 2</u>: The Kent County MSUE clientele prefer to receive their information about selected critical issues from the localite interpersonal channels of information at the persuasion stage of adoption.

### Limitations of the Study

To make the study meaningful, from a research point of view, the following limitations were considered:

1. Although the research population was limited to Kent County, Michigan, MSUE clientele, the respondents did not necessarily represent the Kent County population demographically.

2. Of the various critical issues of MSUE program planning, four were considered: Food Safety and Quality, Water Quality, Youth and Families at Risk, and Rural and Urban Interface.

3. Since channels of information were both many and varied, 18 were examined in this study.

4. To accomplish the objectives listed above, the researcher depended on information furnished by the study participants.

5. The findings and discussion generated by the study's data were exclusive to the identified population at a specific point in time.

6. The study was limited to the first two stages of adoption (knowledge and persuasion) and did not focus on new ideas or technology. The other three stages of Rogers' model (Decision, Implementation, and Confirmation) were not applicable to this research.

#### Definition of Terms

<u>Cooperative Extension Service</u>: An educational service agency or organization created by the passage of the 1914 Smith-Lever Act. The primary purpose of the Act was "to aid in diffusing among the people of the United States useful and practical information on subjects relating to agriculture and home economics and to encourage the application of the same." Agricultural Extension work was to

giving of consist of the instruction and practical demonstration in agriculture and home economics to persons not attending or resident in said colleges in the several communities, and imparting to such persons information on said subjects through field demonstrations, publications, and otherwise in such manner as may be mutually agreed upon by the Secretary of Agriculture and the State Agricultural College (Rasmussen, 1989).

The Act authorized educational programs in agriculture marketing, home economics, 4-H youth programs and natural resources, public policy and related subjects to be funded by federal, state, and local government and administered through the same three partnership, hence the term cooperative. The aim of the organization is to disseminate practical information from the land-grant university or college, state agricultural experiment stations and the United states Department of Agriculture to the people of the United States in their communities. Extension: Extension means extending the educational resources of the land-grant university beyond the campus. It describes a special type of problem solving, actionoriented education that instructs, demonstrates, and motivates, but does not regulate or provide noneducational programs (CES MSU Publication, 1990).

<u>Extension Clientele</u>: Residents of a county who avail themselves of the services of the Cooperative Extension Service.

<u>Diffusion</u>: The process by which an innovation is communicated through certain channels over time among the members of a social system, to be accepted or rejected by those members (Rogers, 1983).

<u>An Innovation</u>: An idea, practice, or object that is perceived to be new by an individual or other unit of adoption (Rogers, 1983).

<u>Adoption</u>: The voluntary acceptance of a new idea; to accept the view or policy of another. Or it is the act of accepting an innovation.

<u>Dissemination</u>: The process of communicating new information, ideas, beliefs, or practices for propagation and permanence to others.

<u>Innovators</u>: People who habitually try new ideas or practices more quickly than others in a given locality.

<u>Interpersonal communication</u>: The communication that occurs on a person-to-person basis in situations in which both or all persons are physically present.

<u>Mass media</u>: Commonly used to mean the same as mass audience channels, although to be more precise, a medium would be a device or mode used in putting together messages to disseminate via the channels, e.g., impulses on tape, printing type, ink, or paper.

<u>Source of information</u>: The institution or person who provides information based on research or first-hand experience with new ideas or knowledge practices.

<u>Channels of information</u>: The methods or strategies used to deliver information to clientele, such as typed or written media or video and audio.

Issues programming: Extension's planned response to issues. Issues programming identifies human problems in their own context, that is, outside the Extension organization without prior regard for traditional Extension subject matter, audiences, and methods of program delivery. It differs from the traditional Extension approach, often termed disciplinary programming. Above all, issues programming is a different way of thinking about the origins of programs.

### CHAPTER II

#### REVIEW OF THE LITERATURE

This chapter contains a synthesis of selected research and literature that is applicable to the study. The theoretical foundation for this study emerged from the literature and research in agricultural and extension education, and in communication. In addition, information concerning previous studies was obtained by reviewing <u>Dissertation Abstract International</u>, the <u>Current Index of</u> <u>Journals in Agricultural and Extension Education</u>, and Education Resources Information Center (ERIC) documents.

The literature review is presented in the following four broad sections:

- 1. Cooperative Extension Service (CES)
- 2. Issues Programming in Extension
- 3. Diffusion and Adoption of Innovation
- 4. Channels of Information
### Cooperative Extension Service

## <u>Historical Perspective of</u> <u>Cooperative Extension</u> <u>Services</u>

The American Philosophical Society, founded in 1743, was the forerunner of the Cooperative Extension Services in the United States. Later agricultural societies, where informal learning took place, were established in Philadelphia in 1785. This movement was continued for a long time. Stalling was the first full-time agent, hired in W. C. Smith County, Texas, in 1906. The first agent in Michigan was H. G. Smith, hired in Alpena County in 1912 (Gillespie, 1989, p. 1).

In 1914, the Cooperative Extension Service was formally established by the Smith Lever Act and designed as a partnership with the U. S. Department of Agriculture and the Land-Grant Universities, which were authorized by the federal Morrill Acts of 1862 and 1890. State legislation enabled local governments or organized groups in the nation's counties to become a third legal partner in this new educational endeavor. The act stipulated that such programs be directed by the nation's Land-Grant Colleges, of which Michigan State University is a pioneer.

CES programs are supported and conducted cooperatively by a unique three-way partnership. This partnership ensures broad support, and enhances responsiveness to specialized needs while capitalizing on shared resources and expertise. The U. S. Department of Agriculture, the state (Land-Grant University) and the county (county Government) are the three partners of the CES.

Today, this educational (CES) system includes professionals in nearly all of the nation's 3,150 counties. In addition, thousands of paraprofessional staff serve in many counties, and nearly three million volunteer leaders assist in extending programs under training and direction from Cooperative Extension staff. At the national level, the federal partnership includes an Extension administrative group of about 100 professionals within the U. S. Department of Agriculture; these people direct federal fund allocation, coordinate national initiatives, provide program leadership, and facilitate linkages to the U.S.D.A. and the Congress. This unique, federal-local partnership has functioned effectively for more than seven decades (United States Department of Agriculture: Extension Service, 1986).

The partners in the Cooperative Extension system are interdependent, and each component partner performs distinctive functions essential to the operation of the total system. Cooperative Extension links the research efforts of the U.S.D.A. and the land-grant universities in order to make scientific knowledge available to all who need it. The system is characterized by two-way

communication between those who work for Extension and those who utilize it; this ensures researchers and educators of an early awareness of problems. In addition, it provides direction for research and education efforts and speeds the application of research-born information and discovery.

The Cooperative Extension Service has grown since the early years of this century and continues to change. Throughout this growth and change, its primary responsibility has remained to serve people through educational programs and activities (Michigan CES Orientation Guide, 1990).

The Michigan Cooperative Extension Service is an educational outreach arm of Michigan State University. Its job is to get practical, university-tested information into the hands of people who need it. Michigan State University Extension takes the University to the people of all 83 counties throughout the state of Michigan. Extension means extending the educational resources of MSU beyond the East Lansing campus. Service means Extension is in the business of helping people (CES Bulletin, 1991).

The Extension Service is an education program and service that extends the resources of Michigan State University to the people of Michigan. Educational programs, information sources, and volunteer outreach activities are directed toward extending the knowledge resources of Michigan State University by developing, interpreting, and transmitting knowledge based upon applied science and research. New research-based knowledge is made available to solving problems, identifying issues, and the concerns of individuals, families, businesses, industry, organizations, agencies, and communities throughout the state. Extension facilitates citizen participation in local, state, national, and international issues-contributing to individual and publications that affect the general welfare of all (Department of Agricultural and Extension Education, 1990).

Michigan State University Extension reaches more than one million people annually through direct educational contacts and many more through the media, major events, and publications. In Michigan, until 1992 there were four CES program areas: (1) agricultural and marketing programs, (2) natural resources and public policy, (3) extension home economics, and (4) 4-H youth programs (Department of Agricultural and Extension Education, 1990).

# Agriculture and Marketing Programs

This program provides educational assistance to the state's agriculture community in the application of modern technology, efficient use of energy, development of markets and use of sound business practices. Of the professional staff, 45% are engaged in this program area. CES has done considerable demonstration work in sustainable agriculture

to show growers how to reduce their use of chemicals, pesticides, and plant nutrients.

Efforts to increase fruit and vegetable production, control diseases and pests, and improve storage conditions are also the major concern of the program. Improved control for blueberries, raspberries, grapes, muck vegetables, mint, and potatoes have been developed. Also workshops, demonstrations, and short courses were offered in the forestry-related areas: Christmas tree production and marketing, use of wood as a fuel, maple syrup production, gypsy moth suppression, protection of forest lands, and improved management practices in wood products firms.

Marketing information on long-term, supply- and demand-outlooks were provided to almost 7,000 Michigan farmers. Almost 6,800 producers were provided with information to help them make good decisions about government program participation. Water quality information is being integrated into all agriculture marketing programs with significant impacts.

Computerized financial management programs were developed to help producers make production and management decisions. The PESTBANK database was developed, 5,300 people were trained as certified pesticide applicators, and 1,600 paid subscribers received newsletters. Livestock and

poultry programs were conducted to increase the competitive position of Michigan growers and producers.

### Natural Resources and Public Policy

The focus of the programs is on the wise use and conservation of land, forests, water, and wildlife; the development of state's the tourism and recreation potential; community planning, organization and development for social and economic progress; and citizen involvement NRPP has 13% of the total CES in public affairs. professional staff. Local government leaders received assistance by attending workshops and by working with local CES members specialists and staff to find alternatives to financial and public service problems. More than 500 county commissioners were trained or received direct assistance with county government issues during Helping communities identify and develop future 1990. leaders is a major focus of NRPP programs.

CES programs trained 1,000 volunteers (triple the number in 1989) to reteach information on household hazardous waste, recycling and composing. More than 220 communities implemented new or expanded recycling, composing or waste-to-energy projects as a result of CES programming. NRPP staff members worked with parks and recreation programs, bed and breakfast owners, and others involved in Michigan's tourism industry.

### Extension Home Economics

Extension Home Economics helps Michigan's families to cope with the complex demands of today's society. Managing resources, improving health and nutrition practices, and supporting the development of human potential are primarily thrusts of the program area, which encompasses 21% of the professional staff.

Basic budgeting education reached 3,110 limitedresource families. Other resource management education programs, including housing maintenance and repair, housing acquisition and pre-retirement planning-reached 8,352 families. Computer analyses of individual financial situations helped families make decisions about investments, college financial planning and home financing (CES, 1991, p. 1).

Programs were designed to teach families how to build family strengths by improving self-esteem and managing stress in the counties. Also the Family Community Leadership Project trained its second group of volunteer teams for community leadership in the political arena. More than 4,000 people participated in other leadership development programs.

County Home Economists offered expert family demographic data to communities, public agencies and private organizations concerned about families to help with

planning and policy formulation. More than 125 presentations reached 1,384 people statewide.

The Michigan Association of Extension Homemakers continues to provide a cadre of volunteers who contribute to educational outreach through teaching, community service, and assistance to Extension offices.

### 4-H Youth Programs

4-H Youth Programs are designed to help young people become self-directing, productive, and contributing members of society through learning and social experiences which help them develop their potential. The quality of experiences depends to a large extent on interactions with caring adult volunteers. Volunteers are the foundation of Michigan 4-H programs. Programs stress learning how to learn, relating to change, using knowledge, and developing self. Of Extension's professional staff, 21% work in the area (Michigan Cooperative Extension Service Orientation Guide, 1990, p. 7).

A new curriculum, SPACES, for the club members (9 to 15 years old) has been developed to help them develop coping skills, experience high technology and its applications, and recognize their roles as global citizens.

Michigan 4-H has entered partnerships with schools, juvenile justice systems, and other groups to provide

preventive solutions to problems faced by today's youths at risk.

Legislators, Ford Motor Company, and Dow Chemical professionals have formed partnerships with 4-H that offer 4-H'ers experiences in government and industry that help shape their career goals and directions. Michigan 4-H families provided home for 137 young people from other countries, and 231 Michigan 4-H'ers visited exchange home in two dozen other countries (CES, 1991, p. 2).

So far the researcher has presented the general history of CES in the U.S. and in Michigan. The following brief discussion will be limited to the Kent County CES.

# <u>Michigan State University Extension</u> <u>in Kent County</u>

The main program mission of the Kent County Extension is to help the people to help themselves through education. MSUE is a unique educational delivery system, and it has the capacity to meet the challenges of the future.

The Kent County Extension is an extension of Michigan State University which is committed to fulfilling its Land-Grand mission. Therefore, the Kent County Extension is not a different extension service in the state; rather, it is part and parcel of the total mission of a Land-Grant university. While the Kent County extension service continues its programming, it is strengthening its outreach efforts by focusing a part of its attention on issues identified by the citizens and in so doing to serving the people in a broader context.

### Issues Programming in Extension

A basic mission of Cooperative Extension is to provide unbiased, research-based information to clientele for informed decision making. Cooperative Extension professionals are comfortable with this mission in welldefined scientific disciplines. However, the world doesn't present the majority of its problems in disciplinary form. Many are presented as issues, matters of wide public concern arising out of complex human problems.

Committee The National Initiatives Coordinating (NICC), established in September, 1986, provides oversight and management for the development of eight national initiatives. As the work of the NICC progressed, the idea of programming around issues moved rapidly throughout the Although the Committee was encouraged by increasing CSE. acceptance of the national initiatives, it recognized that the diffusion of the ideas into the system was causing For example, individuals throughout the some concerns. system do not agree on what constitutes an issue or the criteria for determining priority issues for program development. The main reasons for disagreement are the

multitude of meanings for the word issues and diversity of proposed concepts to the people.

Some states which have delved deeply into issues programming and have emphasized interdisciplinary, problemoriented teams to address critical issues of public concern; and the boundaries between the existing program areas (agriculture, home economics, 4-H, natural resources and public policy) have become less rigid (Dalgaard et al., 1988).

According to Dalgaard et al. (1988):

Literature concerning issues comes largely from the fields of public policy and corporate management (Morrison et al., 1983; Morrison, 1984; Bartha, 1984; Arrington and Sawaya, 1984; Stanley, 1985). This literature generally views issues as element an of corporate public In that context, issues have these relations. key features: - They exist in the external environment, the broad dimension of the entire society; - They have their sources in complex problems (social, economic, political, technological) characterized by divergent viewpoints, shifting public perceptions, and turbulent values in an age of dizzying instability; frequently They involve conflict and controversy, requiring the mediation of disputes and contending interests.

Issues programming is a different way of thinking about the origins of programs. Locating program origins in matters of wide public concern, issues programming identifies human problems in their own context that is, outside the Extension organization-without prior regard for traditional Extension subject matter, audiences and methods of program delivery.

Extension is now in the early stages of change from disciplinary programming to issues programming. This involves fundamental change in the reason for the existence of Extension and in the way Extension's work gets done, In short, Extension is undergoing a paradigm shift.

The differences between the two paradigms are both subtle and great. Problems, disciplines, program delivery methods, audiences, and teamwork among people from the same and different disciplines are central in both paradigms. One might even argue from the perspective of the disciplinary paradigm that most of Extension's program efforts today address issues and so are issue centered programs (Dalgaard et al., 1988).

The ways in which Extension is understood as a concept and as an organization and the ways in which Extension work is conducted are fundamentally different in the two paradigms. These differences are so significant that, while the two paradigms use the same key words, for example, issues and audiences, the meanings are markedly different under the two paradigms. Different organizations and individuals will be operating under different paradigms depending on the meanings they use (Dalgaard et al., 1988).

#### Issues Management

The issues management process is closely related to institutional strategic planning which focuses on long-

range issues. This process is concerned with emerging issues. Where strategic planning is concerned with an organizational or institutional future, issues management is concerned with how the public policy process influences the socio-political environment (Ewing, 1980).

Several models exist for issues management processes (Bartha, 1985; Ewing, 1980; Heath and Nelson, 1986; Kast, 1980). Most definitions are similar, and include the following stages:

-identification of emerging issues

-issues analysis

-prioritization of issues

-policy development

-supporting program development

-operation implementation/action plan

-communication to appropriate stakeholders

-evaluation of result or impact assessment

Bartha (1984) represents issues management in a five step model. These steps are:

<u>1. Involves monitoring the socio-political</u> <u>environment</u>. A staff group with environmental monitoring and analytical capability is essential to yield meaningful information for corporate planning.

2. Assessment results in a set of implications and guidelines. This is to ensure that the organization's

perception of the external environment matches with external evidence.

<u>3. Planning involves key planners</u>. These planners design strategic directions with consideration of external implications.

<u>4. Decision making leads to approval, rejection,</u> <u>initiation, or modification</u>. This applies to internal and/or external programs.

5. Evaluation is critical for the organization. This is an important way to learn about its effectiveness and efficiency.

Applied to educational organizations, such as the Cooperative Extension Services, the issues management models redefine the educational purpose of the organization from a focus on discipline-based education to traditional audiences. The issues based on programming focus look to society to identify issues and to develop knowledge-based education to improve people's lives (Dalgaard et al, 1988).

Resources of the university are applied more broadly in issue centered programs. All colleges of the land grant institution, other universities, colleges, organizations and contact personnel address issues through interdisciplinary teams, work group, advisory groups, and coalitions. Issue identification drives audiences, resources, program delivery systems, and organization of resources. Traditionally, problems are defined in terms of and bounded by subject matter disciplines, traditional audiences, traditional teaching methods, and traditional organization of resources (Dalgaard et al, 1988).

What are the advantages and disadvantages of issues programming? Advantages include a proactive stance for the organization, program relevance, broadened support base, ongoing organizational renewal as issues change, integration of resources, linkage of public and private sectors to solve complex human problems and organizational structure shifts to meet new demands.

Several disadvantages can also be noted. Existing personnel may be at risk due to organizational shifts and redirection. New issues may define the need for staff with different skills and specializations, such as, What happens to those whose expertise is no longer needed? Are current supporters alienated when issue priorities mandate a shift of organizational priorities? Major shifts of personnel and financial resources may occur as priority issues change. The role of specialized personnel becomes less clear cut. The Cooperative Extension Services has invested heavily in highly technically educated staff to address problems.

What if those technical resources are no longer appropriate for targeted issues? Does the organization

dismantle the structure for those resources or does it maintain a basic level in specific critical areas (Dalgaard, et al, 1988; ECOP Futures Task Force, 1987)

Authors in the area of issues programming also describe benefits that have implications for the CES. Α systematic process of identification, analysis and priority setting among present and emerging public issues allows organizations to capitalize upon opportunities in a transitional society (Duke, 1983). Demands by stakeholders to be involved in decision making are accommodated (Ewing, 1980). Brown summarized that an issues focus allows an organization to be proactive, rather than reactive. An organization has new opportunities for leadership by staying in touch with social concerns (Brown, 1981).

A key barrier to issues programming for extension organizations may be internal resistance to change. Educational efforts are needed to raise awareness internally and externally. Training of staff to develop skills appropriate to issues management is critical. Perceptions of staff concerning issues programming can enhance or impede the organizational change process (Dalgaard, et al. ,1988).

# Selection of Issues and Problems

Agriculture and Marketing, Home Economics, 4-H Youth Programs, and Natural Resources and Public Policy problems

which arouse tended to be specifically "owned" by a program area.

In the contrasting issues paradigm, issues are broadly conceived as topics of wide public concern arising out of complex human problems. Priority is given to those issues that:

- can be acted upon by Extension in ways that make a difference,
- are consistent with the Extension and values, and
  have support both within Extension and the general public or the possibility of the development of that internal and support (Dalgaard et al, 1988).

Issues programming moves decisions to about audiences, resources, program delivery methods or strategies, and organization of resources to address the issues most effectively. In this case, the selection of issues is bounded by the potential for impact by Extension, Extension mission and values, and overall resource availability. The disciplinary resources, audiences, and program delivery methods for specific issues are no longer predetermined. They flow from issues and are strategically chosen to have maximum results in addressing the priority issues (Dalgaard et al., 1988).

Loftis and Kendall (1991) suggest that little is yet known about the results of issues programming in Cooperative Extension, especially for risk-benefit issues. At this time there is a need to create or raise awareness among the people about the complex issue, such as the risk of pesticides in food, and provide scientific information needed for making decisions without bias. Decision making includes rational assessment of the potential risk, determining "acceptable risk," and taking responsible action to minimize or manage that risk for the well-being of those affected.

In 1991, Colorado State University conducted a study on "Videotape Education on a Controversial Issue: Pesticides in Food." The objectives of the study was to increase awareness, knowledge, and sense of control over personal risk level as opposed to changing clientele opinions on the safety of the food supply. They found that the videotape was an effective and successful way to communicate about the risk/benefit issues. However, the programming on risk/benefit issues requires more careful preparation than programming for less controversial areas (Loftis and Kendall, 1991).

# Shifting in Extension Paradigms

The shift in paradigms in Extension reflects a realignment with Extension roots and traditions. It is a shift in emphasis from Extension's education methods or strategies back to the outcomes of Extension efforts: the improvement of people's lives by helping people to address and solve society's most pressing problems and issues. It is a refocusing of Extension resources on people and on the grass-roots tradition of Extension. It is a reaffirmation of the early history of Extension as a public service arm of the entire Land Grant university and a recognition that the scope of the Land Grant university is much broader than it was then. And it is a remembering that the role of the Extension worker is both to respond to the public concern and to be an agent of social change (Dalgaard et al., 1988).

Not all state Extension organizations have been ready to begin issues programming at the same time. Directors and other influential people must assess the readiness of their organizations by considering several key aspects of the environment and the organization itself. According to Dalgaard et al. (1988), the following criteria are useful in determining organizational readiness for issues programming.

# 1. <u>Members' perception about the organizations'</u> <u>turbulent environment and need to change</u>

Cooperative Extension services, in which the members perceive the uncertainty of a turbulent environment, are more likely to be ready for issues programming. It is particularly important for the director and top administrators to perceive the environment. They can then communicate the conditions demanding change to others throughout the organization. The more this understanding pervades the organization, the more likely it becomes that staff will support change.

# 2. <u>Staff members' satisfaction with Extension's</u> performance.

Internal dissatisfaction with the current ways of doing Extension business will support a transition to issues programming. Frequently this dissatisfaction will be most obvious among outstanding performers in the field staff. These individuals are the first to sense that the organization is not meeting the most pressing concerns of local citizens. The administrator's challenge is to sense dissatisfaction this and, again, to facilitate communication between these opinion leaders in the organization. Dissatisfaction may also come from members of the administrative team who lackluster observe performance or programs which are not having significant impact on communities.

# 3. <u>Top administrators' commitment to issues</u> programming.

Within each Extension organization the administrators must have a commitment to making the transition to issues commitment programming. The must begin with an understanding of issues programming and what it will mean for the organization. Commitment also means a willingness to reallocate resources to support issues programming. Verbal commitment, without a willingness to wrestle with the challenge of providing resources to design and implement issues programs, indicates that the organization is not yet ready to move to issues programming.

### 4. <u>Administrators need support from key staff or</u> <u>other influentials</u>.

Administrators alone cannot move an organization from disciplinary programs to issues programs. Particularly important will be support from field staff and from those who provide funding within states and counties. Field staff can make issues programming work or they can assure that it will not. If key field staff members have expressed dissatisfaction with the way that Extension is relating to communities, then securing their support for moving to issues programming will be relatively easy.

## 5. <u>Administrator's willingness to examine and to</u> <u>adjust the organization in ways that are</u> <u>consistent with issues programming</u>.

The director and a few other top administrators in each organization must lay out a new vision. Through a systematic process of strategic planning, the organization should improve its mission to emphasize Extension's educational role in addressing issues extension and clarify its core values, and set a direction for the future in rather concrete terms. Administrators will find the process to be most effective if they involve staff and other people early in the process, if they seek authentic participation, and if they listen.

# 6. <u>Supportive organizational characteristics to</u> <u>change</u>.

Administrators must be honest and realistic in assessing these characteristics. Has communication been (or can it be) frequent and honest from administrators to staff? Have administrators sought real, meaningful communication from staff and will they use the ideas and information? Lofy (1987) calls this a "safe haven for speaking the truth." Giving up an old paradigm and moving to a new one requires honest communication.

The organization will be more likely to succeed in its transition if members can show a tolerance for ambiguity during the time of change. The organization can assist in creating this tolerance by being willing to support staff in their period of ambiguity. The organization is ready to move toward issues programming if its administrators are willing to make that commitment to staff. For example, staff may be unclear about what their new roles are and how they relate to one another under issues programming. Providing a situation in which individuals can work out these ambiguities in roles will make a more effective transition. Other specific characteristics to consider are the communication system which might be available to support the change, external, definitely imposed deadlines for change which will make the move more real for staff; and the ability to adjust systems within the organization

such as performance evaluation, rewards, and budget. Lacking one or two of these readiness characteristics will not preclude issues programming, but the more areas in which the organization is not ready, the less likely that issues programming can succeed (Dalgaard et al., 1988).

In order to move from traditional or disciplinary extension programming to the issues programmings, it is required to have new ideas or innovations to be adopted by the clientele. In a social system, the diffusion and adoption of an innovation is the vehicle to move the society to the desired direction.

### Diffusion And Adoption of Innovations

The major function of most extension practitioners is to facilitate the adoption of new ideas and practices by their clients. In order to be most effective in this role, one needs to understand the processes and factors involved in the diffusion and adoption of innovations. And how new ideas and practices are communicated among members of county or state client system and how they decide to adopt or reject these innovations. This helps one to explain and predict the rate of adoption of new ideas and provides a basis for developing effective strategies and planning successful extension programs.

One of the features of diffusion is that it occurs over time. Generally, there is a considerable time lag,

usually many years, between the introduction of a new idea and its widespread adoption. This time lag can vary a great deal from one innovation to another and for the same innovation in different social systems.

The success of extension programs is often measured by the degree to which this time lag is reduced to increase the rate of adoption and the relative speed with which an innovation is diffused and adopted by members of a social system. This rate is measured by the number or proportion of potential adopters who have adopted an innovation in a specific period of time. According to Lamble (1984):

the rate of adoption is influenced by at least following five factors: (1) the type of decision involved in the adoption of the innovation; (2) the perceived attribute of the innovation; (3) the nature of the client system; (4) the nature of the communication channels used; and (5) the extent of the extension practitioner's effort (pp. 32-33).

Research on the diffusion of innovation started in a series of independent intellectual enclaves during its first several decades. Nine major diffusion traditions are described: anthropology, early sociology, rural sociology, education, medical sociology, communication, marketing, geography, and general sociology. Each of these disciplinary cliques of diffusion researchers studied one kind of innovation; for example, rural sociologists investigated the diffusion of agricultural innovation to farmers while educational researchers studied the spread of new teaching ideas among school personal. Despite the distinctiveness of these approaches to diffusion research, each "invisible college" uncovered remarkably similar findings; for example, that the diffusion of an innovation followed an S-shaped curve over time and that innovators had higher socioeconomic status than later adopters (Rogers, 1983).

Historically, research on the diffusion process began with anthropology and was strongly influenced by social psychology, but it took its most powerful form in the hands of empirically minded rural sociologists, beginning with the classic study of hybrid seed corn by Ryan and Gross (1914). Perhaps the best integrated research traditions on adoption and diffusion process can be found in Rogers and Shoemaker's literature (1962). Out of the sociological studies of the 1920s and 1930s emerged the finding that adoption decisions follow a normal curve when plotted over time on a frequency basis (Agba, 1980).

One of the first empirical investigations was done by Chapin (1928) in his analysis of diffusion of the city manager plan of government. Similar studies were conducted by Rice (1928), Penberton (1936, 1938), and Davis (1941). Wilson (1927) also pointed out the relationship between communication and diffusion of farm practices. Later studies reported by Hoffer (1942) and Ryan and Gross (1943)

help to establish the cornerstone of inter-disciplinary studies in this area. Ryan and Gross (1943) analyzed the diffusion and adoption of hybrid seed corn in two Iowa communities. The innovation of hybrid corn was one of the most important new farm technologies when it was released to Iowa farmers in 1928, and it ushered in an "agricultural revolution" in farm productivity. The diffusion of hybrid seed was heavily promoted by the Iowa Agricultural Extension Service and by salesmen from seed companies.

Hybrid corn was an innovation with a high degree of relative advantage over the open-pollinated seed that it replaced, the typical farmer moved rather slowly from awareness-knowledge of the innovation to adoption. The innovation decision period from first knowledge to the adoption decision averaged about nine years for all This finding led to a clearer respondents. realization that the innovation-decision process involved considerable deliberation by most adopters, even in the case of an innovation with spectacular results. The average respondents took three or four years after planting his first hybrid seed, usually on a small trial plot, before deciding to adopt completely (Rogers, 1983, pp. 32-33).

Communication channels play different roles at various stages in the innovation-decision process. The typical farmer first heard of hybrid seed from salesmen, but neighbors are the most frequent channel leading to persuasion. Salesmen are more important channels for early adopters, and neighbors are more important for later adopters. The Ryan and Gross (1943) findings suggested the role of interpersonal networks in the diffusion process in a system. The farmer-to-farmer exchange of personal experiences with use of the hybrid seed seemed to lie at the heart of diffusion (Rogers, 1983, p. 33).

Wilkening (1950a, 1950b) suggested that the adoption of farm practices is a process, and he conceptualized four stages: (1) awareness, (2) interest, (3) trial, and (4) adoption. Other studies provide theoretical variations on this approach.

Rogers, Beal, and Bohlem (1957) studied the "Validity of the Concept of stages in the Adoption Process," and confirmed the existence of five stages. The theoretical framework that influenced this finding was the rational model of innovation structured by major stages: (1) awareness, (2) interest, (3) evaluation, (4) trial, and (5) adoption. The model consisting stages has been authenticated by most research workers.

It has been reported that after an innovation is introduced, different people of the community become aware of it, get interested in it, evaluate it, try it, and finally adopt or reject it at different times. The time taken by an individual from first hearing about an innovation to its final adoption has been termed by rural sociologists as the adoption period. It was acknowledged by many (Rogers, 1961; Moulik, 1966; Reddy et al., 1969)

that people could be divided into different categories on the basis of relative time taken by them in adopting an innovation and the extent of adoption of innovation (Sinha and Kolte, 1974, pp. 8-9).

A classic medical sociology study on drugs under the medical sociology tradition was conducted by Coleman, Menzel, and Katz (1957). They found that innovativeness is positively correlated to opinion leadership. The conceptual significance of this tradition is comparable to that of the rural sociology tradition. The drug study is also comparable to Ryan and Gross's analysis of hybrid seed corn in terms of its conceptual contribution to diffusion theory.

Paul Mort (1938) was a pioneer in the education diffusion tradition. Mort and his associates studied the time lag between innovation, or the discovery of innovative practices, and their wide spread adoption. The key concept was that local control led to greater adaptability by schools. He defined "adoptability" as essentially synonymous with innovativeness.

Carlson, in the 1960's, studied the adoption of programmed instruction and various forms of modern math in Pennsylvania and West Virginia schools, focusing on the personal characteristics of school superintendents and the role of opinion leadership within the school system.

Conceptually, the contribution made by education is comparable to that made by the early sociology tradition. According to the education research tradition, the adoption pattern of an educational idea over time approaches an Sshaped curve (Farnsworth, 1940; Mort and Cornell, 1941; Barrington, 1953; Lovos, 1955; Alder, 1955; Allen, 1956). This pattern implies that at first only a few "pioneer" schools adopt the new ideas, the majority then decides that the new ideas are desirable, and finally the curve levels off as the remaining schools adopt.

During the sixties, there was a tremendous increase in the study of diffusion of innovation. According to Rogers (1983), the diffusion process has four crucial elements: (1) an innovation, (2) which is communicated through certain channels, (3) over time, and (4) among the members Waktola (1975) indicated in his of the social system. dissertation that the success of any diffusion of innovation program hinges upon the efficiency with which new ideas of change are formulated and disseminated to the clientele. This process is, in turn, a function of factors which include the predisposition of the clientele to (1) the new ideas or innovations themselves, (2) the agencies which promote the practices, and (3) their own goals and aspirations.

Rogers and Shoemaker have completed hundreds of studies dealing with the diffusion of innovation. According to them, there are cross-cultural similarities as will as differences in the diffusion of innovations; therefore, diffusion models are not entirely culture-bound. The probe of success of the introduction of an innovation is its actual adoption by the people. Introduction of an innovation inevitably leads to social change, even when it fails to produce the intended consequences. These changes may find expression in the attitude and outlook of the people or in their behavior or in their value systems, or all of these may by affected. While some innovations may be easily and readily accepted, others might meet with resistances or indifference. The success of adoption of innovation depends partly upon the nature of the innovation itself and partly on the social and cultural character of the people among whom it is introduced. Consequently, different social systems may react differently to the same innovation (Rajagopalan and Singh, 1971).

### Adoption of Innovations Processes

The diffusion process refers to the spread of new ideas from originating sources to ultimate users. In the case of agriculture, it is the process by which new farm practices or ideas are communicated from sources of origin, usually scientists, to farmers. The adoption process is a

mental process through which an individual passes from first hearing about a new idea to its final adoption. It may divided into stages.

Acceptance and use of improved technology or new ideas is a type of human action. Adoption of innovation has been conceived of both as a process and a point in the process by several researchers. Rogers (1962) defined adoption as a process of thinking and doing in which an individual passes from first hearing about innovation to its final adoption. Several diffusion researchers (Wilkening, 1950; Lavidge & Steiner, 1961; Colley, 1961; Rogers, 1962; Klongland & Coward, 1970; Valkonen, 1970; Rogers & Shoemaker, 1971; Robertson, 1970; Zaltman & Brooker, 1971; Brereton, 1972; Lionberger & Gwin, 1976; Singh, 1981; Rogers, 1986) have come out with varying adoption models. The models that have been developed in the past are hereby summarized in the following.

### Models of Adoption

- A. Wilkening (1950): (1) awareness, (2) interest,(3) trial, and (4) adoption.
- B. Lavidge & Steiner (1961): (1) awareness,
  - (1) knowledge, (2) liking, (3) preference,
  - (4) conviction, and (5) purchase.
- C. Colley (1961): (1) unawareness (2) awareness(3) comprehension, (4) conviction, and (5) action.

- D. Rogers (1962): (1) awareness, (2) interest,(3) evaluation, (4) trial, and (5) adoption.
- E. Klongland & Coward (1970): (1) awareness, (1) information, (2) evaluation (3) trial (rejection)/trial (acceptance), and (4) use adoption.
- F. Valkonen (1970): (1) Becoming Aware,(2) Willingness, and (3) Adoption.
- G. Rogers and Shoemaker (1971): (1) Knowledge,
  - (2) Persuasion, (3) Decision, and
  - (4) Confirmation.
- H. Robertson (1971): (1) Problem Perception,
  - (2) Awareness, (3) Comprehension, (4) Attitude,
  - (5) Legitimation, (6) Trial, (7) Adoption,
  - (8) dissonance.
- I. Zaltman & Brooker (1971): (1) Perception,
  - (2) Motivation, (3) Attitude, (4) Legitimation
  - (5) Evaluation, and (6) Resolution.
- J. Brereton (1972): (1) Readiness stage, (2) Action stage, (3) Follow-up stage.
- K. Gwin and Lionberger (1976): (1) Problem,
  - (2) Search for Alternatives, (3) Select
  - Alternatives, (4) Trial, and (5) Adoption.

- L. Singh (1981): (1) Need, (2) Awareness,
  - (3) Interest, (4) Deliberation, (5) Trial,
  - (6) Evaluation, and (7) Adoption.
- M. Rogers (1986): (1) Knowledge, (2) Persuasion,
  - (3) Decision, (4) Implementation, and
  - (5) Confirmation.

Among the various models developed by the social developers, the latest one, developed by Rogers (1986), is the newest and more congenial to the social system, especially in the developed countries. This model has already been adopted by the researchers and extensionists in many parts of the world. The researcher of the present study will use this model in his program.

## Factors Influence the Rate of Adoption of Innovations

Adoption of agricultural innovation or any other innovation depends upon various factors. Some individuals may accept new ideas regardless of what other people do. Other ideas require acceptance by a group of people before one of them can use the idea. The use or adoption of these new ideas or innovation are not economically feasible until several people are willing to use them and change form the traditional practices or methods.

The relative speed with which a new idea is adopted depends partially upon the characteristics of the new

idea. Bohlen et al. (1961), Lionberger and Gwin (1982), Rogers (1983), and Lamble (1984) stated that the following are the crucial characteristics of an innovation that significantly affect the rate of its adoption:

1. Relative advantage (cost and economic returns): Rogers (1983, p. 15) defines relative advantage as "the degree to which an innovation is perceived as better than the idea it supersedes." New ideas or practices that are high in cost generally tend to be adopted more slowly than do the less costly ones. However, regardless of cost, practices which produce high returns for dollars invested tend to be adopted more rapidly than those which yield lower returns. Also, practices producing quick returns on investments tend to be adopted more rapidly than those which produce deferred returns or returns spread over a long period of time.

2. Compatibility: The degree to which an innovation is perceived as being consistent with the existing values, past experiences, and needs of potential adopters defines compatibility. A new idea or practice that is consistent with existing ideas and beliefs will be accepted more rapidly than one that is not. Farmers who already have adopted hybrid seed corn and who are familiar with the concept of hybrid vigor are likely to adopt hybrid goats and hybrid chickens.

3. Complexity: Complexity is the degree to which an innovation is perceived as difficult to understand and use. New ideas that are relatively simple to understand and use will generally be accepted more quickly than more complex ideas.

4. Trialability: The degree to which an innovation may be used experimentally on a limited basis is called trialability. It applies to the quality of an innovation that permits trying a little at a time. Practices, such as fertilizer applications, different fertilizer analyses, feed additives, weed sprays, or seed varieties, may by tied on a sample basis and the results compared with those from previous practices.

5. Observability: This is the degree to which the results of an innovation are visible to others. The easier the results are to observe, describe, and communicate to others, the faster is the rate of adoption. For example, sprinkler irrigation is a highly visible practice; in contrast, some rat poisons kill the rodents in their burrows and results cannot be observed and evaluated easily by the farmer. The more visible the practice and its results, the more rapid is its adoption.

In general, innovations that are perceived by receivers as having greater relative advantage, compatibility, trialability, observability, and less

complexity will be adopted more rapidly than other innovations. These are not the only qualities that affect adoption rates, but past research indicates that they are the most important characteristics of innovations in explaining rate of adoption.

### Adopter Categories

People adopt ideas or practices at different times. Researchers (Bohlen, 1961; Donald, 1976; Lionberger, 1982; Rogers, 1983; Blackburn, 1984) indicate that the diffusion of a new idea usually requires several years. In the first years, a few people adopt it; then in a short span of time, a large number try it; and finally the remainder accept it. This represents the typical pattern. The distribution of clientele adopting a new idea by year of adoption generally has shape of the normal curve. This characteristic on the diffusion curve permits distributing farmers into five adopter categories.

1. Innovators: Often, innovators have been defined as the first to adopt a new idea or practice. Research in the Midwest indicates that these clients exhibit personal and social characteristics which are significantly different from those adopting later. For example, innovators have the ability to understand and apply complex technical knowledge. They are eager to adopt and practice new and complex ideas. At this stage the clientele specially use
magazines and newspapers for information about the innovation.

2. Early adopters: This group commands the highest in opinion leadership and is the most important group to work with for creating change. They are a more integrated part of the local social system than are innovators. Thev are high risk takers; taking risk does not matter to them because they are already highly successfully. They are always willing to try something new, and they can actually produce what innovators talk about. Mass media, newspapers, and friends the main are sources of information.

3. Early majority: This group is second only to early adopters in opinion leadership. They typically act a little more slowly. They are an important link between innovators and early adopters and late majority and laggard in the diffusion process. They like to adopt the innovations which are compatible with their culture, values, past experiences, and needs. When felt needs are met a faster rate of adoption usually occurs. According to Rogers (1983), the early majority are an important link between innovators and early adopter and late majority and laggard in the diffusion process. They communicate the ideas from the innovators and early adopters to the late majority and laggards.

4. Late majority: This term defines the people who will adopt new ideas after the early majority or after the average member of a social system. Late majority is comprised of those people who continually say "show me, show me again . . . ." The economic necessity influenced the late majority groups of people to adopt a new idea.

5. Laggards (Traditional): This type of people are the last in a social system to adopt an innovation. They possess almost no opinion leadership. They are the most localite in their outlook of all categories. Laggards will not adopt the new ideas or innovations until they observe its results. Sometime, they still would not adopt.

# Channels of Information

Clientele obtain information from many channels. Different research findings have uncovered that the channels used by clientele varied with stages in the adoption process. In reviewing the related sources of literature, it was found that numerous and diverse sources or channels of information and multitude of categorization schemes were used. It obviously necessitates a pragmatic set of categories that are mutually exclusive to classify channels of information for the purposes of the present study.

Categorizing the channels of information into mass media and interpersonal is the simplest scheme one could

adopt. However, the demonstrated importance of interpersonal channels to link the external information sources (e.g., change agents) with the receivers suggests the need for a separate category. Therefore, Lingamneni p. 149) (1981, identified a three-category set of information channels in his diffusion research literature: mass media channels, cosmopolite interpersonal channels, and localite interpersonal channels. Mass media channels include television, radio, films, all the print media channels, posters, exhibitions, tours, and visits and demonstrations. Cosmopolite interpersonal channels comprise face-to-face communication with extra-systemic sources such as change agents, scientists, and commercial agents. Localite interpersonal channels refer to those face-to-face communication channels with intra-systemic sources such as relatives, friends, neighbors, local leaders and others that belong to the respondent's social system.

Sometimes the distinction between the sources of information and the channels that carry the messages is not clearly understood. A source is an individual or an institution that originates a message. A channel is the means by which a message gets from a source to a receiver. Singh (1981) in his study on "The need for a communication strategy for rural development" had reported a significant

point that the researchers often categorized communication channels as either interpersonal or mass media in nature and as originating from either localite or cosmopolite sources. Mass media channels are all those means of transmitting messages that include television, film, newspapers, fairs and the like, which enable to reach a large audience. Interpersonal channels are those that involve a face-to-face exchange between two or more individuals.

Singh (1981) also indicated that the sender and receiver of a massage must be connected or tuned to each other, and channels of communication serve as physical bridges between the sender and receiver of messages. Personal contact by farm and visits, group meetings, demonstrations, exhibitions, motion pictures, radio, television, written material such as bulletins, newspapers, pamphlets, tours and excursions are some of the channels commonly used for extension work.

#### Selection and Use of Channel

Proper selection and use of channels vary with the type of audience, the type of message, and the recipient's stage in the adoption process. No matter how important the massage, it will not get through to the intended audience without the use of proper channels. The relative effectiveness of each channel of communication and of

audio-visual aids has been experimentally found to differ. Invariably it has been reported that no one channel alone is effective for all situations. What is needed is a combination of channels in parallel, and operating in quick succession in order to have a lasting and meaningful impact on the ultimate users (Singh, 1981, p. 23).

Technical competency is needed by communicator to use and communicate a particular channel. Singh (1971) in his dissertation research found that improper use or handling of communication channels, like television, did not produce the desired results, and created the wrong impression.

Though variation in channels' effectiveness could be attributed to their characteristics, it could be increased by manipulating components other than characteristics, such as a message-oriented approach, and using them in suitable combination. Singh (1981, p. 24) pointed out that the media effectiveness is in the way the message required. In order to optimize the effectiveness of channels, steps should be taken towards making qualitative changes in content, mode of presentation, quality and relevance of the message. In order to do this, the change agents should understand the situation and reasons why clientele adopt, do not adopt, or partially adopt an innovation.

Success in communication depends on what the recipient does in response to messages received. Several, social,

psychological, economic, and other factors, characterizing a particular individual or group, influence communication effectiveness. These largely determine what type of reception a particular message will get from an individual possessing specific characteristics. After reviewing several studies in the adoption of communication channels, Singh (1981) indicated that a farmer's socio-economic status, level of education, social participation, age adoption status, the stage at which he is in the adoption process, existing level of knowledge about the message, his attitude toward self, toward communicator, and toward message, his change-proneness, value orientation, aspirations for future attainments, his past experience with the communicator's messages, his length of farming career and many other factors present preconditions for the effective communication.

### Adoption Process and Communication

According to Singh (1981), scholars and researchers of the adoption process have recognized for a long time that an individual's decision about adopting or rejecting an innovation is not usually an instantaneous act. Rather, it is a process that occurs over a period of time and consists of a series of actions and decisions. This process has been depicted in terms of various models varying from three to seven stages.

### Different Channels are Important at Different Stages of Adoption Process

The communicator must have thorough knowledge of the media and ability to choose the right one for a particular stage of the adoption process. Many studies have explored the source utilization pattern at different stages of adoption in India. On the basis of those findings, Singh (1981) made the following generalizations:

- 1. Village level--change agent and to some extent mass media are important at the need stage.
- Village level--change agent, mass media and other farmers are the most important sources at awareness.
- 3. The contribution of formal sources such as extension agency and other farmers are nearly equal at the interest stage.
- 4. At the deliberation stage informal personal sources including family members are most important.
- 5. No communication is needed at trial stage for simple substantive practices or the commercially conducted operations. For a complex or entirely new enterprise, informal or expert fellow-farmers act as communication sources.
- 6. At evaluation stage follow farmers and neighbors are the main communication sources.
- 7. Self-experience gained at the trial stage is the main source at adoption stage.

Singh also emphasized differential communication patterns and source channel credibility as perceived by different categories of recipients. For example, for illiterate and semiliterate people with small-sized

holdings and a low level of adoption, demonstrations on the farmer's field, the use of local leaders and progressive communicators farmers as key and interpersonal communication will be more effective and rewarding. For farmers, progressive radio, TV, printed material, specialists and scientists would be more suitable and helpful.

Bohlen et al. (1961) summarized the research findings on various sources of information the clientele used in different stages of adoption process in Table 1. They indicated that mass media sources, such as farm magazines, newspapers, and radio, are most important at the awareness and interest stages. Neighbors and friends are more important than mass media at the evaluation and trial stages.

In 1961, North Central Rural Sociology Subcommittee for the Study of Diffusion of Farm Practices found that the clientele preferred mass media channels, fellow farmers, and agencies at the awareness and interest stages of adoption process; trusted fellow farmers, and trusted others at the evaluation stage; publications, local leaders, and neighbors at the trial stage; and own experience and other Farmers at the adoption stage.

Table 1.	Rank Order of	Information	Channels	by	Stages	in
	the Adoption	Process.				

Awareness	Interest	Evaluatio n	Trial	Adoption
Learn about a new idea or practice	gets more informatio n about it	tries it out mentally	uses or tries a little	accepts it for full- scale and continued use
1. Mass media,radi o,TV,newsp apers, magazines	1.Mass media	1.Friends and neighbors	1.Friends and neighbors	1.Friends and neighbors
2.Friends and neighbors- mostly other farmers	2.Friends and neighbors	2.Agricul tural agencies	2.Agricul tural agencies	2.Agricul tural agencies
3.Agricult ural agencies, Extension, Vo-Ag, etc.	3.Agricult ural agencies	3. Dealers and salesman	3.Dealers and salesman	3.Mass media
4.Dealers and salesman	4.Dealers and salesman	4.Mass media	4.Mass media	4.Dealers and salesman

Source: North Central Regional Extension Publication No. 13, October, 1961

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In 1981, Lingamneni undertook a comparative study of the communication channels the innovation-decision process in the United States and India. The communication media used were the same, but their importance at various stages in the adoption process, and importance to various groups of people within the total social system differed significantly.

After reviewing the past research of Rogers (1986), he suggested a new conceptualization of the adoption process namely, "Innovation-Decision Process." The process consists of the four stages as shown below.

Knowledge: The individual is exposed to the 1. innovation's existence and gains some understanding of how it functions. At this stage, mass media channels are useful for creating knowledge, producing awareness, and providing additional information. Research, in the United States, as well as in other countries, where mass media have been institutionalized as sources of information, has shown that mass media such as radio, T.V., newspapers, magazines, and the like, rank high as means of making people aware of new ideas and providing more information. Mass media is more important in the developed countries, whereas cosmopolite interpersonal channels are relatively more important in the less developed countries (Lingamneni, 1981, p. 14; Rogers, 1986; Beal and Rogers, 1957, 1960;

Copp et al., 1958; Mason, 1962, 1963, 1964; Rogers and Beal, 1958; Rogers and Pitzer, 1960; Wilkening, 1952, 1956.

2. Persuasion: The individual forms a favorable or unfavorable attitude toward the innovation. The findings of research indicated that at this stage, localite interpersonal channels are more important in both the more developed counties and the less developed countries. Supportive evidence is available from the same set of the United States and Indian studies cited under the knowledge function.

3. Decision: The individual engages in activities which lead to a choice to adopt or reject the innovation. At this stages, cosmopolite interpersonal channels are relatively more important than mass media channels or localite interpersonal channels in more developed, as well as developed, countries. Beal and Rogers (1960), Mason (1962), Rogers (1986), Rogers and Beal (1958), Sandhu (1967), Savale (1966), Singh and Jha (1965), and Wilkening (1952, 1956) strongly advocated this generalization.

4. Implementation and Confirmation: The individual seeks reinforcement for the innovation-decision he has made, but he may reverse his previous decision if exposed to conflicting messages about the innovation. For simple innovations, localite interpersonal channels are relatively more important than mass media channels or cosmopolite interpersonal channels at the decision function in the

developed as well as in the less developed countries. Kapoor (1966), Mason (1962), Rao and Patel (1966), Rogers and Pitzer (1960), Sinha and Parshad (1966), Singh (1967), Rogers (1986), and Lingamneni (1981) have conformed this generalization.

#### Summary

Literature has documented the dynamic history of CES in the U.S. and in Michigan. The Kent County Extension is the extended part of the Michigan State University Extension and is helping its clientele to help themselves in many areas. As the needs of clientele are changing very fast with changes of society, the extension services in Michigan, as well as in Kent County, are moving from disciplinary programming to issue programming and providing services to its clientele based on their needs. Loftis and Kendall (1991) asserted that little is known about the issue programming in CES. There is a need to raise awareness among the clientele about the various issues.

The MSUE had identified the issues, such as food safety and quality, international marketing, revitalizing rural America, sustainable agriculture, water management, water quality, and youth at risk. In order to achieve the desired goal of MSUE, useful information need to be channelized to the clientele in relative to those issues. These broader spectrum of the MSUE would be effective if

proper channels of information be identified and supplied the useful messages to the audience accordingly. In reviewing the related literature, it was found that diverse channels of information and a multitude of categorization schemes were used at different stages of adoption. The proper selection and use of channels vary with the type of clientele, the type of information, and the recipient's stages in the adoption process. Singh (1981) said that no matter how important the massage is, it will not get through to the intended audience without the use of proper Invariably, it has been reported in the channels. literature that no one channel alone is effective for all situations. What is needed is a combination of channels in parallel, and operating in quick succession in order to have a lasting and meaningful impact on the ultimate users. Singh again pointed out that the media effectiveness is in the way the message required. In order to optimize the effectiveness of channels, steps should be taken towards making qualitative changes in content. mode of presentation, quality, and relevance of the message. In order to do this, the change agents should understand the situation and reasons why clientele adopt, do not adopt, or partially adopt an innovation.

Bohlen et al. (1961) summarized the research findings on various channels of information the clientele used in

different stages of adoption process and indicated that mass media sources, such as farm magazines, newspapers, and radio, are most important at the awareness and interest stages. Neighbors and friends are more important than mass media at the evaluation and trial stages. Rogers (1986) identified five stages of adoption: knowledge, persuasion, decision, implementation, and conformation and the channels used by the clientele at those stages. On the basis of reviewing the past literature and theories, the researcher concluded that mass media channels for creating Knowledge and awareness are useful in providing information, whereas locate interpersonal channels are important at the persuasion stages of adoption. Cosmopolite interpersonal channels are relatively more important than mass media channels or localite interpersonal channels at the decision for simple innovations, stage whereas. localite interpersonal channels are relatively more important than mass media channels or cosmopolite interpersonal channels at the implementation and confirmation stage.

#### CHAPTER III

### METHODS AND PROCEDURES

The purpose of this study is to describe and determine the views of MSUE clientele in Kent County toward various channels of information and how the clientele prefer to receive information on new ideas regarding the selected critical issues during the first two stages of innovation adoptions process. This chapter is divided into the following seven major sections: (1) selection of the county, (2) population, (3) sampling, (4) development of the instrument, (5) validity and reliability of instrument, (6) data collection, and (7) data analysis procedures.

#### Selection of Kent County

According to the U.S. Census Bureau and County Agricultural Development Statistics (1990), Kent County has a population of 500,631, of which 81.8% are urban and 18.2% are rural. Kent county is located in the west central section of Michigan. The total county acreage is 551,532. Approximately 28.7% is cropland, 22.2% forest, 4.6% pasture, 1.3% water, and 43.2% other land.

Kent County was selected for the following reasons: it is important to maintain population validity throughout this project. Population validity refers to the extent to which the results can be generalized from the specific sample to the total population of larger subjects. Characteristics of the respondents should approximate those of the general Michigan population (Hanenburg, 1986). Table 2 provides comparative statistics of selected characteristics in Michigan and Kent County. These statistics are the best indicators of progressive thinking in the county. In order to obtain reliable and pertinent information from the respondents, population concentration is the most favorable criterion chosen by researchers. Considering the above facts, the researcher believes that Kent County is an appropriate location to be selected for this research. With a minimum cost, one can have maximum output from this type of investigation.

In addition to the above reasons, the researcher chose Kent County because: (1) the availability of the four major program areas of MSUE (CES) consisting of Agricultural Marketing, Home Economics, 4-H Youth Programs and Natural Resources and Public Policy; (2) location within an agro-industrial area; and (3) nearness to MSU and research facilities.

Table 2.	Selected	Characteristics of the Population :	in
	the Kent	County Compared with the State of	
	Michigan	Population (1990).	

Characteristic	Kent County Percent	Michigan Percent
Sex male female	48.4	48.6
Race white black american Indian, Eskimo, Aleut Asian and Pacific Islander other	88.7 8.0 .6 1.1 1.6	83.4 14.0 0.6 1.1 0.9
Education <u>Persons 25 years and over:</u> % H. school graduates % with bachelor's degree or higher	80.3 20.7	76.8 17.4
Employment Status employed unemployed	70.5 5.3	64.1 8.2
Setting area Urban Rural	81.8 18.2	70.7 29.3

Source: The U. S. Census Bureau and County Agricultural Development Statistics (1980) and (1990).

#### **Population**

The objective of a scientific study or research is to describe the nature of a population, i.e., a group or class, subject variables, concepts or phenomena (Wimmer and Dominick, 1987). There are two aspects of describing a population: the target population and the survey population. The target population is the collection of elements that the researcher would like to study. The survey population is the population that is actually sampled and for which data may be obtained. Borg and Gall (1983, p. 241) and Babbie, (1983, p. 146) defined the target population as "all the members of a real or hypothetical set of people, events, or objectives to which we wish to generalize the results of our research." The advantage of drawing a small sample from a large target population is that it saves the researcher's time and expense of studying the entire population (Borg and Gall, 1983, p. 241).

For this study, the population was the clientele of the MSUE in Kent County. However, it was difficult to cover the total target population in terms of time, cost, and other resources that would have to be mobilized and involved. On the other hand, selecting the survey population from the target population provided for a manageable scope of study (Patrick, 1990 p.34). The

current population list of this study was obtained from the MSUE Kent County office.

According to Hanenburg (1986), population validity is one of the most important factors in the generalization of research finding. The demographics of Kent County represent all the elements of the State of Michigan's population. The Kent County population approximates the general Michigan population and, therefore, the finding from this study could be used to generalize the overall MSUE activities in the state of Michigan.

#### <u>Sampling</u>

The sample is a strategically and systematically identified group of people or events that meet the criterion of representativeness for a particular study. The sample was selected by the same process that permits the researcher to assume that the sample was representative of the population from which it has been drawn. Also, a random sample provides for each individual in a defined population to have an equal chance of being included (Borg and Gall, 1983).

As mentioned previously, Kent County has been selected for this study. A list of clients from each of the program areas was obtained from the MSUE office in Kent County. A stratified sampling procedures was used to collect data from each of the four program areas respondents. The sample of the clientele from each group was selected randomly by using a random list generated by SPSS/PC+ Table 3. Any duplication of clientele in MSUE (CES) programs areas has been deleted.

Program Area	Population	8	Sample
Home Economics	4203	45%	167
4-н	2607	28%	103
Ag./Hort.	1582	17%	63
NRPP	998	10%	37
Total	9390	100%	370

Table 3. Population and Sampling for Each Program Area.

#### Development of Instrument

Based on the literature review and considering the objectives of this study, the instrument was developed by the researcher in consultation with the doctoral committee members, a jury of experts, and selected MSUE personnel in Kent County. According to Dillman (1978) and Elliot (1991), a mail questionnaire is a useful technique for data collection of survey research because social desirability bias and interviewer distortion and subversion can be avoided.

The mail survey has often been the design of choice for gathering research data in extension education. It has many advantages. It is relatively inexpensive, fairly easy

to organize, can assure anonymity and can be used with relative ease by novice researchers, as well as seasoned professionals. The mail questionnaire is particularly useful in obtaining data from distant populations. It can reach people who are too busy to be interviewed, and it can target subgroupings of respondents. It can be used to gather data quickly on a broad variety of research problems, and its format is conducive to appropriate statistical analysis. Additionally, the mail survey instrument lends itself well to obtaining reliability coefficients through test-retest procedures, and it meets acceptable standards of content validity when analyzed by expert reviewers. It can also "eliminate interviewer bias to questions that are sensitive or embarrassing when posed by an interviewer" (Cote et al., 1986). Therefore, the researcher chose to use the mail questionnaire technique to collect data from the respondents.

### Validity and Reliability

The main propose of any data gathering methodology is to ensure reliability and validity of the information obtained. Reliability is the degree to which a given observation or measurement can be repeated by an independent observer with the same result. Validity means the extent to which we are able to observe or measure that which we intend to observe or measure (Gorden, 1969).

Validity and reliability refer to different aspects of a measure's believability. Judgments of validity answer the question: Is the instrument an appropriate one for what needs to be measured? Reliability answers the question: does the instrument yield the same results? (Morris and Fitz-Gibbon, 1978, pp. 89-115). According to Elliot with all research, the development (1991), of an instrumentation should include a pilot test for reliability and a check for validity. Validity is concerned with the systematic or nonrandom error in collecting information. A test is valid only for some specifiable function, with specific groups, under specific conditions. Content validity refers to the representativeness of the instrument as related to the entire domain or universe of content on collecting information. the researchers are which Reliability is the accuracy or precision of an instrument.

For the purpose of this study, a jury of experts from the Department of Agricultural and Extension Education and Michigan State University Extension was selected to establish instrument validity. The jury was selected on the basis of: (1) experience with MSUE program areas, (2) familiarity with information delivery system on a new innovation during the first two stages of adoptions, and (3) knowledgeable and experience with survey research. A copy of the instrument was delivered to each judge, and the researcher scheduled a meeting with all the members and individually to evaluate the instrument. The members of the jury were asked to evaluate each question in the instrument to determine if it could be understood and would be appropriate to answer the research questions.

Reliability of the instrument was achieved through a number of techniques. First, a random selection of the population was selected. The instrument was pilot tested among forty clientele in the selected county who are not included in the study sample. The pilot test data were used to determine the reliability of instrument and Cronbach's alpha will be calculated to determine the reliability of the instrument. The final version of the instrument was prepared on the basis of the suggestions made by the jury of experts and reliability coefficients. A copy of the research proposal, instrument, and cover letter was submitted to the University Committee on Research Involving Human Subjects to review and approval. This review is required to ensure that all human rights are met in the study.

### Data Collection

The survey instrument, cover letter, and stamped, self-addressed return envelope was mailed to the sample population in each of the four MSUE (CES) program areas (Agricultural/Horticulture, Home Economics, 4-H Youth Program and Natural Resources and Public Policy) in Kent

County during July, 1992. Potential respondents were assured that their replies would be kept confidential. Seven days later a reminder postcard with a thank-you note was mailed to all respondents. Three weeks later a second follow-up was mailed to the clientele who had not returned the initial instrument. The following consisted of a cover letter that informed the clientele or (surveyed people) that their questionnaire had not yet been received and included a restatement of the basic appeal from the original cover letter, a replacement questionnaire, and another return stamped envelope. The response rate was 54%.

One of the common problem in the social science research is the nonresponse error. Scholars have developed different procedures for handling this problem. The researcher compared early to late respondents' responses to overcome such a problem. Miller and Smith (1983) indicated that late respondents are often similar to nonrespondents. Thus, one way to estimate the nature of the replies of nonrespondents is through late respondents. So, the respondents were dichotomized into those who responded early and those who responded late. These two groups were compared statistically to ascertain whether any significant differences existed between them.

### Data Analysis Procedures

Data collected analyzed by using Statistical Package for Social Science (SPSS/PC+). Collected data had been coded for processing and analysis.

In order to accomplish the objectives of the study, the following data analyses were calculated:

Frequencies/descriptive statistics were calculated to analyze, present, and summarize the general finding and data. T-test, ANOVA, and Tukey test were calculated to determine the usefulness and preference of channels of information in the first two stages of adoption based on the demographic data about the selected issues. For the selected issues correlation were also calculated to determine the relationship between the available and useful and preferred mass media and interpersonal channels of information at knowledge and persuasion stages of adoption. Alpha was set a prior at .05.

### CHAPTER IV

#### FINDINGS

The purpose of this study was (1) to identify and describe which channels of information for selected critical issues the Kent County MSUE clientele consider useful, and (2) to identify how those clientele prefer to receive information about selected critical issues during each of the first two stages of adoption.

This chapter presents the results obtained from the statistical analysis of the data. This chapter is divided into the six sections: (1) reliability test; (2) demographic information; (3) available channels of information (4) useful channels of information in the knowledge and persuasion stages of adoption; (5) the preferred channels of information for the knowledge and persuasion stages of adoption and (6) statistical analysis.

## **Reliability Tests**

Results of the reliability tests are presented in Tables 4 and 5. The overall reliability of the instrument was .86 for the pilot test and .88 for all

Table 4. Results of Reliability Tests for the Instrument (Pilot Test).

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Issues at Knowledge stage	<pre># of Channels in Each Question</pre>	Cronbach's Alpha Coefficient
Food Safety and Quality	18	.87
Water Quality	18	.77
Youth and Families at Risk	18	.89
Rural and Urban Interface	18	.90
Overall preference at	18	.80
knowledge stage		
Issues at Persuasion Stage		
Food Safety and Quality	18	.87
Water Quality	18	.86
Youth and Families at Risk	18	.91
Rural and Urban Interface	18	.91
Overall preference at	18	.83
persuasion stage		
	180	.86
Total		

Issues at Knowledge Stage	# of Channels in Each Question	Cronbach's Alpha Coefficient
Food Safety and Quality	18	.87
Water Quality	18	.89
Youth and Families at Risk	18	.88
Rural and Urban Interface	18	.90
Overall preference at	18	.84
knowledge stage		
Issues at Persuasion Stage		
Food Safety and Quality	18	.87
Water Quality	18	.89
Youth and Families at Risk	18	.87
Rural and Urban Interface	18	.90
Overall preference at	18	.85
persuasion stage		
	180	.88
Total		Î.

Table 5. Results of Reliability Tests for All Survey Respondents.

survey respondents. The questionnaire was divided into ten questions for analysis. Each question asked respondents to rank 18 information channels for use and preference across the knowledge and persuasion stages of adoption. The alpha coefficient for the pilot test ranged from .77 to .91 (Table 4). A reliability test was also conducted on all survey respondents. The alpha reliability coefficients for all respondents ranged from .84 to .90 (Table 5). The reliability coefficient values were deemed sufficiently high to proceed with data analysis and interpretation.

Tables 4 and 5 show the results of the reliability tests for the instrument and all survey respondents on the usefulness of information channels and on the preferred channels of information about the selected critical issues during the knowledge and persuasion stages of adoption of innovation.

### Demographic Information

This section describes the demographic characteristics of the respondents. The information obtained included: gender, race, level of education, income, age and rural/urban resident.

The number of questionnaires mailed was 370. Returned questionnaires included 180 usable, 27 nondeliverable, five unusable, three children, one sick respondent, and one respondent living outside Kent County. The return net was 180 (54%) out of 333. The

distribution of the respondents by program area is presented in Figure 1. One hundred-one (56%) were from home economics, 36 (20%) were from 4-H, 27 (15%) were from Agriculture/Horticulture and 16 (9%) were from Natural Resources and Public Policy.



Figure 1. Survey Respondents By Program Area.

One hundred-twenty six (70%) of the respondents were female and 54 (30%) were male (Table 6).

Gender	Number	Percent
Male	54	30.0
Female	126	70.0
Total	180	100.0

Table 6. Gender of Respondents.

One hundred-sixty nine (93.9%) of the respondents were white, 8 (4.4%) were black and 1 (0.6%) was for each of the other races listed (Table 7).

Table 7. Race of Respondents.

Race	Number	Percent
White	169	93.9
Black	8	4.4
American Indian, Eskimo or Aleut	1	0.6
Asian or Pacific Islander	1	0.6
Hispanic Origin (of any Race)	1	0.6
Total	180	100.0

Table 8 describes the respondents' level of education. Fifty-six (31.1%) had college or graduate education. Fifty (27.8%) had some college education, 45 (25.0%) had a high school diploma, 27 (15.0%) have some high school education, and two (1.1%) had some elementary school education or no education.

The Level of Education	Number	Percent
No education or some elementary school	2	1.1
Some high school education	27	15.0
High school diploma	45	25.0
Some college education	50	27.8
College or graduate education	56	31.1
Total	180	100.0

Table 8. The Level of Education of the Respondents

Table 9 describes the respondents' yearly income. Ninety-eight (57%) had incomes between \$10,000 and \$49,999 per year. Twenty-three (13.4%) had incomes of more than \$50,000 per year. Twenty-nine (16.9%) were unemployed, and 22 (12.8%) had incomes less than \$10,000 per year.

Income	Number	Percent
Unemployed	29	16.9
Less than \$10,000	22	12.8
\$10,000 - \$49,000	98	57.0
\$50,000 or more	23	13.4
Total	180	100.0

Table 9. The Distribution of the Respondents' Incomes.

Source: U. S. Department of Commerce, Bureau of the Census. Statistical Abstract of the United States 1990. Washington, D.C.: U. S. Government Printing Office.

Table 10 describes the area in which the respondents live. Seventy-one (40.3%) were living in a suburban setting, 68 (38.6%) were living in rural areas, and 37 (21%) were living in urban areas.

Table 10. The Distribution of Respondents' Living Areas.

Living area	Number	Percent
Urban Setting	37	21.0
Suburban Setting	71	40.3
Rural Setting	68	38.6
Total	180	100.0

Table 11 shows the distribution of respondents by age. Nineteen (10.9%) respondents indicated an age of 20 years or less; 13 (7.5%) respondents indicated an age of 21 years to 30 years old. Thirty-nine (22.4%) of the respondents were between 41 years and 50 years old.

Age Range	Number	Percent
Lowest - 20 Years	19	10.9
21 - 30 Years	13	7.5
31 - 40 Years	39	22.4
41 - 50 Years	37	21.3
51 - 60 years	16	9.2
61 Years or older	50	28.7
Total	180	100.0

Table 11. The Distribution of the Respondents' Age.

Sixteen (8.9%) were between 51 and 60 years old. Fifty (27.8%) respondents were 60 years or older.

### Available Channels of Information

Table 12 shows the available channels of information by rank order from most available to least available, as the channels were identified by respondents. One hundred and seventy-eight (98.9%) of the respondents responded positively regarding to the availability of the radio as a channel of information. One hundred and seventy-four (96.7) respondents reported that T.V. was readily available to them as a channel of information. Newspaper(s) were the third highest ranked available channel of information, with 169 (93.9%) positive responses and 11 (6.1%) negative responses. Friend(s) were the fourth ranked available channel of information, with 167 (93.8%) positive responses

Channels of Information		Yes		No	
	N	&	N	8	
Radio	178	98.9	2	1.1	
T.V	174	96.7	6	3.3	
Newspaper(s)	169	93.9	11	6.1	
Friend(s)	167	93.8	11	6.2	
Book(s)/ Library(ies)	157	88.7	20	11.3	
Relative(s)	155	88.1	21	11.9	
Newsletter(s)	155	87.6	22	12.4	
Neighbor(s)	149	84.2	28	15.8	
Newsmagazine(s)	135	76.3	42	23.7	
Videotape(s)	129	74.6	44	25.4	
Billboard(s)	131	74.4	45	25.6	
Class(es)/ Course(s)	115	65.3	61	34.7	
Salesperson(s)	107	62.6	64	37.4	
Extension Agent(s)	107	61.8	66	38.2	
Local Leader(s)	99	57.2	74	42.8	
Seminar(s)	97	55.1	79	44.9	
Conference(s)	74	43.0	98	57.0	
Group Demonstration/ Field day(s)	70	40.5	103	59.5	
Other	4	8.7	42	91.3	

Table 12. Available Channels of Information By Rank Order From Most Available to Least Available As Identified By the Respondents.

and 11 (6.2%) negative responses. The remainder of the available channels of information were ranked between 157 (88.1%) to 70 (40.5%) for positive responses and 20 (11.3%) and 103 (59.5%) for negative responses. The group demonstration/field day(s) were the lowest available channel of information with 70 (40.5%) positive responses.

### Useful Channels of Information for Knowledge and Persuasion Stages of Adoption

This section describes the respondent perceptions of the usefulness of 18 channels of information about four selected critical issues in the first two stages of adoption. The respondents were asked to indicate the level of usefulness of each channel of information for each issue, in both the knowledge and the persuasion stage of adoption.

This information is shown in Tables 13 through 20. A descriptive analysis was used. The channels of information were ranked in order (according to their means) from the most to the least useful. The statements were ranked on a five-point Likert scale where 1 indicated "of no use at all"; 2 indicated "not very useful"; 3 indicated "uncertain"; 4 indicated "somewhat useful" and 5 indicated "very useful." The respondent ranking the channels of information were categorized into three groups as follow:
- --The channels which were ranked between 4.0 to 5.0 were defined as most useful for delivering information.
- --The channels which were ranked between 3.0 to 4.0 were defined as moderately useful for delivering information.
- --The channels which were ranked less than 3.0 were defined as least useful channels for delivering information.

Means and standard deviations are shown in Tables 13 and 19.

# <u>Useful Channels of Information By Issues at</u> <u>Knowledge Stage of Adoption</u>

## Food Safety and Quality

Table 13 shows the channels useful for delivering information about Food Safety and Quality at the knowledge stage of adoption. Television (4.40) and newspaper(s) (4.29) were ranked as the highest/most useful information channels. Newsletter(s) (3.91), Radio (3.89), Friend(s) (3.65), Newsmagazine(s) (3.65), Book(s)/Library(ies) (3.65), Relative(s) (3.41), Neighbor(s) (3.27), Class(es)/ Course(s) (3.24) and Extension Agent(s) (3.22) were ranked as moderately useful channels of information. Local Leader(s) (2.83), Seminar(s) (2.82), Videotape(s) (2.82), Billboard(s) (2.78), Conference(s) (2.70),Group demonstration/Field day(s) (2.62) and Salesperson(s) (2.61)

Table 13. Means and Standard Deviations By Rank Order Regarding the Usefulness of the Channels of Information About Food Safety and Quality at the Knowledge Stage of Adoption.

Food Safety and Quality Issue at Knowledge Stage				
Channels of Information	N	Mean	SD	
Τ.V.	180	4.40	.96	
Newspaper(s)	178	4.29	1.02	
Newsletter(s)	175	3.91	1.33	
Radio	179	3.89	1.18	
Newsmagazine(s)	176	3.65	1.30	
Friend(s)	179	3.65	1.11	
<pre>Book(s)/Library(ies)</pre>	178	3.65	1.29	
Relative(s)	179	3.41	1.22	
Neighbor(s)	179	3.27	1.18	
Class(es)/Course(s)	178	3.24	1.38	
Extension Agent(s)	176	3.22	1.47	
Local Leader(s)	175	2.83	1.35	
Seminar(s)	179	2.82	1.46	
Videotape(s)	175	2.82	1.53	
Billboard(s)	178	2.78	1.26	
Conference(s)	176	2.70	1.45	
Group Demonstration/Field day(s)	175	2.62	1.47	
Salesperson(s)	175	2.61	1.24	
Other	55	2.02	1.31	

were ranked as the least useful information channels for Food Safety and Quality at knowledge stage of adoption.

### Water Quality

Table 14 shows the channels useful for delivering information about Water Quality at the knowledge stage of adoption. Television (4.30) and newspaper(s) (4.26) were ranked as the highest/most useful information channels. Radio (3.86), Newsletter(s) (3.76), Newsmagazine(s) (3.48), Book(s)/ Library(ies) (3.27), Friend(s) (3.12), Extension Agent(s), and Relative(s) (3.06) were ranked as moderately useful channels of information. Class(es) / Course(s) (2.98), Neighbor(s) (2.88), Local Leader(s) (2.84),Seminar(s) (2.73), Conference(s) (2.67), Billboard(s) (2.66), Videotape(s) (2.65), Group demonstration/Field day(s) (2.43) and Salesperson(s) (2.29) were ranked as the least useful information channels for Water Quality at the knowledge stage of adoption.

### Youth and Families at Risk

Table 15 shows the channels useful for delivering information about Youth and Families at Risk at the knowledge stage of adoption. Television (4.43) and Newspaper(s) (4.34) were ranked as the highest/most useful information channels. Radio (3.94), Newsmagazine(s) (3.75), Newsletter(s) (3.70), Friend(s) (3.54), Relative(s)

Table 14. Means and Standard Deviations By Rank Order Regarding the Usefulness of the Channels of Information About Water Quality at the Knowledge Stage of Adoption.

Water Quality Issue at Knowledge Stage					
Channels of Information N Mean					
T.V.	180	4.30	1.01		
Newspaper(s)	178	4.26	0.99		
Radio	180	3.86	1.19		
Newsletter(s)	177	3.76	1.32		
Newsmagazine(s)	178	3.48	1.36		
Book(s)/Library(ies)	176	3.27	1.32		
Friend(s)	177	3.12	1.27		
Extension Agent(s)	176	3.11	1.35		
Relative(s)	177	3.06	1.23		
Class(es)/Course(s)	175	2.98	1.38		
Neighbor(s)	175	2.88	1.24		
Local Leader(s)	175	2.84	1.28		
Seminar(s)	178	2.73	1.40		
Conference(s)	175	2.67	1.40		
Billboard(s)	177	2.66	1.26		
Videotape(s)	175	2.65	1.48		
Group Demonstration/Field day(s)	175	2.43	1.30		
Salesperson(s)	177	2.29	1.15		
Other	48	1.79	1.05		

Table 15. Means and Standard Deviations By Rank Order Regarding the Usefulness of the Channels of Information About Youth and Families at Risk at the Knowledge Stage of Adoption.

Youth and Families at Risk at Knowledge Stage				
Channels of Information	N	Mean	SD	
Τ.V.	178	4.43	1.04	
Newspaper(s)	180	4.34	0.96	
Radio	180	3.94	1.19	
Newsmagazine(s)	177	3.75	1.36	
Newsletter(s)	175	3.70	1.31	
Friend(s)	177	3.54	1.17	
Relative(s)	177	3.41	1.28	
Book(s)/Library(ies)	176	3.40	1.34	
Neighbor(s)	176	3.20	1.26	
Class(es)/Course(s)	175	3.03	1.44	
Seminar(s)	178	2.96	1.48	
Local Leader(s)	177	2.94	1.28	
Videotape(s)	174	2.91	1.47	
Conference(s)	175	2.84	1.47	
Extension Agent(s)	176	2.76	1.30	
Billboard(s)	176	2.65	1.32	
Group Demonstration/Field day(s)	177	2.51	1.28	
Salesperson(s)	175	2.07	1.12	
Other	48	2.00	1.35	

(3.41), Book(s)/Library(ies) (3.40), Neighbor(s) (3.20), and Class(es)/Course(s) (3.03) were ranked as moderately useful channels of information. Seminar(s) (2.96), Local Leader(s) (2.94), Videotape(s) (2.91), Conference(s) (2.84), Extension Agent(s) (2.76), Billboard(s) (2.65), Group demonstration/Field day(s) (2.51) and Salesperson(s) (2.07) were ranked as the least useful information channels for Youth and Families at Risk at knowledge stage of adoption.

### Rural and Urban Interface

Table 16 shows the channels useful for delivering information about Rural and Urban Interface at the knowledge stage of adoption. Newspaper(s) (4.11) and Television (4.09) were ranked as the highest/ most useful information channels. Radio (3.64), Newsletter(s) (3.51), Newsmagazine(s) (3.40), Friend(s) (3.12), and Book(s)/ Library(ies) (3.06) were ranked as moderately useful channels of information. Relative(s) (2.98), Neighbor(s) (2.96), Extension Agent(s) (2.87), Local Leader(s) (2.84), Course(s) (2.67), Seminar(s) Class(es)/ (2.62),Videotape(s) (2.60), Conference(s) (2.58), Billboard(s) (2.51), Group demonstration/ Field day(s) (2.41), and Salesperson(s) (2.02) were ranked as the least useful information channels for Rural and Urban Interface at the knowledge stage of adoption.

94

Table 16. Means and Standard Deviations By Rank Order Regarding the Usefulness of the Channels of Information About Rural and Urban Interface at the Knowledge Stage of Adoption.

Rural and Urban Interface at Knowledge Stage				
Channels of Information	N	Mean	SD	
Newspaper(s)	180	4.11	1.14	
T.V.	179	4.09	1.20	
Radio	180	3.64	1.36	
Newsletter(s)	178	3.51	1.35	
Newsmagazine(s)	177	3.40	1.41	
Friend(s)	177	3.12	1.26	
Book(s)/Library(ies)	177	3.06	1.38	
Relative(s)	177	2.98	1.25	
Neighbor(s)	177	2.96	1.25	
Extension Agent(s)s)	177	2.87	1.36	
Local Leader(s)	177	2.84	1.38	
Class(es)/Course(s)	175	2.67	1.37	
Seminar(s)	176	2.62	1.44	
Videotape(s)	175	2.60	1.45	
Conference(s)	175	2.58	1.42	
Billboard(s)	175	2.51	1.31	
Group Demonstration/ Field day(s)	175	2.41	1.26	
Salesperson(s)	176	2.02	1.11	
Other	46	1.78	1.11	

## <u>Useful Channels of Information By Issues</u> <u>at the Persuasion Stage of Adoption</u>

### Food Safety and Quality

Table 17 shows the channels useful for delivering information about Food Safety and Quality at the persuasion stage of adoption. Television (4.38) and newspaper(s) (4.32) were ranked as the highest/most useful information channels. Newsletter(s) (3.97),Radio (3.85),Newsmagazine(s) (3.72), Friend(s) (3.41), Extension Agent(s) (3.37), Relative(s) (3.36), Book(s)/Library(ies) (3.34), Neighbor(s) (3.20) and Class(es)/Course(s) (3.09) were ranked as moderately useful channels of information. Videotape(s) (2.86), Local Leader(s) (2.86), Seminar(s) (2.81),Group demonstration/Field day(s) (2.80),Conference(s) (2.73),Billboard(s) (2.53),and Salesperson(s) (2.44) were ranked as the least useful information channels for Food Safety and Quality at the persuasion stage of adoption.

#### Water Quality

Table 18 shows the channels useful for delivering information about Water Quality at the persuasion stage of adoption. Newspaper(s) (4.33) and Television (4.30) were ranked as the highest/most useful information channels. Radio (3.82), Newsletter(s) (3.82), Newsmagazine(s) (3.70), Book(s)/Library(ies) (3.30), Friend(s) (3.29), Relative(s)

Table 17. Means and Standard Deviations By Rank Order Regarding the Usefulness of the Channels of Information About Food safety and Quality at the Persuasion Stage of Adoption.

Food Safety and Quality Issue at Persuasion Stage					
Channels of Information	N	Mean	SD		
T.V.	180	4.38	1.04		
Newspaper(s)	179	4.32	1.04		
Newsletter(s)	178	3.97	1.31		
Radio	179	3.85	1.22		
Newsmagazine(s)	178	3.72	1.32		
Friend(s)	178	3.41	1.16		
Extension Agent(s)	178	3.37	1.36		
Relative(s)	177	3.36	1.22		
Book(s)/Library(ies)	178	3.34	1.39		
Neighbor(s)	177	3.20	1.21		
Class(s)/Course(s)	176	3.09	1.43		
Videotape(s)	175	2.86	1.53		
Local Leader(s)	177	2.86	1.34		
Seminar(s)	176	2.81	1.44		
Group Demonstration/ Field day(s)	177	2.80	1.42		
Conference(s)	175	2.73	1.42		
Billboard(s)	177	2.53	1.28		
Salesperson(s)	177	2.44	1.25		
Other	40	1.93	1.31		

Table 18. Means and Standard Deviations By Rank Order Regarding the Usefulness of the Channels of Information About Water Quality at the Persuasion Stage of Adoption.

Water Quality Issue at Persuasion Stage						
Channels of Information N Mean						
Newspaper(s)	178	4.33	0.94			
<b>T.V.</b>	179	4.30	1.04			
Radio	179	3.82	1.22			
Newsletter(s)	178	3.82	1.22			
Newsmagazine(s)	178	3.70	1.34			
Book(s)/Library(ies)	176	3.30	1.39			
Friend(s)	178	3.29	1.29			
Relative(s)	177	3.20	1.30			
Neighbor(s)	178	3.15	1.31			
Extension Agent(s)	177	3.05	1.41			
Class(es)/Course(s)	177	2.98	1.46			
Local Leader(s)	178	2.87	1.33			
Seminar(s)	178	2.79	1.49			
Conference(s)	177	2.77	1.48			
Videotape(s)	178	2.75	1.49			
Group Demonstration/ Field day(s)	177	2.69	1.32			
Billboard(s)	177	2.47	1.24			
Salesperson(s)	177	2.16	1.21			
Other	42	1.64	1.01			

(3.20), Neighbor(s) (3.15) and Extension Agent(s) (3.05) were ranked as moderately useful channels of information. Class(es)/Course(s) (2.98), Local Leader(s) (2.87), Seminar(s) (2.79), Conference(s) (2.77), Videotape(s) (2.75), Group demonstration/Field day(s) (2.69), Billboard(s) (2.47), and Salesperson(s) (2.16) were ranked as the least useful information channels for Water Quality at the persuasion stage of adoption.

### Youth and Families at Risk

Table 19 shows the channels useful for delivering information about Youth and Families at Risk at the persuasion stage of adoption. Television (4.33) and Newspaper(s) (4.33) were ranked as the highest/most useful information channels. Radio (3.94), Newsletter(s) (3.87), Newsmagazine(s) (3.76), Friend(s) (3.59), Relative(s) (3.52), Neighbor(s) (3.30), Book(s)/ Library(ies) (3.27), and Class(es)/Course(s) (3.13) were ranked as moderately useful channels of information. Videotape(s) (2.98), Extension Agent(s) (2.98), Seminar(s) (2.93), Local (2.89), Conference(s) (2.89), Leader(s) Group demonstration/Field day(s) (2.61) Billboard(s) (2.46) and Salesperson(s) (2.08) were ranked as the least useful information channels for Youth and Families at Risk at the persuasion stage of adoption.

Table 19. Means and Standard Deviations By Rank Order Regarding the Usefulness of the Channels of Information About Youth and Families at Risk at the Persuasion Stage of Adoption.

Youth and Families at Risk at Persuasion Stage				
Channels of Information	N	Mean	SD	
T.V.	180	4.33	1.07	
Newspaper(s)	180	4.33	0.94	
Radio	179	3.94	1.16	
Newsletter(s)	179	3.87	1.31	
Newsmagazine(s)	178	3.76	1.35	
Friend(s)	178	3.59	1.14	
Relative(s)	178	3.52	1.21	
Neighbor(s)	178	3.30	1.24	
Book(s)/Library(ies)	177	3.27	1.37	
Class(es)/Course(s)	178	3.13	1.45	
Videotape(s)	179	2.98	1.53	
Extension Agent(s)	177	2.98	1.38	
Seminar(s)	178	2.93	1.50	
Local Leader(s)	179	2.89	1.29	
Conference(s)	177	2.89	1.49	
Group Demonstration/ Field day(s)	177	2.61	1.37	
Billboard(s)	176	2.46	1.26	
Salesperson(s)	177	2.08	1.13	
Other	44	2.02	1.30	

### Rural and Urban Interface

Table 20 shows the channels useful for delivering information about Rural and Urban Interface at the persuasion stage of adoption. Newspaper(s) (4.19) and Television (4.15) were ranked as the highest/most useful information channels. Newsletter(s) (3.87), Radio (3.78), Newsmagazine(s) (3.69), Friend(s) (3.30), Relative(s) (3.23), Neighbor(s) (3.14), and Book(s)/ Library(ies) (3.14) were ranked as moderately useful channels of information. Extension Agent(s) (2.94), Local Leader(s) (2.91), Class(es)/Course(s) (2.87), Seminar(s) (2.82), Videotape(s) (2.80), Conference(s) (2.75),Group demonstration/Field day(s) (2.74), Billboard(S) (2.44), and Salesperson(s) (2.06) were ranked as the least useful information channels for Rural and Urban Interface at the persuasion stage of adoption.

# <u>Preferred Channels of Information For The</u> <u>Knowledge and Persuasion Stages</u> <u>of Adoption</u>

This section describes how the respondents prefer to receive information about the four selected critical issues during the knowledge and persuasion stages of adoption. The respondents were asked to rank the level of preference regarding 18 channels of information procurement on a fivepoint Likert scale. One on the scale indicated "not preferred at all," 2 indicated "not very preferred,"

Table 20. Means and Standard Deviations By Rank Order Regarding the Usefulness of the Channels of Information About Rural and Urban Interface at the Persuasion Stage of Adoption.

Rural and Urban Interface at Persuasion Stage				
Channels of Information	N	Mean	SD	
Newspaper(s)	180	4.19	1.05	
T.V.	179	4.15	1.11	
Newsletter(s)	177	3.87	1.19	
Radio	179	3.78	1.23	
Newsmagazine(s)	179	3.69	1.31	
Friend(s)	178	3.30	1.27	
Relative(s)	177	3.23	1.28	
Neighbor(s)	177	3.14	1.31	
<pre>Book(s)/ library(ies)</pre>	177	3.14	1.38	
Extension Agent(s)s)	175	2.94	1.38	
Local Leader(s)	178	2.91	1.33	
Class(es)/ Course(s)	178	2.87	1.44	
Seminar(s)	177	2.82	1.49	
Videotape(s)	176	2.80	1.47	
Conference(s)	175	2.75	1.47	
Group Demonstration/ Field day(s)	177	2.74	1.36	
Billboard(s)	175	2.44	1.20	
Salesperson(s)	177	2.06	1.13	
Other	41	1.90	1.14	

3 indicated "uncertain," 4 indicated "somewhat preferred," and 5 indicated "very preferred." The means and standard deviations are shown in Tables 21 and 22.

The respondents' ranking of the channels of information has been categorized into three groups:

1. The channels which were ranked between 4.0 to 5.0 were defined as the most preferred for delivering information.

2. The channels which were ranked between 3.0 to 4.0 were defined as moderately preferred for delivering information.

3. The channels which were ranked less than 3.0 were defined as the least preferred channels for delivering information.

## <u>Preferred Channels of Information About the</u> <u>Four Selected Critical Issues at The</u> <u>Knowledge Stage of Adoption</u>

Table 21 shows means and standard deviations by rank order regarding respondents' channel preferences for receiving information about Food Safety and Quality, Water Quality, Youth and Families at Risk, and Rural and Urban Interface at the knowledge stage of adoption. Reading Newspaper(s) (4.45), Watching Television (4.42), Reading Newsletter(s) (4.12), and Listening to Radio (4.05) were the most preferred channels of information. Reading Newsmagazine(s) (3.87), Discussing with Friend(s) (3.65), Table 21. Means and Standard Deviations By Rank Order Regarding Channel Preferences for Food Safety and Quality, Water Quality, Youth and Families at Risk and Rural and Urban Interface at the Knowledge Stage of Adoption.

All Four Issues at Knowledge Stage			
Channels of Information	N	Mean	SD
Reading Newspaper(s)	180	4.45	0.90
Watching T.V.	180	4.42	1.02
Reading Newsletter(s)	178	4.12	1.11
Listening to Radio	180	4.05	1.16
Reading Newsmagazine(s)	178	3.87	1.33
Discussing with Friend(s)	179	3.65	1.13
Reading Book(s)/or visiting Library(ies)	178	3.43	1.38
Asking Relative(s)	179	3.31	1.23
Contacting Extension Agent(s)	176	3.23	1.37
Asking Neighbor(s)	179	3.23	1.26
Attending Class(es)/Course(s)	175	3.16	1.45
Attending Seminar(s)/Workshop(s)	176	3.03	1.46
Visiting Demonstration Site (s)	177	2.97	1.41
Discussing With Local Leader(s)	178	2.97	1.32
Watching Videotape(s)	177	2.91	1.49
Attending Conference(s)	175	2.89	1.45
Reading Billboard(s)	176	2.61	1.29
Contacting Salesperson(s)	177	2.09	1.15
Other	42	2.02	1.32

Reading Book(s)/or Visiting Library(ies) (3.43), Asking Relative(s) (3.31), Contacting Extension Agent(s) (3.23), Asking Neighbor(s) (3.23), Attending Class(es)/Course(s) (3.16), and Attending Seminar(s)/Workshop(s) (3.03) were ranked as moderately preferred channels of information. Visiting Demonstration Site(s) (2.97), Discussing with Local Leader(s) (2.97), Watching Videotape(S) (2.91), Attending Conference(s) (2.89), Reading Billboard(s) (2.61), and Contacting Salesperson(s) (2.09) were ranked as the least preferred channel for information about the four selected critical issues at the knowledge stage of adoption.

## <u>Preferred Channels of Information About the</u> <u>Four Selected Critical Issues at The</u> <u>Persuasion Stage of Adoption</u>

Table 22 shows means and standard deviations by rank order regarding respondents' channel preferences for delivering information about Food Safety and Quality, Water Quality, Youth and Families at Risk, and Rural and Urban Interface at the persuasion stage of adoption. Reading Newspaper(s) (4.39), Watching Television (4.31), and Reading Newsletter(s) (4.20) were the most preferred channels of information. Listening to Radio (3.96), Reading Newsmagazine(s) (3.80), Discussing with Friend(s) (3.58), Reading Book(s)/or Visiting Library(ies) Table 22. Means and Standard Deviations By Rank Order Regarding Respondents' Channel Preferences for Food Safety and Quality, Water Quality, Youth and Families at Risk and Rural and Urban Interface at the Persuasion Stages of Adoption.

All Four Issues at Persuasion Stage					
Channels of Information	N	Mean	SD		
Reading Newspaper(s)	180	4.39	0.98		
Watching T.V.	179	4.31	1.10		
Reading Newsletter(s)	179	4.20	1.09		
Listening to Radio	180	3.96	1.21		
Reading Newsmagazine(s)	178	3.80	1.37		
Discussing with Friend(s)	178	3.58	1.17		
Reading Book(s)/or visiting Library(ies)	176	3.40	1.37		
Asking Relative(s)	177	3.37	1.25		
Asking Neighbor(s)	178	3.27	1.20		
Contacting Extension Agent(s)	177	3.21	1.40		
Attending Class(es)/Course(s)	176	3.06	1.49		
Visiting Demonstration Site(s)	177	3.03	1.43		
Watching Videotape(s)	177	3.02	1.51		
Attending Seminar(s)	177	2.99	1.44		
Discussing with Local Leader(s)	178	2.97	1.25		
Attending Conference(s)	177	2.90	1.46		
Reading Billboard(s)	177	2.56	1.33		
Contacting Salesperson(s)	178	2.18	1.19		
Other	35	1.60	1.01		

(3.40), Asking Relative(s) (3.37), Asking Neighbor(s) (3.27), Contacting Extension Agent(s) (3.21), Attending Class(es)/Course(s) (3.06), Visiting Demonstration Site(s) (3.03), and Watching Videotape(s) (3.02) were ranked as moderately preferred channels of information. Attending Seminar(s)/Workshop(s) (2.99), Discussing with Local Leader(s) (2.97), Attending Conference(s) (2.90), Reading Billboard(s) (2.56), and Contacting Salesperson(s) (2.18) were ranked as the least useful channels of information about the four selected critical issues at persuasion stage of adoption.

# Statistical Analysis

#### <u>T-test</u>

A t-test was conducted to determine if a significant statistical difference existed between the early and late respondents. The results showed that there were no differences between early and late respondents regarding useful and preferred channels of information (mass media and interpersonal) in the first two stages of adoption. Therefore, the results of this research can be generalized to the target population of the study.

A comparison of mean ranking between the gender (male and female) and the available channels of information (mass media and interpersonal) was conducted. The results show that there was no statistically significant difference

107

(p<.05) between the mean ranking of the male and female respondents and the available channels of information.

Also, a comparison of mean rankings between the gender (male and female) and the useful and preferred channels of information (mass media and interpersonal) in the first two stages of adoption about the four selected critical issues was conducted. The results show that there was no statistically significant difference (p<.05) between the mean ranking of the male and female respondents and the useful and preferred channels of information in the knowledge and persuasion stages of adoption, regardless of selected issue.

## <u>Analysis of Variance</u>

<u>Available channels of information</u>. Analysis of variance (ANOVA) also indicated that there were no significant differences (p<.05) based upon the respondents' area of living and the available channels of information.

However, analysis of variance (ANOVA) indicated that there was a significant statistical difference (p<.05) based upon the respondents' income and the available channels of information. A post-hoc Tukey test indicated that there was a significant difference between respondents who were unemployed, those who earned less than \$10,000, those who earned between \$10,000 - \$49,999, and those who earned \$50,000 or more, in terms of their ranking of

108

available of interpersonal channels of information. Respondents who earned \$50,000 or more ranked the interpersonal channels of information significantly higher than respondents who were unemployed, who earned less than \$10,000, and who earned \$10,000 - 49,999. Table 23 shows the results of the Tukey test.

Table 23. Tukey Test for Income Levels and AvailableInterpersonal Channels of Information.

Group	Mean	Unemployed	< \$10,000	\$10,000 \$49,999	\$50,000 or <
Unemployed	3.50				
< \$10,000	3.20				
\$10,000 - \$49,999	3.51				
\$50,000 or <	3.90	45	*	41	

\* *p*<.05

Analysis of variance (ANOVA) also indicated that there was a significant statistical difference (p<.05)

based upon the respondents' level of education and the available channels of information. A post-hoc Tukey test indicated that there was a significant difference between respondents who have college or graduate education and those who have some high school education in terms of their ranking of availability of mass media channels of information. Respondents who have college or graduate education ranked the available mass media channels of information significantly higher than respondents who have some high school education. Table 24 shows the results of the Tukey test.

Table 24. Tukey Test for Level of Education and Available Mass Media Channels of Information.

Education Level	Mean	No Education	Some H.School	H.Scho Diploma	Some College	College or Graduate
No Education	6.00					
S.H.S.Educatio	6.27					
H.S.Diploma	6.67					
S.College	7.07					
College/graduat	7.26		*			

\* p<.05

Analysis of variance (ANOVA) also indicated that there was a significant statistical difference (p.<05) based upon the respondents' level of education and the available channels of information. A post-hoc Tukey test indicated that there was a significant difference between respondents who had college or graduate education and those who had some high school education or who had a high school diploma in terms of their ranking of available interpersonal channels of information. Respondents who had college or graduate education ranked the available interpersonal channels of information significantly higher than respondents who had some high school education and high school diploma. Table 25 shows the results of the Tukey test.

Table 25. Tukey Test for Level of Education and Available Interpersonal Channels of Information.

Education Level	Mean	No Educa- tion	Some High School	High School Diploma	Some College	College or Graduate
No Education	5.00					
S.H.S.Education	6.17					
H.S.Diploma	5.93					
S. College	6.27					
College/graduate	7.69		٠	٠		

\* p<.05

The analysis of variance also found that there were significant differences between respondents' age groups and available channels of information. There was a significant difference between respondents between the ages of 31 and 40 and 41 and 50 and those who are 61 years old or older regarding the available mass media channels of information. Respondents between the ages of 31 and 40 years and 41 and 50 years ranked the available mass media channels of information higher than respondents who are 61 years or older. Table 26 shows the results of the post-hoc Tukey test.

Groups	Mean	< 20 yrs.	21-30	31-40	41-60	51-60	61 or <
< 20 yrs.	6.21						
21-30	6.70						
31-40	6.88						•
41-50	7.05						•
51-60	7.25						
61 or <	7.53						

Table 26. Tukey Test for Age Groups and Available Mass Media Channels of Information.

\* p<.05

The analysis of variance also found that there were significant differences between respondents' age groups and available channels of information. There was a significant difference between respondents between the ages of 31 and 40 years and those who are between 21 and 30 years old and 61 years old or older regarding the available interpersonal channels of information. Respondents between the ages of 31 and 40 years old ranked the available interpersonal channels of information higher than respondents who are between 21 and 30 years old and 61 years old or older. Table 27 shows the results of the post-hoc Tukey test.

The analysis of variance also found that there were significant differences between respondents' age groups and

112

Groups	Mean	< 20 yrs.	21-30	31-40	41-50	51-60	61 or <
< 20 yrs.	5.17						
21-30	5.60						
31-40	6.11		٠				•
41-50	6.23						•
51-60	7.36						
61 or <	7.88						

Table 27. Tukey Test for Age Groups and Available Interpersonal Channels of Information.

available channels of information. There was a significant difference between respondents between the ages of 41 and 50 and those who are 61 years old or older regarding the available interpersonal channels of information. Respondents between the ages of 41 and 50 years old ranked the available interpersonal channels of information higher than respondents who are 61 years old or older. Table 28 shows the results of the post-hoc Tukey test.

# Useful and Preferred Channels of Information

Analysis of variance (ANOVA) indicated that there was no significant difference (p>.05) based upon the respondents' level of education and the useful and preferred channels of information in the first two stages of adoption. Analysis of variance (ANOVA) also indicated that there was no significant differences (p<.05) based

Table 28. Tukey Test for Income Levels and Mass Media Channels Useful for Water Quality Information at the Knowledge Stage.

Group	Mean	Unemployed	< \$10,000	\$10,000 - \$49,999	\$50,000 or <
Unemployed	3.50				
< \$10,000	3.20				
\$10,000 - \$49,999	3.51				
\$50,000 or <	3.90	+			

upon the respondents' area of living and the useful and preferred channels of information in either of the first two stages of adoption.

Analysis of variance (ANOVA) indicated that there was a significant statistical difference (p<.05) based upon the respondents' income and the useful and preferred channels of information in the first two stages of adoption. Α post-hoc Tukey test indicated that there was a significant difference between respondents who were unemployed and those who earned \$50,000 or more on their ranking of mass media channels they feel are useful for water quality information at the knowledge stage adoption. of Respondents who earned \$50,000 more rated the or usefulness, media channels of mass of information significantly higher than respondents who were unemployed

for water quality information at the knowledge stage of adoption. Table 28 shows the results of the Tukey test.

The analysis of variance also found that there were significant differences between respondents' age groups and channels of information they use and prefer at the knowledge and persuasion stages of adoption. The information related to age distribution of the respondents indicated that the age distribution was skewed toward the older population groups. The data analysis also shows that there were significant differences between respondents' age groups and their responses to the channels of information they used and preferred at the knowledge and persuasion stages of adoption.

There was a significant difference between respondents between the ages of 21 and 30 and those between 31 and 40 on the interpersonal channels of information at the knowledge stage. Respondents between the ages of 31 and 40 years rated the usefulness of interpersonal channels of information significantly higher than respondents between the ages 21 -30 years for food safety and quality information at the knowledge stage of adoption. Table 29 shows the results of the post-hoc Tukey test.

Moreover, the analysis of variance also found that there were significant differences between respondents' age groups and the channels of information they used and preferred at the knowledge and persuasion stages of

115

Table 29. Tukey Test for Age Groups and Interpersonal Channels Useful for Food Safety and Quality Information at the Knowledge Stage.

Groups	Mean	< 20 yrs.	21-30	31-40	41-50	51-60	61 or <
< 20 yrs.	3.13						
21-30	2.43						
31-40	3.31		٠				İ
41-50	3.21						
51-60	2.86						
61 or <	2.88						

adoption. There were significant differences between respondents between the ages of 21 and 30 years old and those between the ages of 31 and 40 years old with those who were between the ages of 41 and 50 years old on the mass media channels of information. The older age group rated the usefulness of mass media channels of information higher than the younger age groups for water quality information at the knowledge stage of adoption. Table 30 shows the results of the post-hoc Tukey test.

The analysis of variance also found that there were significant differences between respondents' age groups and the channels of information they used and preferred at the knowledge and persuasion stages of adoption. Significant differences were also found between respondents who are

Table 30. Tukey Test for Age Groups and Mass Media Channels Useful for Water Quality Information at the Knowledge Stage.

Groups	Mean	< 20 yrs.	21-30	31-40	41-50	51-60	61 or <
< 20 yrs.	3.66						
21-30	3.02						
31-40	3.36						
41-50	3.86		•	*			
51-60	3.68						
61 or <	3.43						

between the ages of 41 and 50 years old and those who are 61 years or older on the mass media channels of information. Those between 41 and 50 rated the usefulness of mass media channels of information higher than respondents 61 years or older for youth and families at risk information at the knowledge stage of adoption. Table 31 shows the results of the post-hoc Tukey test.

The analysis of variance also found that there were significant differences between respondents' age groups and the channels of information they use and prefer at the knowledge and persuasion stages of adoption. Finally, there were significant differences between respondents who were between the ages of 41 and 50 years old and those who were between the ages of 31 and 40 years old and 61 years or older on the mass media channels of information. Once

Table 31. Tukey Test for Age Groups and Mass Media Channels Useful for Youth and Families at Risk Information at the Knowledge Stage.

Groups	Mean	< 20 yrs.	21-30	31-40	41-50	51-60	61 or <
< 20 yrs.	3.83						
21-30	3.58						
31-40	3.49						
41-50	3.98						*
51-60	3.62						
61 or <	3.39						

again, respondents between the ages of 41 and 50 years ranked the usefulness of mass media channels of information higher than respondents between the ages of 31 and 40 years and those 61 years or older for youth and families at risk information at the persuasion stage of adoption. Table 32 shows the results of the post-hoc Tukey test.

Table 32. Tukey Test for Age Groups and Mass Media Channels Useful for Youth and Families at Risk Information at the Persuasion Stage.

Groups	Mean	< 20 yrs.	21-30	31-40	41-50	51-60	61 or <
< 20 yrs.	3.88						
21-30	3.70	]					
31-40	3.38						
41-50	3.97			•			٠
51-60	3.41						
61 or <	3.38						

\* p<.05

## <u>Correlations</u>

Computations of Pearson product-moment coefficients were made to determine if significant statistical relationship existed between the data related to the available channels of information and the useful and preferred channels of information about the selected issues at the first two stages of adoption. The findings shown here indicated there were low, moderate, and substantial association/relationships between the available mass media and interpersonal information channels and useful and preferred mass media and interpersonal channels of information about the selected issues at the knowledge and persuasion stages of adoption. In general, the associations/relationships were moderate except there were substantial associations between available and useful interpersonal channels of information for food safety and quality information at the knowledge and persuasion stages of adoption. There was low association between available and preferred mass media channels of information for all the four issues at the persuasion stage of adoption. Tables 33 to 37 shows the relationship between the available and useful and preferred channels of information.

Table 33. The Relationship Between Available and Useful Mass Media Information Channels at the Knowledge Stage of Adoption

Variable	Coefficient	Description
Mass Media For Food Safety & Quality	.46	Moderate
Mass Media For Water Quality	.34	Moderate
Mass Media For Youth and Families at Risk	.39	Moderate
Mass Media For Rural and Urbane Interface	.31	Moderate

Table 34. The Relationship Between Available and Useful Mass Media Information Channels at the Persuasion Stage of Adoption.

Variable	Coefficient	Description
Mass Media For Food Safety & Quality	.32	Moderate
Mass Media For Water Quality	.34	Moderate
Mass Media For Youth and Families at Risk	.32	Moderate
Mass Media For Rural and Urban Interface	.26	Low

Table 35. The Relationship Between Available and Useful Interpersonal Information Channels at the Knowledge Stage of Adoption.

Variable	Coefficient	Description
Interpersonal For Food Safety & Quality	. 53	Substantial
Interpersonal For Water Quality	.42	Moderate
Interpersonal For Youth and Families at Risk	.49	Moderate
Interpersonal For Rural and Urbane Interface	.36	Moderate

Table 36. The Relationship Between Available and Useful Interpersonal Information Channels at the Persuasion Stage of Adoption.

Variable	Coefficient	Description
Interpersonal For Food Safety & Quality	.51	Substantial
Interpersonal For Water Quality	.45	Moderate
Interpersonal For Youth and Families at Risk	.44	Moderate
Interpersonal Media For Rural and Urbane Interface	.37	Moderate

Table 37. The Relationship Between Available and Preferred Mass Media and Interpersonal Information Channels at the Knowledge and Persuasion Stages of Adoption.

Variable	Coefficient	Description
Mass Media For All the Four Issues at the Knowledge Stage	.30	Moderate
Mass Media For All the Four Issues at the Persuasion Stage	.26	Low
Interpersonal For All the Four Issues at the Knowledge Stage	.44	Moderate
Interpersonal For All the Four Issues at the Persuasion Stage	.46	Moderate

# Other Important Issues Mentioned by MSUE Clientele

The following issues were mentioned by the Kent County MSUE clientele as issues they believe to be important in Kent County. The issues were:

- \* Roads and streets conditions, mass transit, parking and roads commission.
- Abuse of drug and alcohol, abuse of women, and child abuse.
- Children's protection, children rights, hungry children, and child support.
- Education and training skills for young people, education funding/budget, education reform, school dropout, teach abstinence.
- \* Getting jobs.
- \* Cultural.
- \* Teenage pregnancy, abortion, single parent, interracial adoption, abusive families, and day care.
- \* Local and international marketing.
- \* Crime prevention and safety, gang violence.
- \* Preparedness for disaster.
- Taxes, politics, too many regulation from government, intergovernment problems, term limits, new political party, tax relief, government officials,
- \* Aging/elderly concerns or retirement.

- \* Recycling, trash pick up, waste and swage disposal/ management, junk cars.
- \* Housing, homeless, poverty, welfare.
- \* Minority issues, issues of discrimination,
- Rural development (farm land), wet lands, land development, land use, urban sprawl, fair ground in appropriate place.
- \* AIDS research and ADIS education, sex, suicide, mental health, health care, low cholesterol food.
- \* Environment damage, cleaning up lakes, rivers, streams, smoke environment concerns, incinerator.
- Animal rights activity should redirect their efforts
  to some thing that will do some good.
- Right to life, handicapper rights, women rights, and equal rights.
- \* Air, ozone layer, toxic/ chemical, pollution, and land pollution.
- Wildlife, hunting is a needed practice, preserving
  wildlife, and preserving forests.
- \* Gypsy moth issue.
- \* Recreation.
- \* Libraries open more hours.
# Other Information Channels Mentioned By MSUE Clientele

Church, grocery store, computer (CEENET), Specialists/ Experts, coops, 4-H projects, townships, local involvement, and alcoholics anonymous were also mentioned by Kent County MSUE clientele as "other" useful and preferred channels of information about the selected issues at the knowledge and persuasion stages of adoption.

#### CHAPTER V

## DISCUSSION, CONCLUSION, AND RECOMMENDATIONS

#### Introduction

The apparent gap in communication between MSUE and its clientele could be greatly ameliorated by identifying effective, useful, and preferred channels of information about key issues in the different stages of adoption of innovation. This study was designed to identify and describe the useful and preferred channels of information about selected issues in Kent County during the first two stages of adoption.

In recognition of the need to relate the findings of this study to educational practice, this chapter was divided into three section. The first section focused on discussion of research findings which included: (1) demographic data, (2) available channels of information, (3) useful channels of information, (4) preferred channels of information. The second section covered/provided the research conclusions, and the last section proffered recommendations for further research.

## **Discussion**

The participants in this study provided a wealth of information. The study was based upon data collected from a random sample of MSUE clientele in Kent County (Michigan). The clientele were from the four MSUE (CES) program areas: (1) Home Economics (2) 4-H (3) Agricultural/ Horticulture, (4) and Natural Resources and Public Policy.

#### Demographic Information

One of the objectives of this study was to determine what affect selected demographic variables had on the use of, and/or preference for, selected channels of information for issues information. The results of the data analysis showed that the respondents who earned \$50,000 or more ranked the availability of interpersonal channels of information significantly higher than respondents who were unemployed or had lower income. The results of the data analysis also showed that the respondents who earned \$50,000 or more ranked the usefulness of mass media channels of information significantly higher than respondents who were unemployed for the water quality issue at the knowledge stage of adoption.

Regarding the level of education, respondents who reported a high level of education (college/ graduate degree) ranked the available mass media and interpersonal

channels of information higher than the groups who reported lower levels of education.

The information related to age distribution of the respondents indicated that the age distribution was skewed toward the older population groups. In general, the younger respondents ranked the available channels of information higher then the older respondents (61 years old or older). The data analysis showed also that there were significant differences between respondents' age groups and their responses to the channels of information they used and preferred at the knowledge and persuasion stages of adoption. For information about food safety and quality at the knowledge stage of adoption, respondents between the ages of 31 and 40 years ranked the usefulness of interpersonal channels of information significantly higher than respondents between 21 and 30 years. The older age group also ranked the usefulness of mass media channels of information higher than the younger age groups for water quality information at the knowledge stage of adoption. Once again, those between 41 and 50 years ranked the usefulness of mass media channels of information higher than respondents 61 years or older for youth and families at risk information at the knowledge stage of adoption. Finally, respondents between 41 and 50 years ranked the usefulness of mass media channels of information higher than respondents between 31 and 40 years and those 61 years

or older for youth and families at risk information at the persuasion stage.

#### Useful Channels of Information

One of the objectives of the study was to identify among the MSUE clientele in Kent County Extension the useful mass media and interpersonal channels information about selected critical issues during each of the first two stages of innovation adoption. Television and newspapers were ranked as the most useful information channels in both the knowledge and persuasion stages of adoption for all four selected issues. Radio, newsmagazine, newsletters, books/library, friends, relatives, neighbors, classes/ courses, and extension agents were ranked as moderately useful channels of information for each of the four selected critical issues at the knowledge and persuasion stages of adoption. Videotapes, seminars, conferences, local leaders, billboards, group demonstration/field days, and sales persons were ranked as the least useful information channels in both the knowledge and persuasion stages of adoption for all four selected issues.

### Preferred Channels of Information

The final objective of this study was to determine how the clientele of MSUE in Kent County preferred to receive issues information during the first two stages of innovation adoption. The study indicated that reading newspapers, watching television, reading newsletters, and listening to radio were the most preferred information channels in both stages of adoption. Reading newsmagazine, reading book(s) or visiting the library, discussion with friends, asking relatives, contacting extension agents, and attending classes/courses, asking neighbors and attending seminars/workshop visiting demonstration sites were ranked as moderately preferred information channels at both knowledge and persuasion stages of innovation Watching videotape, discussing with local adoption. leader(s), attending conference(s), reading billboard(s), and contacting salesperson(s) were ranked as the least preferred channels of information at both the knowledge and persuasion stages of adoption of innovation.

#### <u>Conclusions</u>

Based on the findings of this study, the following conclusions concerning useful and preferred channels of information for selected critical issues at the first two stages of adoption of innovation in the Kent County were drawn. Conclusions are grouped in three sections by the objectives of the study.

The channels of information were categorized into mass media and interpersonal channels of information.

Mass media channels of information: Radio, Television, Newspaper(s), Book(s)/ Library(ies), Newsletter(s), Newsmagazine(s), Videotape(s), and Billboard(s).

Interpersonal channels of information: Friend(s), relative(s), Neighbor(s), Class(es)/Course(s), Salesperson(s), Extension Agent(s), Local Leader(s), Seminar(s), Conference(s) and Group Demonstration/Field day(s).

Regarding the demographic information, the following conclusions were drawn:

1. Income was shown to be significant in evaluating the availability, usefulness, and preference of information channels. The availability, usefulness, and preference of the mass media and interpersonal channels of information were ranked significantly higher by the respondents who earned \$50,000 or more. This indicated respondents who had high income had greater access to, used and preferred the mass media and interpersonal information channels more than did the respondents who had incomes less than \$50,000. This group of respondents are the earlier knowers of an innovation. They have more contact with the change agencies and exposure to the mass media channels than those with low incomes. Those respondents are willing to seek information and have a general attitude toward adopting new ideas and change (Rogers, 1983).

2. Respondents with higher education level (college/ graduate degree) ranked the available mass media and interpersonal channels of information higher than those with lower levels of education. Respondents with high educational levels have the ability to use different information channels to gain knowledge about new ideas. This group of respondents is also called earlier knowers of They are more exposed to the mass media an innovation. lower channels than respondents who have levels of education. Those respondents are willing to seek information and have a proactive attitude toward adopting new ideas and change (Rogers, 1983).

3. There were low, moderate, and substantial associations between the available channels of information and the mass media and interpersonal channels of information. The respondents who have substantial access to available interpersonal channels of information ranked the usefulness of interpersonal channels of information higher than the others groups who have moderate and low access to available interpersonal channels of information.

4. Mass media information channels also were ranked significantly higher as useful and preferred channels of information by different age groups for different issues at both stages of adoption.

The literature review suggested that channels of information can be effectively used, or prefer to be used,

at different stages of adoption of innovation. Thus, mass media channels of information were supposedly effective in creating knowledge, awareness, and spreading information; leading to changes in weakly held attitudes; and teaching a large audience rapidly. On the other hand, interpersonal channels of information were considered effective in providing a two-way exchange of information; and persuading individuals to form or change strongly held attitudes.

However, when clientele were asked to rank the selected channels of information according to their usefulness and how they preferred to receive information, there were no discernible trends in either use, or preference to use, mass media or interpersonal channels of information at any particular stage of adoption of innovation. For instance, basing our criteria on the first ten channels of information at the knowledge and persuasion stages of adoption, respondents were most likely to use and prefer television, newspapers, newsletters, newsmagazine, radio and books/library (from mass media channels of information); and friends, relatives, neighbors, extension agents, and classes/courses (from interpersonal channels of information), respectively.

The following conclusions have been drawn from the results of the data analysis regarding the useful and preferred channels of information at the knowledge and persuasion stages of adoption of innovation.

5. The findings showed that some mass media channels of information were the most useful and the most preferred at the first two stages of adoption for the four selected critical issues. This means mass media channels of information which included television, newspapers, newsletters, newsmagazine, and radio were the most useful and preferred channels of information for the diffusion of new information and technology at the first two stages of adoption of innovation.

Moreover, based upon the results of the data analysis, the MSUE clientele in Kent County used highly and preferred to receive their issues information from mass media channels of information, especially television, newspapers, newsletters, newsmagazines, and radio regardless of adoption stages.

Because the mass media channels of information were ranked higher in terms of their usefulness and preference by the respondents of MSUE clientele, more programs should be developed to provide a wider range of educational, and information services to larger categories of clientele of MSUE taking into considerations their needs and their location from the Kent County office.

This finding supported what Gor (1988), Bruening (1989), and Alonge (1990) found in their research. At the same time, this finding was contrary to what Beal and Rogers (1960), Mason (1962), and Rogers (1986) found. They

found that people felt that the mass media was more useful in the knowledge stage and interpersonal channels of information in the persuasion stage of adoption. Bruiening (1989), Stiegler (1987), Gor (1988) and Alonge (1990) also found that magazines and newspapers as well as other mass media channels are useful and preferred channels of information for the dissemination of information which should be explored by the private and government agencies.

6. The findings showed that most of the interpersonal channels of information were moderately useful and preferred at the first two stages of adoption for the four selected critical issues. Therefore, interpersonal channels of information which included friends, relatives, neighbors, extension agents and classes/courses were moderately useful and moderately preferred channels of information for the diffusion of new information and technology at the first two stages of adoption.

The results of the this study do not support research Hypothesis 2 which stated clientele in Kent County preferred to receive their information from interpersonal channels of information at persuasion stage of adoption.

Practitioners and planners involved in designing and/ or disseminating new innovations should recognize the current strength of useful and preferred channels of information shown by clientele toward mass media information channels in the first two stages of adoption.

The recognition was warranted by the fact that the more one moved from the mass media channels of information to the interpersonal channels of information, the less the useful and preferred by the clientele as supported the channels became.

7. Salespersons were the lowest ranked channels of information at both stages of adoption for all four issues. This finding was attributed to lack of information contributed by the salespersons and/or lack of contact between the clientele and the salespersons.

8. The findings of the study provided a clear-cut answer to the on-going arguments concerning the differences between the knowledge and persuasion stages of adoption. However, there were no significant differences between the two stages in terms of usefulness and preferences of mass media and interpersonal information channels about the selected critical issues. Some possible reasons for the lack of significant differences, at the two stages of adoption, in terms of usefulness and preference of mass media and interpersonal channels about the selected critical issues.

- 1. The list of the information channels was long.
- The survey also was very long, with repetition for the same channels of information.
- Respondents may not have enough knowledge/ background about the stages of adoption.

#### Recommendations for Further Research

1. The four selected critical issues which were used in this research (food safety and quality, water quality, rural and urban interface, and youth and families at risk) as well as other issues that were mentioned by the MSUE clientele in Kent County as issues they believed to be important, should be studied in other counties and states.

2. Specific targeted and unbiased educational and environmental issues important to individuals and groups in Kent County should be researched or studied.

3. The clientele of MSUE in Kent County should be considered for specific educational programs concerning the selected and the other important issues in the county. The programs will create an awareness and knowledge among the clientele about the current and important issues in the county.

4. Because this study was confined to the MSUE clientele in Kent County, the findings were only representative of clientele opinions and perceptions in the county. However, this study could be replicated elsewhere with a few modifications on the instrument in order to address various issues concerning different communities.

## APPENDICES

APPENDIX A

CORRESPONDENCE

OFFICE OF VICE PRESIDENT FOR RESEARCH AND DEAN OF THE GRADUATE SCHOOL EAST LANSING . MICHIGAN . 48824-1046

June 16, 1992

Mansour Al-Howshabi 410 Agriculture Hall

RE: PREFERRED CHANNELS OF ISSUES RELATED INFORMATION ACROSS THE FIRST TWO STAGES OF INNOVATION ADOPTION: THE CASE OF THE KENT COUNTY (MICHIGAN) COOPERATIVE EXTENSION SERVICE CLIENTELE, IRB #92-270

Dear Mr. Al-Howshabi:

The above project is exempt from full UCRIHS review. The proposed research protocol has been reviewed by a member of the UCRIHS committee. The rights and welfare of human subjects appear to be protected and you have approval to conduct the research.

You are reminded that UCRIHS approval is valid for one calendar year. If you plan to continue this project beyond one year, please make provisions for obtaining appropriate UCRIHS approval one month prior to June 11, 1993.

Any changes in procedures involving human subjects must be reviewed by UCRIHS prior to initiation of the change. UCRIHS must also be notifed promptly of any problems (unexpected side effects, complaints, etc.) involving human subjects during the course of the work.

Thank you for bringing this project to my attention. If I can be of any future help, please do not hesitate to let me know.

Sincerely,

David E. Wright, Ph.D., Chair University Committee on Research Involving Human Subjects (UCRIHS)

DEW/pjm

cc: Dr. Kirk Heinze

MSU is an Allirmative Action/Equal Opportunity Institution

# Agricultural & Extension Education



Michigan State University 410 Agriculture Hall East Lansing, Michigan 48824 - 1039 (517) 355 - 6580

Dear friend:

We in the Kent County Cooperative Service and the Department of Agricultural and Extension Education at Michigan State University are always seeking to improve our service to you and others throughout Michigan. One of the ways to improve that service depends on periodically receiving suggestions from clientele like you. Presently, we are interested in finding out how you prefer to receive information about important issues in Kent County. The enclosed questionnaire has been carefully designed to provide valuable information about how you like to receive information about selected critical issues.

This study is being conducted by the Department of Agricultural and Extension Education, in cooperation with the Kent County Cooperative Extension Service. Your name was selected at random from nominations by the Kent County Cooperative Extension Service. Because you are one of a selected sample, your response is very important to us. Please try to answer all the questions. Additional comments can be made in the margins or on a separate sheet of paper.

The information from this survey will be held in strictest confidence and will not be identifiable in any way. The number on the questionnaire is used for mailing and data analysis purposes only.

We estimate it will take 10-15 minutes to complete the questionnaire. If you have any questions regarding this questionnaire, please feel free to contact us at the telephone number or the address above. Thank you for your time and for your cooperation.

Sincerely

Welin Xa

Dr. William Harrison Director of CES Kent County

Dr. Carroll H. Wamhoff Chairperson, Dept. of AEE Michigan State University

P.S.: If you are interested in reviewing the results of this study, please contact the Kent County Cooperative Extension Service after September 30, 1992.

CHW/MAL



Michigan State University 410 Agriculture Hall East Lansing, Michigan 48824 - 1039 (517) 355 - 6580

August 10, 1992

Dear Friend:

Three weeks ago, a questionnaire was sent to you from this office. As one of the Extension clientele of Kent County, you were selected to participate in the study because of your direct knowledge and experiences with Cooperative Extension Service.

142

Because this study is being undertaken to continue improving our services to the county, it is necessary that all questionnaires be returned. Moreover, because of the significance each questionnaire has to the usefulness of this study, it is essential that each person return the questionnaire.

You are assured of complete confidentiality. Your name will never be placed on the questionnaire. We need the opinion of all the selected participants for the study to be truly representative of the opinions of all respondents.

In the event that your questionnaire has been misplaced, a replacement is enclosed. Please return this questionnaire on or before August 17, 1992 in the enclosed stamped envelope. Your cooperation is greatly appreciated.

Sincerely,

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Al- Chourstrabi

Mansour Al-Howshabi Research Director Dept. of AEE Michigan State University (517) 355-6580 /353-2278

This Hanne

Dr. William Harrison County Extension Director Kent County (616) 774-3265

Dear Friend:

We recently sent you a questionnaire seeking your opinion about useful and preferred channels of information about selected critical issues in Kent County. Only a small number of Kent County Cooperative Extension Service clientele were selected to participate in the study. In order for the results of the study to be representative of the opinions of all the county clientele it is essential that each person return the questionnaire.

Complete confidentiality is assured. Your name will not be placed on the questionnaire. Completion is voluntary. If your questionnaire has been misplaced or you need an additional one or you have any questions please feel free to call us at (616) 774-3265 or (517) 355-6580. Your cooperation is highly appreciated.

Sincerely, Dr. William Harrison Sincerely, Mansour Al-Howshabi APPENDIX B

QUESTIONNAIRE

## PREFERRED CHANNELS OF ISSUES-RELATED INFORMATION ACROSS THE FIRST TWO STAGES OF ADOPTION: THE CASE OF THE KENT COUNTY (MICHIGAN) COOPERATIVE EXTENSION SERVICE CLIENTELE

FOOD SAFETY AND QUALITY





WATER QUALITY

YOUTH AND FAMILIES AT RISK





RURAL AND URBAN INTERFACE



Department of Agricultural and Extension Education 410 Ag. Hall Michigan State University E.Lansing, MI 48824-1039 The purposes of this study are to determine: (1) your views regarding the usefulness of various channels of information and (2) how you prefer to receive information about selected important issues in Kent County.

The following are the issues which had been selected :

- **Issue:** Food Safety and Quality which includes food preservation, food handling & storage, food processing, food taste and the nutritional value of food.
- Issue: Water Quality which includes water contamination, water pollution, management of water resources, understanding of water cycles and storage and transfer containment.
- **Issue : Youth and Families at Risk which includes alcohol and drug abuse,** youth crime and delinquency, school drop outs, unemployment, tean-age pregnancy and divorce.
- **lesue:** Rural and Urban Interface which includes urban and rural lifestyle differences, cultural differences, right to farm legislation, odor management and farmland preservation.

There are no right or wrong answers to the questions in this survey. Each response will reflect your personal opinion. Below are examples of the types of questions you will answer in this survey. These examples will help explain how to answer the survey questions.

## Example # 1

Which of the following channels of information are available to you?

Please check the appropriate response for each channel.

Channels of Information	Available to you		
	YES	NO	
Redio	X		
T.V.	X		
Video Tapa		x	

By marking (X) in the box under (YES), you indicated that radio and T.V. are available to you. When you marked (X) in the box under (NO), you indicated that Video Tape is not available to you.

## Example # 2

### Useful Channels of Information at the Knowledge Stage

Please rank the following channels of information according to their usefulness in improving your awareness and knowledge about the **Food Safety and Quality** issue.

Please use the scale below when ranking each channel.

Of No Use	Not Very		Somewhat	Very
At All	Useful	Uncertain	Useful	Useful
1	2	3	4	5

Food Safety and Quality Issue at the Knowledge Stage *							
Channels of Information	Of No Use At All		Very Useful				
	1	2	3	4	5		
Radio	$\prec$						
T.V.			$\times$				
Video Tape					$\star$		

\* The Knowledge Stage of adoption is when an individual first becomes aware of an issue and gains general understanding of that issue.

By checking (X) in the box under (1), you indicated that Radio is Of No Use At All in obtaining information about the Food Safety and Quality issue. When you marked (X) in the box under (3), you indicated that you are Uncertain about (T.V.) in obtaining information about the Food Safety and Quality issue. By checking (X) under (5) you indicated that Video Tape is Very Useful in obtaining information about the Food Safety and Quality issue.

# I. Available Channels of Information

1. Which of the following channels of information are available to you?

Please check the appropriate response for each channel.

Channels of Information	Available to you		
	YES	NO	
Radio			
т.v.			
Video Tape			
Newspaper(s)			
Newsmagazine(s)			
Newsletter(s)			
Group Demonstration/ Field day(s)			
Extension Agant(s)			
Salesperson(s)			
Relative(s)			
Friend(s)			
Neighbor(s)			
Local Leader(s)			
Book(s)/ Library(ies)			
Class(es)/ Course(s)			
Billboard(s)			
Seminar(s)/ Workshop(s)			
Conference(s)			
Other (Specify)			

## II. Useful Channels of Information at the Knowledge Stage

2. Please rank the following channels of information according to their usefulness in improving your awareness and knowledge about the **Food Safety and Quality** issue.

Of No Use Not Very Somewhat Very At All Useful Uncertain Useful Usoful 1 2 3 4 5 Food Safety and Quality Issue at the Knowledge Stage \* Of No Uce **Channels of Information** Very Usaful At All 1 2 3 4 5 Radio T.V. Video Tape Newspaper(s) Newsmagazine(s) Newslotter(s) Group Demonstration/ Field day(s) **Extension** Agent(s) Salesperson(s) Relative(s) Friend(s) Neighbor(s) Local Leader(s) Book(s)/ Library(ies) Class(es)/ Course(e) Billboard(s) Seminar(s) Conference(s) Other (Specify)

Please use the scale below when ranking each channel.

The Knowledge Stage of adoption is when an individual first becomes aware of an issue and gains general understanding of that issue.

3. Please rank the following channels of information according to their usefulness in improving your awareness and knowledge about the Water Quality issue.

Somewhat Very Of No Use Not Very Uncertain Useful Useful At All Usoful 2 3 4 5 1 Water Quality Issue at the Knowledge Stage \* Of No Use Very **Channels of Information** Useful At All 1 2 3 a, 5 Radio T.V. Video Tape Newspaper(s) Newsmagazine(s) Newsletter(s) Group Demonstration/ Field day(s) Extension Agent(s) Salesperson(s) Relative(s) Friend(s) Naighbor(s) Local Leader(e) Book(s)/ Library(ies) Class(es)/ Course(s) Billboard(s) Seminar(s) Conference(s) Other (Specify)

Please use the scale below when ranking each channel.

 The Knowledge Stage of adoption is when an individual first becomes aware of an issue and gains general understanding of that issue. 4. Please rank the following channels of information according to their usefulness in improving your awareness and knowledge about the Youth and Families at Risk issue.

Of No Use At All 1	Not Very Useful 2	Uncertain 3	S U 4	omewi seful	181	Very Useful 5		
Youth and families at Risk Issue at the Knowledge Stage *								
Channels of Information Of No Use At All						Very Useful		
	<del></del>	1	2	3	4	5		
Radio								
Τ.V.	an Mademan Na <u>an an a</u>	1940 C						
Video Tape								
Newspaper(s)						,		
Newsmagazin	Ð (G)							
Newsletter(s)	alanan katik <u>i sa ta ak</u> iki ma							
Group Demon	stration/ Field day(s)		<u> </u>					
Extension Age	nt(s)		<u> </u>					
Salesperson(s)								
Relative(s)								
Friend(s)								
Neighbor(s)								
Local Leader(e	) )							
Book(s)/ Libra	ry(ias)							
Class(es)/ Cou	irs6(s)							
Billboard(s)	and the second state of the state			ļ				
Seminar(s)	an a							
Conference(s)								
Other (Specify	/)							

Please use the scale below when ranking each channel.

\* The Knowledge Stage of adoption is when an individual first becomes aware of an issue and gains general understanding of that issue.

5. Please rank the following channels of information according to their usefulness in improving your awareness and knowledge about the **Rural and Urban Interface** issue.

Of No Use At All 1	Not Very Useful 2	Uncertain 3	Somewhat Useful 4			Very Useful 5		
Rural and Urban Interface issue at the Knowledge Stage *								
Channels of	f Information	Of No Use At All				Very Useful		
	na mangang pangana ang kang kang kang kang kang kang	1	2	3	4	5		
Radio								
T.V.			ļ					
Video Tape								
Newspaper(s)								
Newsmagazine	o(6)							
Newsletter(s)	and in the court of the state of the							
Group Demons	stration/ Field day(s)							
Extension Age	nt(s)	n a sense di sele ca data di Antonio di Sense a sense serre da dese a sense recent						
Salesperson(s)								
Relative(s)								
Friend(s)								
Neighbor(s)								
Local Leader(s	)							
Book(s)/ Librar	ylios)		ļ					
Class(es)/ Cou	raa(s)							
Billboard(s)			L					
Seminar(s)				ļ				
Conference(s)								
Other (Specify	·)							

Please use the scale below when ranking each channel.

\* The Knowledge Stage of adoption is when an individual first becomes aware of an issue and gains general understanding of that issue.

# III. Useful Channels of Information at Persuasion Stage

6. Please rank the following channels of information according to their usefulness in helping you form definite attitudes about the Food Safety and Quality issue.

Of No Use At All	Not Very Useful 2	Uncertain 3	Somewhat Somewhat artain Usoful 4			Very Useful 5		
Food Safety and Quality Issue at the Persuasion Stage **								
Channels of	f Information	Of No Use At All				Very Uaetul		
		1	2	3	â	5		
Radio								
т.v.								
Video Tape	an a							
Newspaper(s)								
Newsmagazine	9(6)							
Newsletter(s)								
Group Demons	stration/ Field day(s)							
Extension Age	nt(s)							
Salesperson(s)	ananan karana ya yang panta minang mang karang karang mang mang mang karang mang mang karang mang mang mang ma							
Relative(s)								
Friend(s)	an de states parties et com a su science en management de contracte activités y compares a							
Neighbor(s)	n a de la compañía d							
Local Leader(s	)					No. of Concession, Name		
Book(s)/ Librar	V(ies)							
Class(es)/ Cou	reo(s)							
Billboard(s)								
Seminar(s)								
Conference(s)								
Other (Specify	)							

Please use the scale below when ranking each channel.

\*\* The Persuasion Stage of adoption is when the individual forms a favorable or unfavorable attitude about an issue.

7. Please rank the following channels of information according to their usefulness in helping you form definite attitudes about the Water Quality issue.

Somewhat Of No Use Not Very Very At All Usoful Uncertain Useful Useful 2 3 4 1 5 Water Quality Issue at the Persuasion Stage \*\* Of No Use **Channels of Information** Very At All Useful 1 2 3 4 5 Radio **T.V**. Video Tape Newspaper(s) Newsmagazine(s) Newsletter(s) Group Demonstration/ Field day(s) Extension Agent(s) Salesperson(s) Relative(s) Friend(s) Neighbor(s) Local Leader(s) Book(s)/ Library(ies) Class(es)/ Course(s) **Billboard(s)** Seminar(s) Conference(s) Other (Specify)

Please use the scale below when ranking each channel.

•• The Persuasion Stage of adoption is when the individual forms a favorable or unfavorable attitude about an issue.

8. Please rank the following channels of information according to their usefulness in helping you form definite attitudes about the Youth and Families at Risk issue.

Of No Usø At All 1	Not Very Useful 2	Uncertain 3	S U 4	cmewi seful	nət	Very Useful 5		
Youth and Families at Risk Issue at the Persuasion Stage **								
Channels of	f Information	Of No Use At All				Very Useful		
		1	2	3	4	5		
Radio								
Τ.V.		unionen automotoria de la constitución de la constitución de la constitución de la constitución de la constitu						
Video Tape	an ang mang sa kanang mang mang mang mang mang mang sa kanang kanang mang mang sa kanang sa kanang mang sa kana							
Newspaper(s)	and in the second system and the second s							
Newemagazin	ə(6)					New York Control of Co		
Newslatter(s)	an faith fha fan an gall ga gan an a							
Group Demon	stration/ Field day(s)							
Extension Age	nt(s)	ang pang pang pang pang pang pang pang p						
Salesperson(s	)			ļ				
Relative(s)	ara and <sub>by</sub> the first of the second							
Friend(s)	an an de la la superior de la superi							
Neighbor(s)								
Local Leader(s	)							
Book(s)/ Libra	ry(ies)							
Class(es)/ Cou	Irse(s)							
Billboard(s)	an da ka ding sananjan gang dipang karan sina dipanja ( ka karan dipanja di ka karan dipanja di karan dipanja d					والمحمد والمحمد المراولين وحد		
Seminar(s)				L				
Conference(s)	an de seus de la companya de la comp							
Other (Specify	1)							

Please use the scale below when ranking each channel.

•• The Persuasion Stage of adoption is when the individual forms a favorable or unfavorable attitude about an issue.

9. Please rank the following channels of information according to their usefulness in helping you form definite attitudes about the **Rural and Urban Interface** issue.

Of No Use At All 1	Not Very Useful 2	Uncertain 3	S U 4	omewł seful	ıðt	Very Useful 5				
Rural and Ur	Rural and Urban Interface Issue at Persuasion Stage **									
Channels of	f Information	Of No Use At All				Very Useful				
		1	2	3	4	5				
Radio	na en persona de la construcción de Na construcción de la construcción d									
T.V.			ļ							
Video Tepe				ļ						
Newspaper(s)										
Newsmagezine	9(8)									
Newsletter(s)	ayan yanan <sup>1</sup> 11 mayo ku ana ana ana dan Cini Sini <sup>na</sup> Watan <mark>na yang ang ang ang ang ang ang ang ang ang </mark>									
Group Demon	stration/ Field day(e)									
Extension Age	nt(s)									
Salesperson(s)	) 									
Relative(s)	والمحافظة والمحافظ									
Friend(s)	and a second second state of the second state of the second second second second second second second second s		ļ							
Neighbor(s)	a na sa ang ang ang ang ang ang ang ang ang an									
Local Leader(a	) }									
Book(s)/ Libre	ry(ioc)									
Class(es)/ Cou	1786(8)									
Billboard(s)				ļ						
Seminar(s)										
Conference(s)	1994 - 1797 7 12 / TEATER OF GOOD FOR AN									
Other (Specify	y)									

Please use the scale below when ranking each channel.

\*\* The Persuasion Stage of adoption is when the individual forms a favorable or unfavorable attitude about an issue.

## IV. Preferred Channels of Information at Knowledge Stage

10. Please rank the following channels based upon how you prefer to receive information about Food Safety and Quality, Water Quality, Youth and Families at Risk and Rural and Urban Interface issues at the <u>Knowledge Stage</u> of adoption.

Please use the scale below when ranking each channel.

Not Preferred At All 1	Not Very Preferred 2	Uncert 3	ain	Som Prefe 4	ewhat srred		Vary Preferred 5
Channels of Inf Knowledge Sta	ormation at the ge <sup>e</sup>		Not Prei At All	forred		Pre	Very eferred
	yymathal 1 mae'r gollar yw lladd y gol yn gol y gol yn gol yw yn arwyn a rwyn gol yw yr	Received and the second second	1	2	3	4	5
Listening to Ra	dio						
Watching T.V.							
Watching Video	о Тере						
Reading News	aper(s)						
Reading Newsr	nagazine(c)			1	<u> </u>		
Reading News	otter(s)	dalah marakatan katala					
Visiting Damon	stration Site(s)	Ryperdament village billing billing					
Contacting Ext	ension Agent(s)						
Contacting Sale	esperson(s)	Roland Manager				ļ	
Asking Relative	)(6)	Code and a code Second code of		ļ			
Discussing Wit	h Friend(c)						
Asking Neighbo	or(8)			<u> </u>			
<b>Discussing Wit</b>	h Local Leuder(s)	and the second second and second and					
Reading Book(a	)/or Visiting Library	(iss)					
Attending Clas	s(es)/ Course(s)	an a		ļ			
Reading Billbos	rd(s)	in an	-	ļ			
Attending Sem	iner(s)/ Workshop(s	)					
Attending Cont	lerence(s)	an a	over denne bij mar de Brennekov				
Other (Specify)	)						

\* The Knowledge Stage of adoption is when an individual first becomes aware of an issue and gains general understanding of that issue.

## V. Preferred Channels of Information at Persuasion Stage

**11.** Please rank how you prefer to receive information about Food Safety and Quality, Water Quality, Youth and Families at Risk and Rural and Urban Interface issues at the <u>Persuasion Stage</u> of adoption.

7

Please use the scale below when ranking each channel.

Not Preferred At All 1	Not Very Preferred 2	Uncort 3	Somew ain	vhat Prefe 4	Ve prrod	) <b>ry</b>	Preferred 5	
Channels of Inf Persuasion Stag	ormation at the Je ••		Not Preferred At All			Very Preferred		
na se	anna y serie da su		1	2	3	4	5	
Listening to Rad	lio							
Watching T.V.	unitary and the boundary waves and an appropriate the boundary second second second second second second second				 			
Watching Video	Tape							
Reading Newsp	aper(s)		annan a shannan a na an	ļ				
Reading Newsn	nagazine(s)		0	-	L			
Reading Newsle	attor(s)				L			
Visiting Demon	stration Site(s)			ļ				
Contacting Exte	ension Agent(s)		anging of any discovery of a source of					
Contacting Sale	seperson(s)							
Asking Relative	(6)					 		
Discussing With	n Friend(e)		1900/2010/1010/1010/1010/1010/1010/1010/					
Asking Neighbo	ər(8)		alasadi sa ana sa a					
Discussing Wit	h Local Leader(s)							
Reading Book(a	)/or Visiting Library(	ies)						
Attending Class	s(es)/ Course(s)							
Reading Billboa	rd(s)							
Attending Semi	inar(s)/ Workshop(s)		a tana amin'ny soratra amin'ny soratra					
Attending Conf	erenca(s)		a Maria Maria da Kato (M. J. S. A. S.					
Other (Specify)								

\*\* The Persuasion Stage of adoption is when the individual forms a favorable or unfavorable attitude about an issue.

## VI Kent County Related Issue(s).

12. Please list any other issue(s) you believe are important in Kent County.

1. 2.

3. 4. VII.Demographic Information

The following questions are designed to provide basic demographic information for analysis of data. Please check the appropriate response for each question.

13. What is your gender?

\_\_\_(1) Male \_\_\_(2) Female

- 14. What is your race?
  - \_\_\_(1) White
  - \_\_\_(2) Black
  - \_\_\_(3) American Indian, Eskimo or Aleut
  - \_\_\_(4) Asian or Pacific Islander
  - \_\_\_(5) Hispanic Origin (of any Race)
  - \_\_\_(6) Other Race
- 15. What is your level of education?
  - \_\_\_(1) No education or some elementary school education
  - (2) Some high school education
  - \_\_\_(3) High school diploma
  - \_\_\_(4) Some college education
  - (5) College or graduate education
- 16. What is your yearly income?
  - (1) Unemployed
  - \_\_\_(2) Less than \$10,000
  - \_\_\_(3) \$10,000 49,999
  - \_\_\_(4) \$50,000 or more
- 17. How would you categorize the setting in which you live?
  - \_\_\_(1) Urban setting
  - \_\_\_(2) Suburban setting
  - \_\_\_(3) Rural setting
- 18. Please indicate your age? \_\_\_\_ Years

Please return this questionnaire in the envelope provided, no later than August 1, 1992.

THANK YOU FOR YOUR TIME AND COOPERATION.
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