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Communicating the value of Extension programming to stakeholders remains a challenge for many Extension professionals. Program evaluation is a tool that can help communicate the value of Extension; however, many evaluation methods fail to articulate a story of aggregated impact. A public value instrument was recently developed to help communicate the impact of Extension. Communicating Extension's impact has become more critical, yet more difficult, to do during the COVID-19 pandemic. This research note shares the results of a program evaluation using the Extension public value instrument to determine the impact of Georgia Cooperative Extension's programs during the shelter-in-place orders due to COVID-19. Respondents (n= 572) indicated high levels of self-reported knowledge gain, wellness, intent to change behavior, and perceived economic value. The results demonstrated respondents' overall satisfaction and valuation of Family and Consumer Sciences programs during COVID-19. The Extension public value instrument enabled evaluation data collection for Extension professionals to communicate the value of their program impact despite major disruptions to traditional program form

Keywords

evaluation; impact; crisis; COVID-19

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Abstract

Communicating the value of Extension programming to stakeholders remains a challenge for many Extension professionals. Program evaluation is a tool that can help communicate the value of Extension; however, many evaluation methods fail to articulate a story of aggregated impact. A public value instrument was recently developed to help communicate the impact of Extension. Communicating Extension's impact has become more critical, yet more difficult, to do during the COVID-19 pandemic. This research note shares the results of a program evaluation using the Extension public value instrument to determine the impact of Georgia Cooperative Extension's programs during the shelter-in-place orders due to COVID-19. Respondents ($n = 572$) indicated high levels of self-reported knowledge gain, wellness, intent to change behavior, and perceived economic value. The results demonstrated respondents' overall satisfaction and valuation of Family and Consumer Sciences programs during COVID-19. The Extension public value instrument enabled evaluation data collection for Extension professionals to communicate the value of their program impact despite major disruptions to traditional program formats.

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Introduction

Evaluation is a critical asset to meeting the global grand challenges facing agriculture for feeding the world (Murphrey et al., 2018). Evaluation is also a powerful tool for communicating the value of Extension programming to stakeholders (Stup, 2003); yet Extension professionals often struggle to measure and demonstrate the impact of their work (Warner & Christenson, 1984). While Extension organizations strive to build institutional evaluation capacity (Arnold, 2002; Diaz et al., 2019; Franz & Townson, 2008), communicating how Extension efforts help improve the lives of citizens, increase business efficiency, and create stronger communities remains a challenge (Lamm et al., 2020). Proving the public value of Extension programs is essential to maintaining funding (Lamm et al., 2013). However, impact has remained difficult to measure due to the variety of topics covered by Extension programming, though recent work has begun to develop Extension's capacity to aggregate program impact to communicate and better articulate the public value of Extension services (Lamm et al., 2020; Lamm & Lamm, 2018).

Extension professionals around the world strive to create relevant, community-focused programming attuned to local needs, and Extension programs are often viewed as a trusted source of information for local communities (Settle et al., 2017; Tidwell et al., 2019). In February of 2020, community needs changed rapidly due to the spread of the novel coronavirus disease (COVID-19) and the emergence of a global pandemic (Narine & Meier, 2020). COVID-19 is a highly infectious disease transmitted between people through droplets from sneezes and coughs (Heymann & Shindo, 2020). Organizations and institutions implemented measures to reduce the spread of the disease, including encouraging remote

work and online program delivery (Narine & Meier, 2020). To respond to clientele needs during the COVID-19 pandemic, Extension professionals had to quickly adjust their program delivery methods to remain relevant. Extension's response to the evolving pandemic was dependent upon its ability to be nimble in program development during the crisis and its capacity to adapt programs to client needs.

Evaluation is an essential element of effective Extension program design and implementation (Patton, 1987; Tidwell et al., 2019). The COVID-19 pandemic presented new complications for conducting evaluation work while mitigating the risk of infection, which impacted methodological considerations for data collection (UN Women, 2020; World Food Program, 2020). The pandemic required evaluators to think pragmatically and creatively about adaptations to the evaluation process, changing client needs, and future considerations. COVID-19 impacts occurred on a global scale, but the local implications and context in which programmatic developments occurred impacted evaluations the most during the pandemic (Patton, 2020). Evaluation adaptations occurred simultaneously with changing program dimensions, such as switching to online delivery (Narine & Meier, 2020). Due to changing Extension program delivery, the need to investigate how Extension program impact can be captured during a time of rapidly changing program contexts emerged.

Extension professionals, through a commitment to maintaining programmatic relevance, have sought opportunities to develop evaluation methods which allow community members and participants to provide honest and timely feedback (Tidwell et al., 2019). The issue of relevance is further compounded during times of crisis. Extension professionals' ability to act during crises, such as the COVID-19 global

pandemic, requires a willingness to adapt to changing situations (Narine & Meier, 2020; Patton, 2020). Therefore, institutionalized evaluation processes that allow for the aggregated measurement of program impacts could enhance the resiliency of Extension evaluation efforts moving forward in the wake of COVID-19, but should be tested to determine their worth and value to the organization.

Purpose & Objectives

The purpose of this study was to assess the impact of University of Georgia Family and Consumer Science (FACS) programming during the COVID-19 pandemic. The following objectives guided this study:

- (a) determine participants' self-reported knowledge gain as a result of FACS programs during COVID-19;
- (b) determine participants' self-reported sense of wellness as a result of FACS programs during COVID-19;
- (c) determine participants' self-reported intent to change their behavior as a result of FACS programs during COVID-19; and
- (d) determine the estimated economic value of FACS programming during COVID-19.

Methods

The Governor of Georgia, Brian Kemp declared a public health state of emergency on March 14th, 2020 due to COVID-19 (Exec. Order No. 03.14.20.01, 2020) and issued a shelter in place order for the state of Georgia on April 3rd, 2020 to mitigate its spread (Exec. Order No. 04.02.20.01, 2020). During the shelter in place orders, gatherings at any business, organization, or establishment were restricted to 10 or fewer persons and people were required to maintain six feet of distance between themselves and another

person. Due to these orders, the Board of Regents for the University System of Georgia issued an immediate closure of all university and college campuses, required employees to telework, and converted classroom instruction and university programming to online delivery. Thus, Georgia Cooperative Extension was unable to conduct face-to-face programming. Very quickly, traditional in person programming was changed to online delivery, with most Georgia FACS programs conducted via Zoom (Zoom Video Communications, Inc., 2020; Dobbins et al., 2020). Within this program area, participants learned about topics including nutrition and health, human development and family life, food safety, food preservation, child development, housing, and financial management.

The Extension public value instrument (Lamm et al., 2020) was used to collect data from Extension program participants at the conclusion of each Zoom-offered program. The instrument was developed as a way to “measure aggregated knowledge gain, intent to change behavior (short-term outcomes leading to medium-term outcomes) and self-reported economic value (long-term outcome) of extension programs” (Lamm et al., 2020, p. 9). Development of the instrument was aimed at linking program change outcomes to social, economic, and environmental effects in order to tell an aggregated impact story for Extension programming.

The instrument measured four self-reported constructs: knowledge gain, intent to change behavior, sense of wellness, and perceived economic value (Lamm et al., 2020). Aggregated knowledge gain was measured through a two-part Likert-type question. The question asked about knowledge regarding information presented before and after the program. Respondents identified their perceived knowledge level on a five-point Likert-type scale ranging

from one - *no knowledge* to five – *extremely knowledgeable*. Intent to change behavior was measured using an ordinal scale ranging from *definitely will not use this information* to *definitely will use this information*. To measure level of wellness, a five-point semantic differential scale requested respondents indicate how they felt between five sets of opposing adjectives or statements (*better-worse, more healthy-less healthy, more stable-less stable, less stress-more stress, and more in control-less in control*). Self-reported economic value was captured by asking respondents to indicate the amount of money they believed they would save or gain from the type of information learned in the next month. Respondents could select from \$0, \$1-9, \$10-49, \$50-99, \$100-149, \$150-199, and \$200 or more. If respondents selected \$200 or more, they were asked to specify the amount in an open-ended question (Lamm et al., 2020).

The Extension public value instrument helped capture data for the research objectives, despite certain limitations. One limitation to the instrument is the reliance on self-reported data. However, self-reported measures have been found to provide key insight into program value and can help communicate program impact (Gonyea, 2005).

Data Collection & Analysis

The sample used in this study were participants of University of Georgia FACS programming delivered via Zoom between March and May of 2020, when the state was under shelter in place orders due to COVID-19. Participants were invited to complete a Qualtrics survey at the end of each respective program. Data were analyzed descriptively and inferentially using SPSS 26 (Field, 2013).

Respondents' self-reported knowledge gain mean scores before and

after the program were compared, using a paired *t* test ($p < .05$), to determine if a significant knowledge change occurred as a result of the program. Data for self-reported wellness were recoded to ensure higher numbers represented the positive indicators of wellness and the lower numbers represented the negative indicators (1 – *low sense of wellness*; 5 – *high sense of wellness*). An aggregate wellness score was calculated based on the average of the five items. Internal structure validity of the construct was analyzed through Cronbach's alpha, $\alpha = .92$, indicating the aggregated scales were internally consistent and construct dimensions were closely related. In accordance with recommendations from Lamm et al. (2020), intent to change behavior data were analyzed descriptively using frequency counts and percentage of respondents who selected each category.

To analyze self-reported economic value, data were analyzed descriptively. First, data were recoded as the median value for each answer range (e.g. \$10 - \$49 was recoded into \$29.50) and open-ended responses were recorded as reported. A total sum value was calculated to determine the value of the program for respondents over the next month (Lamm et al., 2020). The number was multiplied by the difference between total number of survey respondents and the number of question respondents to extrapolate the self-reported economic value to all respondents. A total sum value was then calculated to determine the self-reported economic value of extension programs for all survey respondents.

Results

A total of 572 participants completed the instrument. FACS Extension program participants were taught a myriad of topics during these programs including canning, soy, childcare injury prevention and control, food safety, green cleaning, reducing the

risk of a heart attack, weight management, and exercise. Results were categorized by research objective.

Self-Reported Knowledge Gain

When asked to rate their knowledge level before and after the program, 68.1% of respondents reported they were very or extremely knowledgeable after the program

compared to 11.3% prior to the program (Table 1). A dependent *t*-test was used to assess self-reported knowledge gain before and after program participation. On average, participants reported statistically significant changes in knowledge attributed to FACS programs, $t(531) = -36.56, p < .001$. This represented a large-sized effect, $r = .85$.

Table 1

Knowledge Level Before and After Program

Level of Knowledge	Before		After	
	<i>f</i>	%	<i>f</i>	%
Extremely Knowledgeable	10	1.7	121	21.2
Very Knowledgeable	55	9.6	268	46.9
Fairly Knowledgeable	154	26.9	110	19.2
Some Knowledge	232	40.6	35	6.1
No Knowledge	91	15.9	1	0.2
Total	542		535	

Intent to Change Behavior

When asked about their intent to use the information provided in their respective program, 79.5% of participants indicated they would definitely use the information ($n = 455$), and 13.3% indicated they would probably use the information ($n = 76$). Only 0.4% of participants indicated they would probably not ($n = 1$) or definitely not ($n = 1$) use the information provided, while 1.7% of respondents had not decided whether they would use the information ($n = 10$).

Sense of Wellness

Respondents indicated a high sense of aggregated wellness ($M = 4.30, SD = .72$) as a result of the program. This indicated

respondents felt less stress, more stable, healthier, and more in control of their choices as a result of the FACS Extension program.

Self-Reported Economic Value

Respondents associated the information received from their respective program with a \$24,353.50 value over the subsequent month. By dividing this value by the number of respondents, the average self-reported economic value of the online programming received was \$48.61 over the next month. These self-reported economic values ranged from \$0 to \$1000 per person. Assuming the responses obtained are representative of a typical month, they can

be extrapolated to an economic value of \$27,804.81 for all online FACS Extension program participants over one month, and

\$333,657.72 over one year (see Table 2 below).

Table 2

Self-Reported Economic Value of FACS Programming

	<i>n</i>	Amount expected to be saved/gained over subsequent month	Financial benefit expected to be derived by participants over the next year
Respondents' Perceived Economic Value	501	\$24,353.50	
Aggregated Total		\$27,804.81 ^a	\$333,657.72 ^b

Note: ^aCalculated by multiplying the amount expected to be saved/gained over the subsequent month by the difference between the total number of respondents ($N = 572$) and the number of respondents for this question ($n = 501$). ^bCalculated by multiplying the amount expected to be saved/gained over the subsequent month by twelve.

Conclusions, Implications, & Recommendations

Similar to extensionists across the world, Georgia Cooperative Extension was unable to conduct face-to-face programming during government shelter in place orders resulting from the COVID-19 pandemic. FACS agents improvised and conducted programs online via Zoom (Narine & Meier, 2020). While uncertain of the impact of online programming, Georgia Extension professionals found their educational programs still provided needed information and resources to their clientele. Overall, respondents self-reported high levels of knowledge gain, intent to change behavior, and perceived economic value. The Extension public value instrument (Lamm et al., 2020) allowed for data collection and the measurement of aggregated knowledge gain, intent to change behavior, wellness, and self-reported economic value of Extension FACS programming during COVID-19. Without the instrument, collecting program impact data would have been very

challenging due to social distance restrictions and program delivery changes which occurred in response to the pandemic. While agents can utilize other methods to assess impact, the Extension public value instrument increased efficiency and removed barriers to evaluation during this time. Despite its limitations, including the use of self-reported data, the Extension public value instrument (Lamm et al., 2020) provided a way to measure aggregated knowledge gain, intent to change behavior (short-term outcomes leading to medium-term outcomes) and self-reported economic value (long-term outcome) during a crisis.

Moving forward, Extension professionals and administrators around the world should consider using the results of our study to create professional development plans to further improve Extension professionals' capacity to respond and adapt not only Extension programming, but evaluation during times of crisis. Other Extension organizations could utilize the instrument, both online and in paper format,

to quickly build Extension professional capacity to measure the impact of their programs. Considering changes in social structure which affect evaluation efforts, as with COVID-19, bolstering the resiliency of evaluation designs with such instruments will ensure continuity in the face of future disruptions, regardless of region, country, or continent. Adaptability is key to evaluation during times of crisis (Patton, 2020), and the Extension public value instrument allows for increased evaluation resiliency. Additionally, demonstrating the value of Extension programming to funders is critical for Extension organizations around the world (Franz et al., 2014). This instrument helps capture the aggregated impacts of Extension programs in an easily adaptable form.

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