

# Measuring the Public Value of a Land-Grant University

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## Abstract

*Land-grant institutions are dependent on public funding to achieve their tripartite mission of teaching, research, and extension. This public support or the “public value” for land-grant institutions is crucial for the continued development and improvement of services and programs. The purpose of this study was to gather the perceptions and opinions of the University of Florida’s Institute of Food and Agricultural Sciences’ (IFAS) key stakeholders regarding its public value. The sample (N = 707) included community leaders and agricultural producers across the state. Nearly two-thirds had used IFAS programs or services and the majority reported being either very familiar or somewhat familiar with IFAS. Public value was measured using a constructed index. Results found that respondents who used IFAS programs or services provided a higher public value score than those who had not. Also, as respondents indicated higher levels of familiarity, the public value score increased. The type of respondent (i.e. producer or leader) was not a significant predictor of public value score. Overall, respondents indicated the most support for teaching, followed by research and extension. The results from this study provide justification for the continued support of IFAS programs and services. To ensure continued success, more must be done to encourage support for the three areas of IFAS among stakeholder groups. Future research should be conducted in other states to assess the public value of land-grant institutions and each component of the tripartite mission.*

## Introduction/Theoretical Framework

Agriculture has a long-standing tradition of valuing information and technology transfer – it is the basis of the land-grant system itself. But the dawning of the information age and the knowledge economy has changed the needs of rural citizens, stakeholders and society as a whole. In addition to safe and secure food production systems, members of the general public now must look to the land grant for solutions to a wide variety of complex problems, such as the growing need for information-literate citizens and globally-ready graduates, more sustainable agricultural production, environmentally sound stewardship of natural resources, ongoing development of rural citizens, and greater provision of economic opportunity. While many believe the land-grant system remains uniquely positioned to address these needs and provide innovative solutions, doing so today requires the ability to generate a sense of the value of its programs and services among its many publics—both traditional and nontraditional (Kellogg, 1999).

When land-grant institutions were first established by the Morrill Act of 1862, they were intended to provide education in common professions of the time such as agriculture, home economics, and mechanical arts. In following years, the establishment of agricultural experiment stations (Hatch Act of 1887) and the cooperative extension service (Smith-Lever Act of 1914) further emphasized the

role of land-grant institutions to provide teaching, research, and outreach. The integration of these three areas “is extremely valuable because of the linkages it can engender among science, learning, and public service and must therefore be renewed and strengthened” (National Research Council, 1996, p. 37). Herren and Hillison (1996) stated that the academic field of agricultural education has been influenced by its inclusion in the tripartite land-grant mission because educators and students have exposure to both agricultural researchers and extension professionals. Regarding the research component of the tripartite mission, Martin (2001) said land-grant institutions should be instrumental in acquiring public support and trust in research endeavors. Additional research in agriculture is essential to discover scientific answers that will further advance the industry and meet future food and fiber needs (Buchanan, 2007).

The extension component serves as the public outreach branch of land-grant institutions and is therefore often empirically investigated to determine how well its identified publics are being served. Historically, land-grant institutions have benefited from a close association to their stakeholders, but demographic changes have shifted the focus from primarily rural audiences to more urban and suburban populations. This change in audience demographics has decreased the awareness and understanding of the land-grant institution’s tripartite mission even among identified stakeholders (Kellogg, 1999). In a comprehensive evaluation of the U.S. Cooperative Extension Service, Warner and Christenson (1984) found that 40% of the U.S. population was aware of extension programs, with 27% of U.S. households utilizing these programs or services. Support for extension programs was positively influenced by several factors including clientele involvement, experience with extension programs, and level of satisfaction (Warner & Christenson, 1984). Warner, Christenson, Dillman, & Salant (1996) replicated this study and found an increase in public awareness from 40% to 45%, but a one percent drop in utilization with 26% of respondents saying they or a member of their immediate family had used extension services. Respondents valued all three aspects of the land-grant university with the most support for the teaching component, followed by extension, then research (Warner et al., 1996).

McGrath (2006) argued that land-grant institutions must integrate their teaching, research, and engagement activities to become excellent institutions of higher education. In the future, land-grant institutions need to balance the three components to guarantee the same level of positive public support traditionally garnered (Fribourg, 2005). As employees of public institutions supported through taxpayer support and governmental efforts, the goal of those who work in public higher education should be to create *public value* for the services and activities conducted. Public value is created when society as a whole finds value in a public service or program – this includes both those who directly benefit from the service and those who do not (Moore, 1995). The value a non-profit or governmental organization intends to produce is established by its mission. Although it may require financial resources to achieve this mission, that is not the sole motivation for the organization – the mission may be to feed the hungry, provide for the disadvantaged, or educate the young and old. The mission then defines the value of the organization and serves as the metric by which to measure past performance and set benchmarks for future goals (Bryce, 1992). As Moore (1995) explained, the term “public value” is difficult to define because the value of public programs is often ambiguous and difficult to measure.

Public value is derived from both the benefits created and the resources expended by the public institution. The benefits can be things people personally benefit from or things they value such as national pride, concern for the environment, fairness, or caring for the underprivileged. Resources can include money (i.e. taxes), time, materials and legal authority (through due process, habeas corpus,

freedom of information). Creating public value requires public organization leaders to find a way to maximize benefits using the available resources (Moore, 1995).

Moore (1995) outlined fundamental areas public organization leaders need to address in order to create public value, which Try (2008) categorized as: “(1) Services – cost effective provision of high quality services; (2) Outcomes – achievement of desirable end results; and (3) Trust – development and maintenance of a high level of trust between citizens and government” (p. 24). The Strategic Triangle Model (Moore, 1995, 2000) depicts three general tests organization leaders should use in order to develop a strategy for the public sector. First, is the strategy *substantively valuable*? This test is met when the clients, stakeholders, and administrators judge the products or services produced as valuable and at low cost. Second, is the strategy *legitimate and politically sustainable*? This question is addressed when the organization can draw funding and support from the governing entities to which it is accountable. Third, is the strategy *operationally and administratively feasible*? This final test is met when the organization can complete the proposed, valued activities or partner with other organizations to accomplish shared goals (Moore, 1995, 2000).

In Florida, the University of Florida (UF) is the land-grant university and UF’s Institute of Food and Agricultural Sciences (IFAS) comprises the tripartite mission of the land-grant enterprise. Recent state budget restraints have focused more attention on IFAS services in all three areas – research, teaching, and extension. As Putnam (2008) explained, the University of Florida needs to continue to support the land-grant mission on which it was founded. Annual customer satisfaction surveys of Florida Cooperative Extension indicate a high level of satisfaction, with 98% of clientele reporting being either satisfied or very satisfied with the service they received (Terry & Israel, 2004). However, this study focused solely on the extension component of IFAS, and was conducted only with those who utilized the extension service. It is currently unknown how well IFAS’ key stakeholders view the services and programs within all three components of IFAS.

### **Purpose/Objectives**

The *National Research Agenda (NRA): Agricultural Education and Communication 2007-2010* (Osborne, n.d.) identifies the need to understand stakeholders’ views and perceptions of the agri-food system and agricultural and extension education. The purpose of this study was to gather the perceptions and opinions of key stakeholders, including those who may not utilize IFAS services. The objectives of the study were to: (1) determine the use or non-use of IFAS programs and services, (2) determine the level of familiarity with IFAS programs or services, (3) measure the impact of familiarity with IFAS and use of IFAS programs on IFAS’ public value, and (4) explore the level of support stakeholder participants were willing to allocate for each component of the land-grant mission.

### **Methods**

The first step in the data collection process was to identify key stakeholder groups using a modified Delphi study. A purposive sample of IFAS administrators, unit heads, and senior faculty (N=48) were asked to identify key stakeholder segments that would then be sampled and surveyed for a subsequent environmental scan. Environmental scanning acquires and uses information about trends, events, and relationships in an organization’s external environment to assist management in planning the organization’s future course of action.

Findings identified four main audience segments: agricultural producers, community leaders (including city and county government professionals), local and regional media, and state legislative

aides. Once the audience segments had been identified, the next phase of the research effort focused on assessing perceptions of the top two ranked audience segments – agricultural producers and community leaders within Florida.

A population list for both producers and leaders was developed from a number of existing data sources. To obtain a representative group of producers, researchers utilized databases of commodity association members, stakeholders and clientele, supplemented with a purchased list of agricultural producers. For the leaders group, database sources included extension advisory councils, institutional stakeholders, city/county professional association members, and local chambers of commerce members drawn from 10 Florida counties. With a view toward representing the state's rapidly evolving population dynamics, urban rural interface and shifting agricultural base, county population rank, percent growth, total value of agricultural sales, agricultural sales rank and the ratio of average population to agricultural sales were used to rank counties. From these database sources, a total list of 2,452 producers and 2,030 leaders were identified. Care was taken to include all relevant representational groups and resulting respondent demographics were in accordance with statewide census data.

Data were collected using telephone survey methods, conducted by a market research firm using computer assisted telephone interviewing (CATI) system technology. The CATI system uses random digit dialing to extract random samples from the lists loaded into the system. CATI assists in preventing error by prompting the telephone interviewers to ask questions previously keyed into the system based on built in skip patterns so as to eliminate out of range responses. To address non-response error specifically, telephone numbers not answered on the first call are re-entered into the sample and callbacks are automatically programmed to be called at different times on weekdays and weekends up to a certain number of times in an effort to yield a completion.

Respondents provided information about their awareness, use, and perceptions of IFAS and its tripartite mission (i.e. teaching, research, and extension), as well as their familiarity with and use of its specific components and programs. Respondents also provided gender, age, education, and employment demographic information. Trained telephone interviewers followed a researcher-developed questionnaire that was the same for both sample groups. The instrument was adapted from a previous study of IFAS stakeholders and a national study of perceptions toward land-grant universities (Warner et al., 1996) to include items relevant to the state as well as items that have more national relevance. Before administration, the instrument was reviewed by a panel of experts for face and content validity.

Interviewers contacted agricultural producers from August 6-21, 2007. Each number was attempted four times. The producers' accessible sample had 1,411 usable numbers with 352 survey completions for a response rate of 24.9%. Interviewers contacted community leader respondents from August 21-September 4, 2007. The sample list had 1,766 usable numbers with 355 survey completions for a response rate of 20.1%. The resulting response rates, although low, were deemed acceptable for the purposes of this study, which are typical of non-incentivized samples from broad population groups. Recent public opinion research has established that response rates among such groups have been declining over time (DeLeeuw & DeHeer, 2002). Addressing this issue, several recent studies suggest that lower nonresponse rates do not necessarily indicate nonresponse bias in survey results (Groves, 2006; Curtin, Presser & Singer, 2000; Keeter, et al, 2000; Merkle & Edelman, 20020). Miller and Carr (1997) address this on the basis of the contention that those who responded were the actual target audience for the study and are therefore more valuable and accurate than nonrespondent responses would be. According to the American Association for Public Opinion

Research (AAPOR), studies on the topic show that the least bias may actually come from surveys with lower response rates, due to potential self selection bias in surveys with higher “cooperation rates.” When response rates are low, however, AAPOR advocates for additional measures of quality of data being reported, including low levels of missing data and conformity with other research studies (AAPOR, 2009).

Data were analyzed using descriptive statistics to determine means, standard deviations, and percentages. Factor analysis was employed to build an index for Public Value. In addition, multiple linear regression was conducted to explore the ability of several explanatory variables to predict public value for IFAS.

**Dependent variables: Public Value Index, Funding Amount to IFAS Areas**

The Public Value dependent variable was an index based on nine items. Respondents were asked to indicate their level of agreement (from strongly disagree to strongly agree) on three descriptors of the tripartite mission of IFAS: research, extension, and teaching. For each of these areas, respondents indicated their response to three descriptive adjectives or phrases – “high quality,” “valuable,” “something I would use.” The descriptive phrases were selected after reviewing the major aspects of public value theory described by Moore (1995, 2000) and Try (2000). Reliability analysis for these nine items had a Cronbach’s alpha of .94. Principal component analysis indicated that the items form a unidimensional construct, which accounted for 67.1% of the items’ variance. Table 1 displays the factor loadings that were used to compute the Public Value Index for IFAS.

**Table 1**  
*Factor Loadings for Items Measuring IFAS Public Value Index (N=617)*

Items	
Research is of high quality	.78
Research is valuable	.84
Research is something I would use	.82
Teaching is of high quality	.78
Teaching is valuable	.84
Teaching is something I would use	.81
Extension is of high quality	.79
Extension is valuable	.86
Extension is something I would use	.84
Eigenvalue	6.04
Percent of Variance Explained	67.10
Cronbach’s Alpha	.94

Extraction Method: Principal Component Analysis

In addition to the construction of the Public Value Index, respondents were also asked to allocate \$100 between the teaching, research, and extension areas. The funding amount allocated to each area comprised another dependent variable. This question was asked on a previous study to measure the public value of the components of a land-grant university (Warner et al., 1996). In addition, this

type of question has been asked in previous studies for the purpose of determining how respondents would allocate public funds among a number of possible policy options (Ison, 2000) or public projects (Thorpe, Hills, & Jaensirisak, 2000).

### **Independent variables: Use of IFAS Programs or Services, Familiarity with IFAS, and Type of Respondent**

The use of IFAS Programs or Services is a dichotomous variable in which respondents indicated if they had ever used IFAS programs or services (measured by responding yes or no). Familiarity of IFAS was assessed by asking how familiar respondents were as to the research, education, and extension work done by IFAS (measured on an ordinal scale of very familiar, somewhat familiar, or not at all familiar). Finally, the Type of Respondent refers to categorization as either a member of the producer or leader sample group.

### **Control variables: Demographics**

Several demographic variables were collected including gender, ethnicity, age, years living in Florida, education, University of Florida alumni, College of Agricultural & Life Sciences alumni, and employment in the agriculture industry. These are not theorized to influence the dependent variables; therefore, they are considered control variables.

### **Results/Findings**

Respondents ( $N = 707$ ) were primarily male ( $n = 464, 65.6\%$ ), white ( $n = 638, 90.2\%$ ), with either a bachelor's ( $n = 264, 37.3\%$ ) or graduate degree ( $n = 151, 21.4\%$ ). Of those with a college degree, 110 (15.6%) are alumni of UF and 65 (9.2%) graduated from the College of Agricultural & Life Sciences (CALs). The average age was 54 years old and more than half ( $n = 414, 58.6\%$ ) said they work in the agriculture industry. On average, respondents had lived in Florida for 40 years.

Descriptive analysis of the independent variables indicated 72.8% ( $n = 515$ ) of respondents had used IFAS programs or services while 27.2% ( $n = 192$ ) had not. When asked how familiar respondents were of IFAS, 30.3% ( $n = 214$ ) said they were very familiar, 43.8% ( $n = 310$ ) said they were somewhat familiar and 25.9% ( $n = 183$ ) said they were not at all familiar or did not know. The type of respondent variable refers to which group a respondent belongs – producer (49.8%,  $n = 352$ ) or leader (50.2%,  $n = 355$ ). Chi-square analysis of the Use of IFAS variable found no difference by type of respondent ( $X^2 = 1.276, df = 1, p = .259$ ). However, the groups were significantly different in their Familiarity of IFAS ( $X^2 = 6.101, df = 2, p = .047$ ) with the leaders group reporting more very familiar ( $n = 122$ ) responses compared to the producers group ( $n = 92$ ). The producers group had more respondents who were somewhat familiar with IFAS ( $n = 167$ ) compared to the leaders group ( $n = 143$ ).

Based on 617 complete responses, initial descriptive analysis of the Public Value Index dependent variable found a mean score of 30.25 ( $SD = 4.82$ ) with a minimum value of 13.16 and maximum of 36.84. A t-test was also used to determine if there was a significant difference in the Public Value Index score depending on respondent type, use of IFAS, and familiarity with IFAS. The two respondent groups differed significantly ( $t = -5.47, p = .000$ ) in their IFAS Public Value Index scores with the leaders giving IFAS a higher score ( $M = 31.42, SD = 4.20$ ) than the producers ( $M = 29.37, SD = 5.07$ ). Results also found a significant difference between the two groups ( $t = -15.58, p = .000$ ) with those who had used IFAS providing an average Public Value Index score seven points higher

( $M = 31.52$ ) than those who had not used IFAS ( $M = 24.95$ ). A one-way ANOVA conducted to explore the level of familiarity with IFAS on the Public Value Index score found the three groups were significantly different ( $F_{2,614} = 154.72, p = .000$ ). Respondents who were very familiar provided the highest average Public Value Index score ( $M = 33.03$ ), followed by somewhat familiar ( $M = 30.11$ ), then not at all familiar ( $M = 24.45$ ).

Simultaneous multiple linear regression was used to examine the predictive effects of Familiarity with IFAS, Use of IFAS, and Type of Respondent on the Public Value Index. Examination of variable residuals indicated five outliers that were removed for subsequent regression analysis. Table 2 displays the results of this analysis both with and without the outliers. The overall model is significant both with ( $F = 128.526, p = .000$ ) and without ( $F = 137.739, p = .000$ ) outliers. The adjusted  $R^2$  value for the model indicates a substantial amount of the variance in Public Value Index score is explained using these predictors. The model with outliers explains 38.5% of the variance and the model without outliers explains 40.4% of the variance. The results indicate that respondents' scores of IFAS' public value was significantly and positively associated with more familiarity of IFAS and use of IFAS program or services. Respondents who use IFAS programs or services provided a higher Public Value Index score than those who have not. Also, as respondents indicated higher levels of familiarity, the Public Value Index score increased. The type of respondent (i.e. producer or leader) was not a significant predictor of Public Value Index score.

**Table 2**  
*Summary of Multiple Linear Regression Analysis for Variables Predicting Public Value Index Scores*

Explanatory Variable	Public Value Index							
	With outliers (N=617)				Without outliers (N=612)			
	B	SE B	$\beta$	$p$	B	SE B	$\beta$	$p$
Familiarity w/ IFAS	2.690	.280	.379	.000	2.695	.267	.392	.000
Use of IFAS	3.955	.466	.321	.000	3.947	.446	.330	.000
Type of Respondent	.246	.325	.025	.450	.156	.311	.017	.617
Adjusted $R^2$				.385				.404
F				128.526				137.739
Model $p$ value				.000				.000

Further analysis explored the demographic variables' correlations with the Public Value Index dependent variable. Although several variables are significantly correlated, only two had moderate correlation strengths with the Public Value Index: Familiarity with IFAS  $r(612) = .563, p < .01$  and Use of IFAS  $r(612) = .533, p < .01$ . Demographic variables are either only weakly correlated or the correlation was not significant.

Additional simultaneous regression models were used to explore the possible predictive influence of the demographic variables on the Public Value Index. A regression model with the demographic variables (excluding ethnicity and UF Alumni) was significant ( $F_{7,611} = .5487, p = .000$ ). As Table 3 displays, the addition of Use of IFAS, Familiarity and Type variables further improved the model ( $F_{10,605} = 39.849, p = .000$ ).

**Table 3**

*Summary of Multiple Linear Regression Analysis for Demographic Variables Predicting Public Value Index Scores.*

Explanatory Variable	Public Value Index				Adjusted R <sup>2</sup>
	B	SE B	β	Sig.	
Gender	.795	.417	.078	.057	.049
Age	-.007	.018	-.016	.713	
Years Living in Florida	.032	.013	.118	.014	
Education	.464	.215	.095	.031	
UF Alumni	.962	.820	.075	.241	
CALS Alumni	1.178	.949	.075	.215	
Work in Ag Industry	.757	.427	.074	.077	
Gender	.782	.334	.077	.020	
Age	-.011	.014	-.028	.445	
Years Living in Florida	.013	.011	.047	.227	
Education	-.273	.177	-.056	.123	
UF Alumni	.362	.654	.029	.581	
CALS Alumni	.529	.759	.034	.486	
Work in Ag Industry	.640	.408	.063	.118	
Familiarity with IFAS	2.539	.292	.358	.000	
Use of IFAS	3.910	.471	.317	.000	
Type of Respondent	.742	.400	.077	.064	

To further address the research purpose, participants were asked to allocate \$100 to each of the three areas within IFAS: teaching, research, and extension. The range varied from \$0 to \$100 in each area. Respondents allocated a similar amount to teaching ( $M = 34.45$ ,  $SD = 19.07$ ) and research ( $M = 34.61$ ,  $SD = 18.12$ ) while extension received the lowest amount ( $M = 29.38$ ,  $SD = 17.07$ ).

T-tests were conducted to determine if the amount allocated to each area of IFAS varied according to the type of respondent and their use or nonuse of IFAS programs and services. Comparison of funding amounts to each area of IFAS between producers and leaders (Table 4) indicated a significant difference between the two groups in their funding amounts for teaching ( $t = -2.384$ ,  $p = .017$ ) and research ( $t = 3.266$ ,  $p = .001$ ) while there was not a significant difference in the amount allocated to extension ( $t = -.578$ ,  $p = .564$ ).

**Table 4**

*Comparison of Average Dollar Amount Allocated to IFAS Areas for Producers and Leaders*

	Producers			Leaders			<i>t</i>	df	<i>p</i>
	N	Mean	SD	N	Mean	SD			
Teaching	352	32.74	19.301	354	36.15	18.712	-2.384	704	.017
Research	352	36.84	19.770	354	32.41	16.050	3.266	704	.001
Extension	352	29.01	16.252	354	29.75	17.870	-1.483	704	.564

Table 5 displays additional t-tests that explored the difference between respondents who had used or not used IFAS programs and services and the amount each allocated to the three IFAS areas. Results found that respondents who had used IFAS programs or services allocated a significantly different amount to each area of IFAS than nonusers. The amount allocated to teaching was higher for those who had not used IFAS than for those who had ( $t = 3.22, p = .001$ ). However, those who had used IFAS allocated more money to research ( $t = -2.47, p = .014$ ) and extension ( $t = -4.01, p = .000$ ) than those who had not used IFAS.

**Table 5**

*Comparison of the Average Dollar Amount Allocated to IFAS Areas for Those Who Have Used or Not Used IFAS Programs and Services*

	Used IFAS			Not Used IFAS			<i>t</i>	df	<i>p</i>
	N	Mean	SD	N	Mean	SD			
Teaching	514	32.74	17.22	186	38.62	22.63	3.22	698	.001
Research	514	35.71	17.99	186	31.90	18.15	-2.47	698	.014
Extension	514	30.96	16.66	186	25.17	17.47	-4.01	698	.000

The respondents' allocations of funding to each of the three IFAS areas were further analyzed using one-way ANOVAs. Table 6 displays the means, standard deviations and sample sizes. Overall, respondents differed significantly in the allocation amounts depending on their level of familiarity with IFAS. Respondents who were not at all familiar with IFAS allocated the greatest amount to teaching and the least to extension. Respondents who were very familiar with IFAS allocated the most to research, followed by extension then teaching. The amount of money allocated to extension increased in conjunction with an increase in familiarity with IFAS.

**Table 6**

*Average Dollar Amount Allocated to IFAS Areas by Level of Familiarity with IFAS*

	Not at all Familiar			Somewhat Familiar			Very Familiar			F	<i>p</i>
	N	Mean	SD	N	Mean	SD	N	Mean	SD		
Teaching	181	38.85	23.89	310	33.96	17.14	213	31.34	16.40	7.89	.000
Research	181	31.96	18.65	310	35.10	17.50	213	36.33	18.33	3.03	.049
Extension	181	24.77	16.62	310	29.97	17.48	213	32.33	16.13	10.22	.000

### Conclusions/Implications/Recommendations

For nearly 150 years, land-grant institutions across the nation have strived to meet the needs of their identified audiences. However, changes in demographics have created a decreased understanding and awareness of the original purpose of the tripartite mission of teaching, research, and extension among stakeholders (Kellogg, 1999). It was noted more than 10 years ago that colleges of agriculture at land-grant universities need to adapt to the challenges presented by a changing clien-

tele base, a multifaceted agricultural and food system, and the federal funding environment (National Research Council, 1996). As a public institution, public support or the “public value” for land-grant institutions is crucial for the continued development and improvement of services and programs (DeBord, 2005; McGrath, Conway, & Johnson, 2007). Moore (1995) said an organization’s public value can be difficult to measure, but it involves both people who benefit from the provided activities and those who do not. The current study sought to go beyond examining just the extension component of land-grant institutions and explore public perceptions and opinions of the entire enterprise, including teaching, research, and extension.

As Warner and Christenson (1984) previously found, respondents were overall more supportive of extension programs if they were involved, had experience, and were satisfied. In the current study, involvement and experience were jointly determined by asking if respondents had ever used IFAS programs or services and how familiar they were with IFAS. Results found that nearly three-quarters of respondents (73%) had used IFAS programs and were either very or somewhat familiar (74%). The current study did not explore the level of satisfaction with Florida Extension, which has been found to be very high in previous customer satisfaction studies (Terry & Israel, 2004).

To measure public value, an index was constructed based on scores regarding the quality, value, and usability of each area within IFAS – teaching, research, and extension.

Regression analysis indicated that Public Value Index scores increased as respondents’ level of familiarity increased and if they had used IFAS in the past. It is therefore important to continue to communicate what IFAS is and what it does throughout the state. Identified stakeholders need to be familiar with IFAS or utilize its sponsored services to continue to provide a positive Public Value Index score. This conclusion is in agreement with Putnam’s (2008) comment regarding the need for the University of Florida to provide continued support of the tripartite land-grant mission on which it was founded.

The second measure of public value was to examine how respondents allocated \$100 among the three areas within IFAS. Warner et al. (1996) found that respondents valued all three aspects of the land-grant university with the most support for the teaching component, followed by extension, then research. Respondents in the current study also allocated the greatest amount to teaching, but flipped the bottom two with extension receiving the lowest amount. Those who had not used IFAS programs and services allocated more money to the teaching aspect of IFAS than to research and extension. This choice may be based on the visibility of the University of Florida in the state as an education facility while the research and service aspects do not have the same recognition. Respondents who had used IFAS programs or services in the past were therefore more aware of what IFAS does and reflected that by allocating more money on the research and extension aspects. This is also supported by the data illustrating that respondents who were more familiar with IFAS allocated more money to extension than those who were not at all familiar. This indicates that increasing familiarity and use of IFAS programs should result in greater recognition and support of what IFAS does in all three aspects of the land-grant mission (teaching, research, and extension).

As looming budget cuts fuel concerns about the future of IFAS, the results from this study provide justification for the continued support of IFAS programs and services. Although having used IFAS services or being more familiar resulted in higher levels of public value, even those who were not identified as IFAS users or who were less familiar still demonstrated their support for what IFAS does. However, these findings do not support an attitude of contentment. To ensure continued success, more must be done to encourage support for the three areas of IFAS among stakeholder groups.

This study suggests that the land-grant system may be at a crossroads. Major changes in population demographics, technological systems, and resourcing of higher education have created major challenges that need to be addressed. Fribourg (2005) said in order to sustain governmental support, “the land-grant university needs to demonstrate that it cares about and is responsive to the needs and wants of people and their real-world problems. That is an integral part of the land-grant mission” (p. 41). It may be time for the land-grant university, so unique, responsive, and attuned to the needs of its clientele, to reinvent itself yet again so as to retain its public value with traditional stakeholders while actively engaging with, marketing to, and providing enhanced services for a greater segment of nontraditional constituents. As the population in rural communities declines and agricultural and natural resources production moves beyond traditional areas and issues, it becomes even more important for the land-grant system to proactively generate public goodwill and seek to create and maintain positive public value perceptions among its stakeholders.

Although this study does provide more explanation of how public value for a land-grant university can be measured, several limitations do exist. The low response rate introduces the potential for nonresponse bias. This study was based on a population of producers and leaders specific to Florida so care must be taken when generalizing to other states and populations. Although the demographics of respondents (primarily white, well-educated, older, and male) are restricted, they are similar to other studies of extension users and non-users (Boone, Sleichter, Miller, & Breiner, 2007; Radhakrishna, 2002).

Several recommendations can be derived from this study. Similar research should be conducted in other states to assess the public value of land-grant institutions and each component of the tripartite mission. Additional studies can also be used to further develop and refine the Public Value Index used in this study, with a view toward developing a standardized instrument that can be used broadly to measure public value in the land-grant context. Land-grant institutions should assess public value on a regular basis and utilize the findings to develop strategic plans aimed at enhancing public value perceptions. Finally, communicators at land-grant institutions should work to develop information/education strategies and materials for their audiences aimed at influencing perceptions of their land-grant’s public value. The finding that more familiarity with IFAS and the use of IFAS led to higher Public Value Index scores should serve as motivation to be even more proactive in communicating about land-grant activities that provide value to members of the public. Providing more information about land-grant institutions would help increase awareness, build support, and encourage use thereby strengthening the public value of land-grant institutions. Reinforcing the public value of land-grant institutions through continued and more strategic communication efforts would be especially beneficial in times of potential budget cuts and program closings and help land-grant institutions continue to meet the teaching, research, and extension needs of the future.

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## Keywords

Land-grant institution, public value, community leaders, agricultural leaders, tripartite mission, extension

## References

- American Association for Public Opinion Research (2009). Response rates—an overview. Retrieved March 24, 2009 from <http://www.aapor.org/responserateanoverview>
- American Association for Public Opinion Research. (2006). *Standard definitions: Final dispositions of case codes and outcome rates for surveys*. Retrieved April 9, 2008, from [http://www.aapor.org/uploads/standarddefs\\_4.pdf](http://www.aapor.org/uploads/standarddefs_4.pdf)
- Boone, K. M., Sleichter, L., Miller, R., & Breiner, S. (2007). Perceptions and preferences of extension programming and sources among extension users and non-users: 10 Kansas counties. *Journal of Extension*, 45(6). Retrieved March 17, 2009, from <http://www.joe.org/joe/2007december/rb1.php>
- Bryce, H. (1992). *Financial and strategic management for nonprofit organizations*. Englewood Cliffs, NJ: Prentice Hall.
- Buchanan, G. (2007, May 10). *Statement before the U.S. House Committee on Agriculture*. Retrieved September 30, 2007, from <http://agriculture.house.gov/testimony/110/h70510a/Buchanan.doc>
- Curtin, R., Presser, S., & Singer, E. (2000). The effects of response rate changes on the index of consumer sentiment. *Public Opinion Quarterly*, 64, 413-428.
- DeBord, K. (2005). Communicating program value of family life and parenting education programs to decision makers. *Journal of Extension*, 43(2). Retrieved December 15, 2008, from <http://www.joe.org/joe/2005april/iw2.shtml>
- DeLeeuw, E., & DeHeer, W. (2002). Trends in household survey nonresponse: a longitudinal and international comparison. In *Survey Nonresponse*, ed. Robert M. Groves, Don A. Dillman, John L. Eltinge, & Roderick J.A. Little, New York: Wiley, 288-302.
- Fribourg, H. (2005). Where are land-grant colleges headed? *Journal of Natural Resources and Life Sciences Education*, 34, 40-43.
- Groves, R., (2006). Nonresponse rates and nonresponse bias in household surveys. *Public Opinion Quarterly*, 70(5), 646-675.
- Herren, R.V., & Hillison, J. (1996). Agricultural education and the 1862 land-grant institutions: The rest of the story. *Journal of Agricultural Education*, 37(3), 26-32.
- Ison, S. (2000). Local authority and academic attitudes to urban road pricing: A UK perspective. *Transport Policy*, 7, 269-277
- Keeter, S., Miller, C., Kohut, A., Groves, R., & Presser, S., (200). Consequences of reducing nonresponse in an national telephone survey. *Public Opinion Quarterly*, 64, 125-148.
- Kellogg Commission on the Future of State and Land-Grant Universities. (1999, February). *Returning to our roots: The engaged institution*. Retrieved January 10, 2008, from <http://www.nasulgc.org/NetCommunity/Document.Doc?id=183>
- Martin, M. V. (2001). The land-grant university in the 21<sup>st</sup> century. *Journal of Agricultural and Applied Economics*, 33(2), 377-380.
- McGrath, D. M. (2006). The scholarship of application. *Journal of Extension*, 44(2). Retrieved December 15, 2008, from <http://www.joe.org/joe/2006april/a8.shtml>

- McGrath, D. M., Conway, F. D. L., Johnson, S. (2007). The Extension hedgehog. *Journal of Extension*, 45(2). Retrieved December 15, 2008, from <http://www.joe.org/joe/2007April/a1.shtml>
- Merkle, D., & Edelman, M, (2002). Nonresponse in exit polls: a comprehensive analysis. In *Survey Nonresponse*, ed. Robert M. Groves, Don A. Dillman, John L. Eltinge, & Roderick J. A. Little, New York: Wiley, 243-258..
- Miller, G. & Carr, A. (1997). Information and training needs of agriculture faculty related to distance education. *Journal of Applied Communications*, 81(1), 1-9.
- Moore, M. H. (1995). *Creating public value: Strategic management in government*. Cambridge, MA: Harvard University Press.
- Moore, M. H. (1995). *Creating public value: Strategic management in government*. Cambridge, MA: Harvard University Press.
- Moore, M. H. (2000). Managing for value: Organizational strategy in for-profit, nonprofit, and governmental organizations. *Nonprofit and Voluntary Sector Quarterly*, 29(1), 183-204.
- National Research Council. (1996). *Colleges of agriculture at the land grant universities: Public service and public policy*. Washington, D.C.: National Academy Press.
- Osborne, E. W. (Ed.) (n.d.). *National research agenda: Agricultural education and communication, 2007-2010*. Gainesville, FL: University of Florida, Department of Agricultural Education and Communication.
- Putnam, A. (2008, March 18). UF must not turn its back on its Land Grant mission. *The Gainesville Sun*.
- Radhakrishna, R. (2002). Measuring and benchmarking customer satisfaction: Implications for organizational and stakeholder accountability. *Journal of Extension* [online], 40(1). Retrieved March 17, 2009, from <http://www.joe.org/joe/2002february/rb2.php>
- Terry, B. D., & Israel, G. D. (2004). Agent performance and customer satisfaction. *Journal of Extension* [online], 42(6). Retrieved March 29, 2008, from <http://www.joe.org/joe/2004december/a4.shtml>
- Thorpe, N., Hills, P., & Jaensirisak, S. (2000). Public attitudes to TDM measures: A comparative study. *Transport Policy*, 7, 243-257.
- Try, D. (2008). Mind the gap, please: Using public value theory to examine executive take-up of results-based management. *International Journal of Productivity and Performance Management*, 51(1), 22-36.
- Warner, P. D., & Christenson, J. A. (1984). *The cooperative Extension service: A national assessment*. Boulder, CO: Westview Press.
- Warner, P. D., Christenson, J. A., Dillman, D. A., & Salant, P. (1996). Public perception of extension. *Journal of Extension* [online], 34(4). Retrieved March 29, 2008, from <http://www.joe.org/joe/1996august/a1.html>