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# The Influence of Type of Contact with Extension on Client Satisfaction

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**Abstract:** This article analyzes the variability in quality and outcomes of clients' experience with the CES in Florida. Its purpose is to explore this variability, within a Total Quality Management framework, across different types of contact, namely telephone calls, office visits, and planned programs. Customer satisfaction data collected from 2003 to 2007 was used for the analysis. Type of contact had a statistically significant effect on both the quality perceived by the clients and the outcomes from their experiences. Recommendations are made to improve the relevance and timely delivery of the information provided by Extension through different types of contact.

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## Introduction

Tax-supported Extension programs must be accountable to multiple stakeholders for every aspect of their operation. Consequently, Extension is responsible for the quality of programs' products and services, as well as for their outcomes (Ladewig, 1999). Since 1988, Florida's Cooperative Extension Service (FCES) measures the quality of clients' experiences through an annual Customer Satisfaction Survey (CSS). This practice addresses both a recommendation from the Florida Board of Regents and requirements under the Government Performance and Results Act (GPRA) of 1993 for an annual review of its performance as part of the budgeting process (U.S. Office of Management and Budget, 2004).

FCES has established a standard that 92% of clients will be either "satisfied" or "very satisfied" with the quality of the services received. Surveys show that FCES has consistently met performance targets for overall customer satisfaction (Haile & Israel, 2005; Israel & Galindo-Gonzalez, 2009). But it also is important to conduct in-depth analyses to determine if the level of quality is uniform across the different processes conducted by the organization (Rossi, Lipsey, & Freeman, 2004); (Royse, Thyer, Padgett, & Logan, 2006) and, thereby, embrace the spirit of Total Quality Management (TQM).

TQM conceptualizes organizations a system of interdependent components encompassing critical factors, practices, and tools (Hellsten & Klefsjö, 2000; Tari, 2005). Hackman and Wageman (1995) summarize the

four principles that should guide any intervention aimed to increase the quality of the products and services of an organization according to TQM theory: (a) focus on work processes; (b) analysis of the variability in processes, services, and outcomes; (c) systematic data collection; and (d) continuous learning and improvement.

To analyze the variability in quality and outcomes of the experience across them, this article focuses on three types of contact with Extension in Florida—telephone calls, office visits, and planned programs (e.g. workshops, field days, demonstrations, seminars, etc.).

## Theoretical Framework and Literature Review

### Customer Satisfaction

Measuring customer satisfaction has maintained a prominent place in researchers' agendas since the early 1980s (Allen & Rao, 2000). A CSS provides a fair assessment of the general satisfaction of Extension's clients, and the results can be used to benchmark against the performance of similar programs. For example, Radhakrishna (2002) compared the results from Texas and Florida against those from South Carolina. Rennekamp, Warner, Nall, Jacobs, and Maurer (2001) examined customer satisfaction for Kentucky Extension and found that almost 92% of the clients were either satisfied or very satisfied with the service. It is worth mentioning that respondents in the same study perceived that Extension valued all questions from its clients equally, provided answers in a timely fashion, and treated people with respect and dignity.

These studies suggest that Extension should be competent and show concern for its clients (Haile & Israel, 2005), which can then lead to more repeat and loyal customers (Terry & Israel, 2004). Customer satisfaction is such an important measure of quality that in the Malcolm Baldrige National Quality Award criteria, customer focus and satisfaction account for more than 25% of the possible points of evaluation (Allen, 2004).

### Type of Contact with Extension

The depth, relevance, and specificity of the information that is provided to clients vary across types of contact with Extension, and so do the potential benefits associated with each one of them (Israel, 1991). Homans (1958) proposed that each time that a person is involved in a social exchange, what he provides represents a cost and what he receives is a benefit. If clients trust that the benefits will be real and greater than the costs, then they will actively seek or accept information (Dillman, 1978). Clients can benefit from Extension by receiving relevant information to solve their immediate problems or that can be applied later to address a need; some of the social costs associated with the use of these services include travel costs, registration fees, time spent, subordination (acting a socially inferior role), difficulty to use information (challenging clients' cognitive capabilities), and developing an obligation to support Extension in the future (Israel, 1991; Israel & Wilson, 2006).

While social costs and benefits are expected to vary across contact modes, the types of contact that appear to have greater costs also appear to have greater potential benefits. As clientele trust grows, so does their willingness to take the risk of incurring greater costs to find useful information (Israel, 1991). The role of trust cannot be overemphasized, because costs are generally immediate while most benefits are achieved well after the contact occurred (Israel & Wilson, 2006). Clientele preference for types of contact can be established on the basis of benefits, costs, and trust, following two general patterns: lower-cost/lower-benefit and higher-cost/higher-benefit (Israel, 1991; Israel & Wilson, 2006). Clients in the former pattern prefer the use of mass media and printed material, while clientele in the latter pattern interact more closely with Extension and can ask questions requiring special assistance either through attending planned programs or by

visiting, or calling, the office. The greater the trust that clients have in Extension, the more likely they will select higher-cost types of contact (Israel, 1988).

The higher-cost/higher-benefit pattern can be further differentiated into two sets: those preferring types of contact that involve group educational activities (e.g., attending a planned program) and those who prefer individual consultation (e.g., visiting or calling the office). The costs and benefits of individual consultation can be relatively greater than those for group educational activities, especially larger group activities, because the Extension agents need to direct more time and attention to the clients and clients can obtain information tailored to their specific needs (Israel, 1991).

Thus, perceptions of quality are a result of the contact mode between client and Extension. Multiple studies in other contexts have shown that type of contact, as well as gender, age, and education, have an effect on customer satisfaction (Caruana, 2002; Mittal & Kamakura, 2001; Oly Ndubisi, 2006; Reinartz, Thomas, & Kumar, 2005).

## Purpose and Methods

This article explores the variability of the quality of the experience across different types of contact, namely telephone calls, office visits, or planned programs. In the case of the FCES, most contacts take place via these three modes. Though information is conveyed in other ways, this article focuses on these three primary methods, all of which are examples of higher-cost/higher-benefit pattern.

Customer satisfaction data, collected during 2003-2007 from FCES clients, was pooled for the analysis. An equal-sized stratified systematic random sample was drawn from 20% of the counties in the state annually. The average response rate for this period is approximately 60%.

The questionnaire collects data on the overall satisfaction with Extension services and on three main aspects: the *quality of the experience* with Extension, the *outcomes of the experience*, and the demographic attributes of the respondents. The quality of the experience is a dependent variable that is measured on four dimensions using a five-point Likert-type scale. The four dimensions are: accuracy of information, timely delivery of information, relevance of information, and ease of use of the information. The outcomes of the experience are measured using dichotomous categories (i.e., Yes/No) and these are: (a) opportunity to use the information, (b) effectively solved the problem, and (c) shared the information.

To address the issue of missing values in the dataset, the multiple imputation procedure (Schafer & Graham, 2002) was used in the Statistical Analysis System (SAS), as described by Yuan (2000). The four dimensions of quality previously mentioned were also combined into an index named Service Index. Reliability for the Index was assessed using Cronbach's alpha and principal components analysis (PCA), as described by Carmines & Zeller (1979); a single factor was extracted from PCA with an eigenvalue of 3.238 and Cronbach's alpha of .918. Cronbach's alpha is an indicator of internal consistency, and it takes into account the average correlation among all the items in the scale (Santos, 1999). It is desirable that this coefficient is at least .80.

Descriptive statistics and Chi-square analysis were used to explore the distribution and associations of the dependent variables by type of contact. Further analysis was conducted using either regression or logistic regression. Regression was used for the Service Index, which was a continuous variable. Logistic regression was used to estimate the effects of type of contact and demographic attributes on the likelihood of being "very satisfied" vs. "satisfied" with the quality of the experience for the four individual dimensions of quality and the overall satisfaction with Extension services. Logistic regression is a statistical procedure that is used when the dependent variable is a categorical variable (Tabachnick & Fidell, 1996). This is an appropriate

procedure when the focus of the analysis is to explain the effect that predictor variables have on the likelihood of respondents to belong in one or another category of a dichotomous variable (Blaine, Mascarella, & Davis, 2001). Logistic regression also was used to estimate the effects of the same predictor variables on the likelihood of having an opportunity to use the information, solving the problem, and sharing the information with others.

## Findings

Table 1 presents the distributional statistics for the 2,808 useable surveys that were pooled for the analysis. Notice that half of the sample has planned program as the type of contact. This is a result of the CSS sampling strategy, which was designed to have a similar proportion of reactive and proactive clients. Both office visit and phone call are also individual modes of contact that can be considered reactive, while attending a planned program is a group type of contact of a more proactive nature.

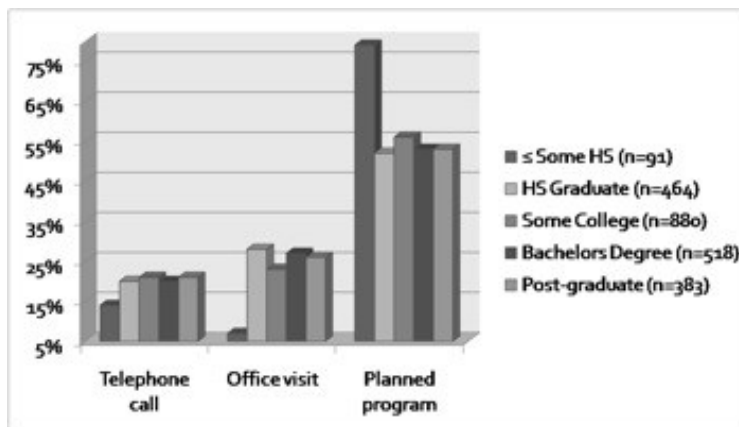
**Table 1.**  
Descriptive Statistics for Demographic Variables

		N	Mean/Percent	Standard Deviation
<i>Demographics</i>				
Race	White, non-Hispanic	2411	89.6	
	Black, non-Hispanic	147	5.5	
	Hispanic	77	2.9	
	Other	57	2.0	
Gender	Male	1325	47.2	
	Female	1483	52.8	
Age		2808	56.5	15.2
Education	Some H.S. or less	103	3.7	
	High School diploma or GED	547	19.5	
	Some college	1038	37.0	
	4-year College degree	663	23.6	
	Graduate degree	457	16.3	
Residence	Farm	440	15.7	
	Rural, non-farm	794	28.3	
	Urban	1574	56.1	

<i>Extension experience</i>				
Extension contacts last 12 months		2808	5.3	8.0
Type of Contact	Office visit	647	25.2	
	Phone call	533	20.7	
	Planned program	1392	54.1	

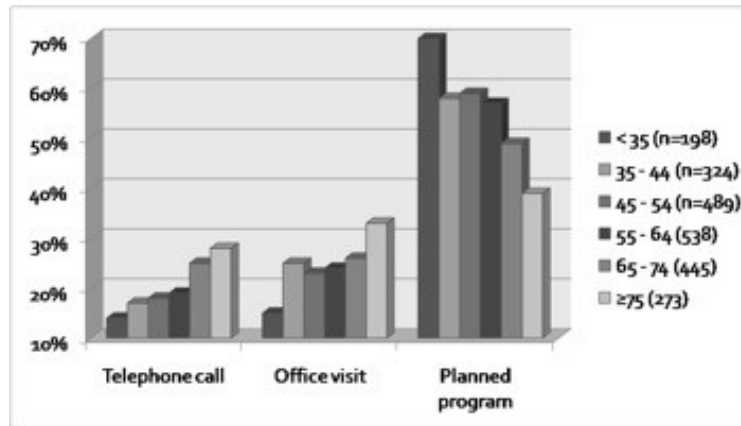
Clients' educational attainment was significantly associated with the type of contact with Extension. Less educated clients were more likely to attend a planned program rather than visiting or calling the office (79% for planned program vs. 7% and 14% for office visit and telephone call, respectively; Figure 1). This may be due to the variety of educational methods generally used during planned programs, which cater to different learning styles and educational levels. In addition, participants of planned programs can ask clarifying questions and benefit from the social interaction with peers. These results are consistent with those from Israel (1988), who reported that clients with greater levels of education preferred individual, higher-cost modes of contact.

**Figure 1.**  
Education Level by Type of Contact



Age of the participant was significantly associated with the type of contact. Figure 2 shows that the younger clients (<35-years-old) were more likely to attend a planned program than any other age group; older clients (>75-years-old) were more likely to visit the office to obtain information. Clients residing in urban areas were more likely to call the office while people living on a farm preferred to attend a planned program (Figure 3). This agrees with Israel (1991), who reported that clients in urban areas were less likely to prefer higher-cost group activities than those in rural areas. Gender was not significantly associated with the type of contact.

**Figure 2.**  
Age of the Client by Type of Contact



**Figure 3.**  
Place of Residency by Type of Contact

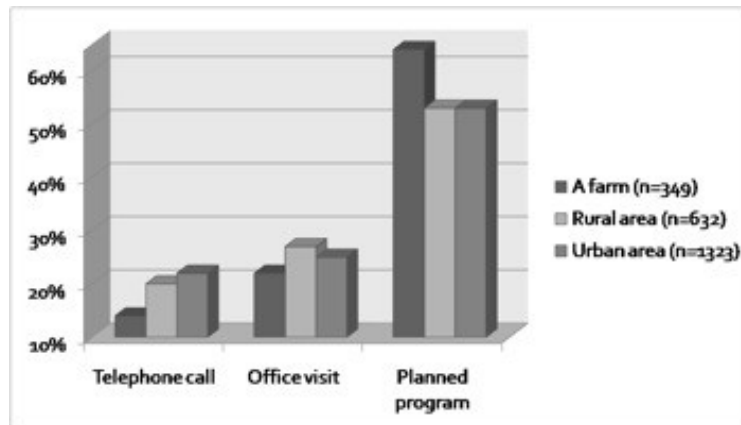


Table 2 shows the descriptive statistics for the measures of service quality, Service Index, and overall satisfaction. The same information is shown for each contact mode in Table 3. Notice that the three lower points of the Likert-scale ("neither satisfied nor dissatisfied," "dissatisfied," and "very dissatisfied") were combined into an "other" category. This is due to the skewed distributions, where more than 90% of the responses were concentrated in the two upper points of the Likert-scale ("satisfied" and "very satisfied"). The table shows highly significant associations ( $p \leq .001$ ) between the type of contact and the perception of quality for the accuracy, timely delivery, and relevance of the information, which is also consistent with Israel (1991). The mean for Service Index is also associated in a highly significant way with type of contact. Moderate significant associations ( $p \leq .05$ ) also exist between the type of contact and both the overall satisfaction and the perception of understanding the information provided by Extension.

**Table 2.**  
Descriptive Statistics for Service Quality and Overall Satisfaction

		N	Mean/Percent	Standard Deviation

Accuracy	Very Satisfied	1825	65.5	
	Satisfied	817	29.3	
	Other <sup>a</sup>	145	5.2	
Timely Delivery	Very Satisfied	1772	63.6	
	Satisfied	843	30.3	
	Other <sup>a</sup>	171	6.1	
Relevancy	Very Satisfied	1696	61.1	
	Satisfied	859	30.9	
	Other <sup>a</sup>	222	8.0	
Ease of Understanding	Very Satisfied	1824	65.8	
	Satisfied	805	29.0	
	Other <sup>a</sup>	143	5.2	
Service Quality Index		2740	4.48	.78
<i>Overall Satisfaction</i>	Very Satisfied	1855	66.8	
	Satisfied	765	27.6	
	Other <sup>a</sup>	156	5.6	
<sup>a</sup> Other includes Neither satisfied nor dissatisfied, Dissatisfied, and Very dissatisfied.				

**Table 3.**  
Service Quality and Overall Satisfaction Separated by Type of Contact

		<b>Telephone Call</b>	<b>Office Visit</b>	<b>Planned Program</b>	<b>p-value</b>
Accuracy	Very Satisfied	63	67	66	≤ .001
	Satisfied	29	27	31	
	Other <sup>a</sup>	8	6	3	
Timely Delivery	Very Satisfied	62	68	62	≤ .001
	Satisfied	28	26	33	
	Other <sup>a</sup>	10	6	5	
Relevancy	Very Satisfied	63	64	59	≤ .001
	Satisfied	26	28	34	



	Other <sup>a</sup>	11	8	7	
Ease of Understanding	Very Satisfied	65	65	66	≤ .05
	Satisfied	27	29	30	
	Other <sup>a</sup>	8	6	4	
Service Quality Index	Mean	4.5	4.6	4.6	≤ .001 <sup>b</sup>
	SD	0.8	0.6	0.6	
<i>Overall Satisfaction</i>	Very Satisfied	64	68	67	≤ .05
	Satisfied	28	26	28	
	Other <sup>a</sup>	8	6	5	
<sup>a</sup> Other includes Neither satisfied nor dissatisfied, Dissatisfied, and Very dissatisfied. <sup>b</sup> Based on ANOVA results.					

Table 4 summarizes the results from both the linear regression for the Service Index and the logistic regressions for the four dimensions of quality and overall satisfaction with Extension. Regarding the Service Index, clients visiting and calling the office were more likely to have higher scores than those attending a planned program. Clients visiting and calling the office also were more likely to be "very satisfied" rather than "satisfied" with the relevance of the information than those attending a planned program. This suggests that office visits and phone calls yield higher service quality than planned programs because in both situations the client can direct the conversation towards their specific needs.

As the level of education increases, clients were more likely to have higher scores on the Service Index and to be "very satisfied" rather than "satisfied" with the four dimensions of quality. Likewise, females were more likely to have a higher score on the Service Index and to be "very satisfied" and less likely to be "satisfied" with all four dimensions of quality and overall satisfaction than men. This is consistent with the findings of Israel and Galindo-Gonzalez (2009), who found that women had greater levels of satisfaction than men for the relevance, timely delivery, accuracy, and ease of understanding of the information provided by Extension in Florida.

Older clients were more likely to be "very satisfied" and less likely to be "satisfied" with the accuracy of the information received from Extension and with the overall experience. Similarly, as the number of contacts with Extension within the year increased, the likelihood of being "very satisfied" rather than "satisfied" with the services increased, too. According to Israel (1991), clients who have used Extension over the last year were more likely to prefer higher-cost modes of contact and to develop greater trust in the organization. Residence had no effect on clients' perception of quality.

**Table 4.**  
Parameter Estimates for Service Index and the Dimensions of Quality of the Experience

	<b>Estimate(a)</b>
<b>Parameter</b>	

	<b>Service Index</b>	<b>Accuracy</b>	<b>Delivery</b>	<b>Relevance</b>	<b>Easy</b>	<b>Overall Satisfaction</b>
Office visit	.261**	.092	.194	.302***	-.023	.038
Phone call	.356***	-.020	.120	.361***	.089	-.051
Education	.173***	.106**	.156***	.154***	.155***	.055
Gender	-.505***	-.396***	-.318***	-.410***	-.428***	-.243***
Age	.004	.007*	.005	-.003	.003	.007*
Farm	.213	.217	.080	.057	.087	-.071
Rural area	-.099	-.045	.036	-.041	-.146	.024
No. Contacts	.013*	.013*	.014*	.019***	.015*	.033*

1. Negative coefficient means less likely to be very satisfied and more likely to be satisfied.  
 \*≤ .05  
 \*\*≤ .01  
 \*\*\*≤ .001

Table 5 shows the descriptive statistics for the responses about the outcomes of the experience of using Extension. The same information is separated by contact mode in Table 6. Notice that only those clients who reported having had an opportunity to use the information were asked to respond if they had solved their problem; hence the smaller N for that outcome. Table 6 shows that there were highly significant associations ( $p \leq .001$ ) between type of contact and having an opportunity to use the information and sharing the information. Solving the problem was also significantly associated with type of contact ( $p \leq .01$ ).

**Table 5.**  
 Descriptive Statistics for the Outcomes of Using Extension

		<b>N</b>	<b>Mean/Percent</b>
Opportunity to Use	Yes	2188	79.7
	No	452	16.5
	Don't know	106	3.9
Solved the Problem	Yes	1872	86.2
	No	118	5.4
	Don't know	183	8.4
Shared Information	Yes	2002	73.3
	No	650	23.8

	Don't know	81	3.0
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**Table 6.**  
Outcomes of Using Extension Separated by Type of Contact

		Telephone call	Office visit	Planned program	p-value
Opportunity to Use	Yes	83	84	76	≤ .001
	No	13	14	19	
	Don't know	4	2	5	
Solved the Problem	Yes	83	84	88	≤ .01
	No	7	7	4	
	Don't know	10	9	8	
Shared Information	Yes	67	68	77	≤ .001
	No	31	30	19	
	Don't know	2	2	4	

Table 7 summarizes the results from the logistic regression for the outcomes of the experience. Clients visiting and calling the office were more likely to have an opportunity to use the information and to solve their problems. This is likely a result of the greater relevance to clients' needs of the information received in calls or visits. Clients with greater education levels or with more contacts with Extension within the year also were more likely to have an opportunity to use the information and to solve their problems.

Though more educated clients and those with more contacts within the year were more likely to share the information with others, clientele calling or visiting the office were less likely to share the information than clients who attended a planned program. This is logical because individual consultations tend to focus on very specific topics relevant to a particular client while the content of planned programs is more general and therefore easier to share with others. Older clients are also less likely to share the information with others. Clients' gender and place of residence had no effect on the outcomes.

**Table 7.**  
Parameter Estimates for the Outcomes of the Experience with Extension

Parameter	Estimate(a)

	<b>Opportunity to Use</b>	<b>Solved the Problem</b>	<b>Shared the Information</b>
Office visit	.544***	.212***	- .435***
Phone call	.486***	.170***	- .487***
Education	.215***	.138***	.136***
Gender	.038	- .069	- .155
Age	.003	.001	- .007*
Farm	.187	.189	- .036
Rural area	- .132	.057	.055
No. Contacts	.039***	.050***	.028***
(a) Negative coefficient means less likely to have an opportunity to use the information, solve the problem, or share the information. *≤ .05 ***≤ .001			

## Conclusions and Implications

Type of contact significantly affects both the quality perceived by the clients and the outcomes from their experiences but not their overall satisfaction. The main factor making a difference across types of contact is the relevance of the information, though highly satisfied, clients indicated that planned programs are not always relevant to their needs. This perception is based on the fact that most planned programs cover generic information on broad topics to interest a greater number of participants. Additionally, the scheduling of planned programs may be due more to internal priorities than to consulting with clients. For this reason, clients perceive that planned programs are not always offered at the right time to be useful, particularly in comparison with office visits.

Participants also indicated that information obtained via a phone call is not always delivered in time to be useful. Clients are more likely to call the office when they have a specific question or an urgent need, and the agents face the challenge of providing high-quality responses on short notice to these questions. These calls may need sometimes to be forwarded to a specialist, which might cause further delays in providing a response. Additionally, breakdowns in the process for responding to a phone call may occur from factors such as: the wrong person answers the phone, the agent fails to call back the client, the agent calls the client when the information is not needed anymore, etc.

The type of contact with Extension also affects the outcomes of the experience with Extension. For example, clients visiting and calling the office are more likely to have an opportunity to use the information and therefore to solve their problems than those attending planned programs. The possibility of using the information is related to the relevance and timely delivery of the information—the client can contact the office when the problem occurs and ask questions related with the specific needs. Finally, the broader focus of the information provided through a planned program reduces its relevance but also makes it easier for participants to share with others.

## Recommendations

The more that agents know about their audiences (e.g., who they are, where they live, and what they do), the more likely they will be to develop relevant programs. Through a continuous dialogue with clients and periodic needs assessments, Extensionists will be able to obtain detailed information about what type of programs to offer and when. It is also important to watch external trends for opportunities and threats that can help in anticipating clients' needs.

Introducing a variety of examples in planned programs, which helps clients see how to apply information to different contexts, can increase the relevance and the use of the information. Dedicating more time for Q&A sessions during planned programs also can allow clients to direct the discussion towards their specific needs.

The quality of phone consultations may be improved by establishing a quality assurance system for the handling of clients' calls. This should include matching the client's need with the appropriate subject-matter person and ensuring that the communication between client and agent takes place as soon as possible. Given increasing access to email, especially via Smartphones, timely responses can be facilitated by forwarding client questions to agents or specialists in an email.

When volunteers are responsible for answering phone calls at the Extension office, it is important to provide training on answering clients' questions; volunteers should be able to identify when answering a consultation goes beyond their skill level and direct it immediately to the appropriate agent.

When the time and format of the contact with clientele allow it, asking clients direct questions addressing relevance, timeliness, understandability, and applicability of information can be a great way to fine-tune ongoing Extension programs.

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