Alabama Master Gardener Strategic Assessment Surveys

by

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A thesis submitted to the Graduate Faculty of
Auburn University
in partial fulfillment of the
requirements for the Degree of
Master of Science

Auburn, Alabama
May 07, 2022

[Extension Master Gardener, demographics, involvement, volunteer, activities, motivations]

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Abstract

The purpose of this quantitative assessment is to evaluate the perspectives and experiences of regional extension agents, county extension coordinators, office administrators, and volunteers involved in the Alabama Extension Master Gardener (EMG) program. This study had three objectives: determining the EMG volunteer demographics and activity preferences, identifying EMG volunteer motivations for involvement in the program, and comparing the experiences and perspectives of the Alabama EMG personnel and volunteers. Results showed that the demographics of EMG volunteers are over 60 years old, female, white, affluent, and well-educated. Volunteers prefer problem-solving and hands-on related service activities. Volunteers are motivated by the Understanding function used in the Volunteer Functions Inventory (VFI). Intern volunteers are motivated by the Understanding and Values functions, and active volunteers are motivated by social and self-esteem functions. This indicates that relationships may play an essential role in volunteer retention. EMG Personnel and volunteers suggested recruitment, involvement, teamwork, retention, and more convenient meeting times as strategies to improve the program. When asked to measure a successful program, responses included community outreach, activities, recruitment, leadership, reputation, friendships, and learning. Overall, the findings in this study are encouraging; the Alabama EMG program positively impacts lives and communities through gardening.

Acknowledgments

I am deeply obliged to many people who made this research possible. To Kerry Smith, the State Master Gardener Coordinator, for creating the survey and answering all my questions; to my fellow graduate students, especially Jesse Teel, for moral support. To my committee members, Dr. Dave Williams and Dr. Jennifer Jettner, for great suggestions and edits; to my major advisor Dr. Carolyn Robinson for her patience, guidance, and words of encouragement. To my parents for supporting me every step of the way and instilling in me the strong work ethic that I needed to finish this research. Finally, to God, my Savior, Messiah, Redeemer, and Friend providing this opportunity and making my path straight.

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List of Abbreviations

ACES	Alabama Cooperative Extension System
CEU	Continuing Education Units
EMG	Extension Master Gardener
EFA	Exploratory Factor Analysis
NIFA	National Institute of Food and Agriculture
USDA	United States Department of Agriculture
VFI	Volunteer Functions Inventory
VSA	Volunteer Service Activity

CHAPTER I

INTRODUCTION AND LITERATURE REVIEW

Cooperative Extension History

The Cooperative Extension Service joins with the United States Department of Agriculture (USDA) and the National Institute of Food and Agriculture (NIFA) to bridge land-grant universities and communities. With a presence in every county across the country, Extension agents translate research into education and action. As a result, cutting-edge agricultural research is readily available to communities and businesses who can put knowledge into practice to improve their lives.

The formation of the Cooperative Extension Service began with the passage of the Morrill Act of 1862. The United States gave each state 30,000 acres of land for each member of its congressional delegation. The land was sold, providing funds for post-secondary education focused on agricultural and mechanical arts. The act established the Agricultural and Mechanical College of Alabama, now Auburn University, which became the main office for the statewide Alabama Extension program (Langcuster 2012). However, the formalization of Extension came with the passing of the Smith-Lever Act in 1914. This then-novel policy funded land-grant universities to establish a network of county Extension agents. At its conception, agents enabled land-grant universities to disseminate information that addressed rural agricultural issues. The act stated that Extension work connected with the USDA would be executed through land-grant universities (NIFA 2016).

The need for education among farmers and rural community development led to the Alabama Extension Service, which became the Alabama Cooperative Extension System (ACES). ACES partners with land-grant universities Auburn University, Alabama A&M University, and

Tuskegee University to improve Alabama's economy and residents' quality of life by delivering educational programs to each of the 67 counties. These programs evolve to meet the state's changing needs, are research-based, related to current issues, and provided via regional and local Extension Agents (Langcuster 2012).

Extension Master Gardener Program

The Extension Master Gardener program is a partnership between land-grant universities, the Cooperative Extension System, and Master Gardener volunteers. Extension agents train Master Gardener volunteers to be educators. Therefore, the program is called the Extension Master Gardener (EMG) program. Under the direction of the Alabama Cooperative Extension System, EMG volunteers increase the availability of and provide reliable, relevant, and reachable home horticulture information.

The concept of the Master Gardener program traces its roots to Washington State University in 1972. Public demand for home gardening information increased due to rapid urban growth. Extension agent David Gibby, feeling overwhelmed by the large volume of requests, proposed the idea of training volunteers to assist Extension with consumer horticulture education in the community. Results were better than expected, and the EMG program spread quickly.

Today, the EMG program exists in 49 states, the District of Columbia, at least four Canadian provinces, and South Korea. It serves as a model for other volunteer programs. In 2020, an estimated 84,000 EMG volunteers reported 3.1 million service hours and educated 8.4 million clients. Naturally, EMG volunteers helped people improve their physical and mental health, gardening and landscape practices, and awareness of environmental issues. Their work contributed an estimated $88 million in value to the public (EMG National Committee 2020).

The Alabama EMG program is a partnership between the land grant universities (Alabama A&M University, Auburn University, and Tuskegee University), Alabama Extension

staff (County Extension Office Administrators, County Extension Coordinators, and Home Grounds Regional Extension Agents), and extension-trained, Master Gardener volunteers. The program started in 1981 when New York Master Gardener Mary Lou McNabb introduced the Master Gardener program concept to Gary Murray, a Madison County Extension Agent. McNabb and Murray, along with the help of a few other Extension Agents, organized the first Alabama EMG training series in Huntsville, Alabama (ACES 2018).

To become an Alabama EMG volunteer, one must finish the 50-hour training program which provides hands-on and classroom instruction and volunteer a total of 50 hours during the year. After year one, EMG volunteers must report a minimum of 25 volunteer service hours annually and pay membership dues and complete 10 hours of continuing education units (CEU) to maintain active status (Carroll 2021). Certified EMG volunteers, Extension agents, and local experts teach classes on vegetable gardening, trees, home lawns, and annual and perennial flowers.

EMG volunteers are an asset to the Alabama Cooperative Extension System. They host public education outreach activities, manage and support teaching gardens, sponsor, or support community gardens, donate fresh produce to charity, assist with research projects including Harvest for Health and the Bee Biodiversity Initiative, and much more (ACES 2018). The EMG volunteer service hours allow Extension personnel to focus their time and effort toward more advanced or technical programming.

The impact the Alabama EMG volunteers have on their local communities is evident. In 2018, Alabama EMGs volunteered 78,920 hours in public education outreach activities, having a public value of $1.7 million, and maintained teaching gardens in 21 counties with over 400,000 visitors. EMG volunteers sponsored 13 community gardens that donated 12 tons of produce or

96,000 half-cup servings, equal to the retail price of $39,600 in 2018. Harvest for Health is a project led by the University of Alabama Birmingham's Comprehensive Cancer Center and Alabama Extension's Home Grounds Team that uses a backyard garden to teach new, healthy habits to cancer survivors. To date, 492 volunteers have mentored cancer survivors. Pilot studies (2013-2017) showed that gardening significantly improved the diet and health of the cancer survivor participants (ACES 2018).

Demographics

Understanding EMG volunteer demographic information offers direction to ACES personnel for recruitment, training, retention, and, more importantly, EMG volunteers' satisfaction and community impact. It can imply how to adapt training methods and who may be attracted to the program. It also has implications for which service opportunities volunteers may be available. Volunteer demographics can also help in understanding the motivation of volunteers. VanOverschelde (2017) found that in non-profit organizations volunteer age and career motivations are correlated, the younger the volunteer, the higher the career motivations.

While there is no published demographic information for Alabama EMG volunteers, those who live in the Southeast region of the U.S. (Alabama, Georgia, Florida, South Carolina, North Carolina, and Virginia) were slightly older than EMG volunteers in other regions (Dorn et al. 2018). Previous statewide demographic data show an aging volunteer base. Early 2000's EMG volunteer studies in Texas, Missouri, and Oregon revealed that 25.7%, 35.7%, and 40.0% of participants were over 60 years old, respectively (Schrock et al. 2000; Kirsch and VanDerZanden 2002; Waliczek et al. 2002). Recent studies have shown that the percentage of EMG volunteers over 60 years old has risen to over 75% in Iowa, Mississippi, and nationally (Takle et al. 2017; Dorn et al. 2018; Jacobs 2018).

Studies show that most EMG volunteers are female, white, educated, and affluent (Schrock et al. 2000; Kirsch and VanDerZanden 2002; Strong and Harder 2011; Takle et al. 2017; Dorn et al. 2018; Jacobs 2018). According to the U.S. Bureau of Labor Statistics (2016), women are more likely to volunteer than men, and higher levels of education are associated with volunteers and a predominance of whites.

Preferences

Early accounts of the EMG program indicate an agreement between skilled volunteers and Extension agents. Volunteers received Extension training in exchange for hours spent meeting the public demand for gardening questions. Most spent service hours at Master Gardener clinics set up at different venues such as gardening events, county fairs, libraries, and shopping centers. Volunteer service activities (VSAs) require a significant amount of knowledge, skill, and concentration because they involve transferring knowledge to the public. As time went on, the EMG program expanded to include VSAs that improved the communities and the environment (Relf and McDaniel 1994; Meyer 1997; Ruppert et al. 1997).

Volunteer involvement predicts volunteer satisfaction and commitment (Finkelstein et al. 2005). Surprisingly, there is a lack of knowledge of EMG volunteer involvement. Aside from the work of Dorn et al. (2019), there have been few attempts to quantify or understand VSAs and which volunteer groups support them. This study offers the opportunity to apply to gain a deeper understanding of volunteer involvement. The study measured Alabama EMG volunteer VSA involvement. In addition, VSAs were grouped into involvement themes to determine patterns in EMG volunteer support of VSA themes.

Motivations

Volunteer work typically consists of activities that are helpful and extend over time. Volunteers freely choose to be engaged in such activities without the expectation of reward or

other compensation. Volunteering often occurs through formal organizations and is performed on behalf of causes or individuals who desire assistance (Snyder and Omoto 2008). There are many psychological theories to measure and explain volunteer motivation. The Volunteer Functions Inventory (VFI) developed by Clary et al. (1998) proved its usefulness in identifying volunteer motives in research. The six motivational functions include Values, Understanding, Enhancement, Career, Social, and Protective. The VFI consists of 30 items measured with a 7-point Likert scale (1=strongly disagree; 7=strongly agree).

A review of the literature suggests several deviations from the original VFI. Newberry and Israel (2018) used 18 items related to five constructs from the modified VFI (career, helping the environment, learning, social, and values) to explore the motivations of the Florida Master Naturalist Program. Takle et al. (2016) also used a modified VFI to study the motivations of Iowa EMG volunteers. They confirmed six factors, but a factor analysis revealed that items did not load on intended factors. The highest scoring motivation for Iowa EMG volunteers was a factor labeled "Learning" that included three Understanding, one Career, one Social, and one Enhancement volunteer functions. Dorn et al. (2021) used 20 items on a 5-point Likert scale and five motivation functions "Learning," "Values," "Personal," "Social," and "Career," to examine the motivations of EMG volunteers nationwide.

To measure the perceived benefits of Iowa EMG volunteers, Takle et al. (2016) used an instrument with 17 items on a 5-point Likert scale (1 = Strongly Disagree; 5 = Strongly Agree) called return on investment. The exploratory principal component analysis identified four factors (New Discoveries, Self, Community, and Recognition). The mean scores for each factor revealed that Iowa EMG volunteers viewed New Discoveries as their most important reason for participating in the program.

Objectives

No baseline data exist on what motivates Alabama EMG volunteers to participate in the program. Therefore, the purpose of this study was to determine their motivations for volunteering in the Master Gardener program. Coordinators can use these data to help in developing programs and volunteer activities.

The first objective of this study is to determine the demographics and activity preferences of Alabama EMG volunteers. Knowledge of volunteer demographics and activity preferences could help coordinators in meeting the needs of the volunteers. The second objective will identify the motivations of EMG volunteers for involvement in the program. The third objective will compare the experiences and perspectives of the Alabama EMG personnel and volunteers.

References

Alabama Cooperative Extension System. 2018. What is a Master Gardener: Our Beginnings. [accessed 2021 Sep 8]. https://mg.aces.edu/about/.

Bureau of Labor Statistics. 2016 Feb 25. Voulnteering in the United States — 2015. US Department of Labor. [accessed 2021 Oct 9]. https://www.bls.gov/news.release/pdf/volun.pdf.

Carroll D. 2021. Calculating Your Service Hours. Lee County Master Gardeners of Alabama. [accessed 2021 Sep 14]. .

Clary EG, Snyder M, Ridge RD, Copeland J, Stukas AA, Haugen J, Miene P. 1998. Understanding and assessing the motivations of volunteers: A functional approach. J Pers Soc Psychol. 74(6):1516–1530. doi:https://doi.org/10.1037/0022-3514.74.6.1516.

Dorn ST, Newberry III MG, Bauske EM, Pennisi SV. 2018. Extension Master Gardener Volunteers of the 21st Century: Educated, Prosperous, and Committed. Horttechnology. 28(2):218–229. doi:https://doi.org/10.21273/HORTTECH03998-18.

Dorn ST, Newberry III MG, Bauske EM, Pennisi SV. 2019. Are We on the Same Page? Exploring National, State, and Local Educational-response Themes for Extension Master Gardener Coordinators and Volunteers. Hortscience. 54(3):568–575. doi:https://doi.org/10.21273/HORTSCI13679-18.

Dorn ST, Newberry III MG, Bauske EM, Pennisi SV. 2021. If You Build It, Will They Come? Examining Motivations of Extension Master Gardener Volunteers. Soc Nat Resour. 34(9):1250–1267. doi:https://doi.org/10.1080/08941920.2021.1949511.

Extension Master Gardener National Committee. 2020. Extension Master Gardener 2020 National Report Overview. [accessed 2021 Oct 5]. https://usdaars.maps.arcgis.com/apps/dashboards/f29368e13d5b4cefa6f21c050a1f8c7e.

Finkelstein MA, Penner LA, Brannick MT. 2005. Motive, role identity, and prosocial personality as predictors of volunteer activity. Soc Behav Pers. 33(4):403–418. doi:https://doi.org/10.2224/sbp.2005.33.4.403.

Jacobs AP. 2018. Exploring the Relationship between Volunteer Motives, Satisfaction, Commitment, and Intention to leave the Mississippi Master Gardener Program. [Starkville, Mississippi]: Mississippi State University. https://scholarsjunction.msstate.edu/td/2177.

Kirsch E, VanDerZanden AM. 2002. Demographics and Volunteer Experiences of Oregon Master Gardeners. Horttechnology. 12(3):505–508. doi:https://doi.org/10.21273/HORTTECH.12.3.505.

Langcuster J. 2012. Alabama Cooperative Extension System (ACES). In: Encyclopedia of Alabama. [accessed 2021 Oct 13]. http://www.encyclopediaofalabama.org/article/h-3287.

Meyer MH. 1997. Master Gardener Projects—Making Connections. Horttechnology. 7(4):339–344. doi:https://doi.org/10.21273/HORTTECH.7.4.339.

National Institute of Food and Agriculture (NIFA). 2016. Cooperative Extension History. United States Department of Agriculture. [accessed 2021 Sep 23]. https://nifa.usda.gov/cooperative-extension-history.

Newberry MG, Israel GD. 2018. Motivations for and Psychological Benefits of Participating in the Florida Master Naturalist Program. J Ext. 56(2):Article 7. https://tigerprints.clemson.edu/joe/vol56/iss2/7/.

Relf D, McDaniel A. 1994. Assessing Master Gardeners' Priorities. Horttechnology. 4(2):181–184. doi:https://doi.org/10.21273/HORTTECH.4.2.181.

Ruppert KC, Bradshaw J, Stewart AZ. 1997. The Florida Master Gardener Program: History, Use, and Trends. 7(4):348–353. doi:https://doi.org/10.21273/HORTTECH.7.4.348.

Schrock DS, Meyer M, Ascher P, Snyder M. 2000. Reasons for becoming involved as a master gardener. Horttechnology. 10(3):626–630. doi:https://doi.org/10.21273/HORTTECH.10.3.626.

Snyder M, Omoto AM. 2008. Volunteerism: Social Issues Perspectives and Social Policy Implications. Soc Issues Policy Rev. 2(1):1–36. doi:https://doi.org/10.1111/j.1751-2409.2008.00009.x.

Strong R, Harder A. 2011. The Effects of Florida Master Gardener Characteristics and Motivations on Program Participation. J Ext. 49(5):Article 10. https://archives.joe.org/joe/2011october/a10.php.

Takle B, Haynes C, Schrock DS. 2017. Using Demographic Survey Results to Target Master Gardener Volunteer Recruitment. J Ext. 55(3):Article 4. https://tigerprints.clemson.edu/joe/vol55/iss3/4

Takle B, Haynes C, Schrock DS. 2016. Motivation and Retention of Iowa Master Gardeners. Horttechnology. 26(4):522–529. doi:https://doi.org/10.21273/HORTTECH.26.4.522.

VanOverschelde K. 2017. The Effect of Volunteer Demographics on Nonprofit Volunteer Retention. [Minneapolis, Minnesota]: Walden University. [accessed 2021 Nov 22]. https://scholarworks.waldenu.edu/dissertations/4337.

Waliczek TM, Boyer R, Zajicek JM. 2002. The master gardener program: Do the benefits of the program go beyond improving the horticultural knowledge of participants? Horttechnology. 12(3):432–436. doi:https://doi.org/10.21273/HORTTECH.12.3.432.

CHAPTER II

METHODOLOGY

The purpose of this quantitative assessment is to evaluate the perspectives and experiences of those involved in the Alabama Extension Master Gardener (EMG) program. This research is expected to contribute to future EMG programming and management.

Research Objectives

The objectives of this study were to:

1. Determine the demographics and activity preferences of Alabama EMG volunteers.
2. Identify the motivations of EMG volunteers for involvement in the program.
3. Compare the experiences and perspectives of the EMG personnel and volunteers.

Population and Sample

The population for this study encompassed Alabama Extension personnel (43 County Extension Office Administrators, 37 County Extension Coordinators, and 12 Home Grounds Regional Extension Agents) and (Auburn University Extension 2021) 1,824 EMG volunteers reporting hours in 2019 from 48 of Alabama's 67 counties. See figure 2.1.

The survey sample group included a total of 34 County Extension Office Administrators (79.1%), 35 County Extension Coordinators (CEC) (94.6%), 12 Home Grounds Regional Extension Agent (REA) (100.0%), (Auburn University Extension 2021) and 864 EMG volunteer surveys (47.3%). The sample survey responses were received by 9 Feb. 2021.

Research Design

This study consisted of four surveys created using Qualtrics Survey Software. Each of the four groups involved in the EMG program received a survey tailored to that group. Before distribution, the surveys, recruitment letters, and invitation emails were reviewed and approved by the Auburn University Institutional Review Board for use from 30 Nov. 2020 to 9 Feb. 2021.

All potential participants received invitation emails on 7 Dec. 2020. Each email contained a unique information letter to the four study groups. Each letter included a link to the Qualtrics survey, explained the purpose of the study, and stated that participation would be voluntary. The surveys remained open for two months. Participants received reminder emails during weeks 3, 5, 7, and 9.

Instrumentation

Questions for the volunteer survey were derived from a national survey and previous studies from the University of Georgia and Iowa State University (Takle et al. 2016; Dorn et al. 2018). The EMG volunteer survey was the longest and was composed of four sections: demographics, VSA preferences, motivations, and perceived benefits.

The EMG volunteer demographic questions included birth year, gender, race, level of education, relationship status, income, and employment status. Background questions consisted of service status, active years of service, service hours in 2019 (the latest complete program cycle), and zip code. To determine master gardener VSA preferences, participants indicated their level of involvement on a 5-point Likert scale (1 = never, 5 = always) in 25 common VSAs.

Volunteer motivation was assessed using the Volunteer Functions Inventory (VFI) (Clary et al. 1998). The VFI is composed of statements designed to measure six motivational functions: Values, Understanding, Social, Career, Protective, and Enhancement. Participants indicated the importance of 30 statements on a 5-point Likert scale (1 = unimportant; 5 = extremely important). Slight modifications to the questions improved clarity and relevance to the EMG program. To measure the perceived benefits of the program from EMG volunteers, participants indicated their level of agreement with 17 items on a 5-point Likert scale (1 = Strongly Disagree; 5 = Strongly Agree). This instrument is referred to as Return on Investment by Takle et al.

(2016) and appears in previous studies by Rohs and Westerfield (1996) and Schrock et al. (2000).

The personnel surveys were similar in length but shorter than the volunteer survey. To measure the success of the program, EMG staff and volunteers were asked to "Describe your measure of a successful program – or suggest one strategy for improving the local program if you feel it is not currently successful." Questions about the experiences of EMG personnel included years of experience working with volunteers, time spent recruiting, training, and managing EMG volunteers annually.

Data Coding

Before data analysis of the EMG volunteer survey, incomplete data was removed and organized. Calculations determined the following volunteer characteristics:

Age and Gender. Volunteers were assigned one of six age groups: <40, 40-49, 50-59, 60-69, 70-79, and 80 and above based on a calculation made from reported birth year to the year of data collection (2020). Participants indicated gender based on two choices, female, and male.

Service Status. Each EMG volunteer was assigned a code of either active, intern, or inactive based on self-reported service status. An active volunteer has completed an approved Cooperative Extension System Master Gardener Training Program, paid annual dues, fulfilled the volunteer service requirements (50 hours in the training year and 25 hours annually), and completed 10 hours of continuing education units (CEUs) (Carroll 2021). Intern volunteers are currently participating, but have not yet completed the Master Gardener volunteer training and certification. Inactive volunteers failed to meet one or more of these requirements.

County Extension Region. Volunteers reported their residential zip codes. Participants were assigned one of the following seven Alabama Extension regions, established by the Alabama Extension service: Northwest (Colbert, Fayette, Franklin, Lamar, Lauderdale,

Lawrence, Limestone, Marion, Morgan, Walker, Winston); Northeast (Blount, Cherokee, Cullman, DeKalb, Etowah, Jackson, Madison, Marshall); West Central (Choctaw, Dallas, Greene, Hale, Marengo, Perry, Pickens, Sumter, Tuscaloosa); Central (Autauga, Bibb, Chilton, Elmore, Jefferson, Lowndes, Saint Clair, Shelby); East Central (Calhoun, Chambers, Clay, Cleburne, Lee, Macon, Russell, Talladega, Tallapoosa); Southwest (Baldwin, Butler, Clarke, Conecuh, Escambia, Mobile, Monroe); and Southeast (Barbour, Bullock, Crenshaw, Coffee, Covington, Dale, Geneva, Henry, Houston, Pike). See Figure 2.2 (ACES 2021).

Active years of service. The number of active years of service is the number of years an EMGV has maintained active status (50 hours in the training year and 25 hours annually, plus 10 hours of CEUs). Participants selected one of the six categories ranging from: "1-3 years," "4-6 years," "7-9 years," "10-12 years," "13-15 years," and ">15 years."

Service Hours. Participants reported the number of volunteer service hours they completed in 2019 (the last complete program cycle before the survey) and 2020 (the year of data collection). Participants selected one of the following seven categories; "Less than 25 hours," "Between 25 and 49 hours," "Between 50 and 74 hours," "Between 75 and 99 hours," "Between 100 and 124 hours," "Between 125 and 149 hours," and "150 hours or more."

Volunteer Participation. EMG volunteer participation was calculated based on active years of service and service hours in 2019. Data were divided into low and high categories based on the median values for active EMG; less than and greater than six years of service and above and below 75 service hours. Volunteers were assigned one of four categories: low years, low hours; low years, high hours; high years, low hours; high years, high hours.

Satisfaction. The item "How dissatisfied or satisfied are you with your experience as an Extension Master Gardener?" measured volunteer satisfaction with the EMG program. The 5-

point Likert scale created a satisfaction score for each participant ranging from 0= very dissatisfied to 5=very satisfied.

Involvement. Each EMG volunteer was assigned an involvement score based on the sum of VSAs for which the participant indicated being involved "often" or "always."

Data Analysis

Data from the four surveys were analyzed using the SPSS software package (IBM SPSS Statistics for Macintosh 2021). SPSS was used to perform several tests to analyze data. Specific methods are as follows:

Demographics. Descriptive statistics established frequencies and percentages that created demographic and background profiles of EMG volunteers. Demographic characteristics included age, gender, race, level of education, relationship status, income, and employment status. Volunteer background characteristics included service status, county extension region, active years of service, and service hours in 2019 (most recent complete program cycle).

Preferences. Descriptive statistics determined frequencies and percentages for VSA involvement. Principal axis factoring with varimax rotation identified themes within VSA involvement. Cronbach's alpha examined the reliability of each theme. ANOVAs and independent t-tests compared the means of VSA involvement and themes and volunteer characteristics such as age, gender, Alabama Extension region, service hours in 2019, and active years of service.

Motivation. Descriptive statistics established group means. Principal axis factoring with oblimin rotation was the extraction method used to identify VFI themes. Cronbach's alpha examined the reliability of each theme. ANOVAs and independent t-tests compared the motivation function means to volunteer characteristics, including age, gender, service status, volunteer participation, and satisfaction.

Benefits. Principal axis factoring with oblimin rotation identified perceived benefits themes. Descriptive statistics established group means, and Cronbach's alpha examined the reliability of each factor.

Success. Qualitative comparisons of open-ended responses were made between data from the personnel and volunteer surveys. Response categories were identified from the open-ended question "Describe your measure of a successful program – or suggest one strategy for improving the local program if you feel it is not currently successful." Descriptive statistics established category frequencies of EMG personnel, including years of experience working with volunteers, time spent recruiting, training, and managing EMG volunteers.

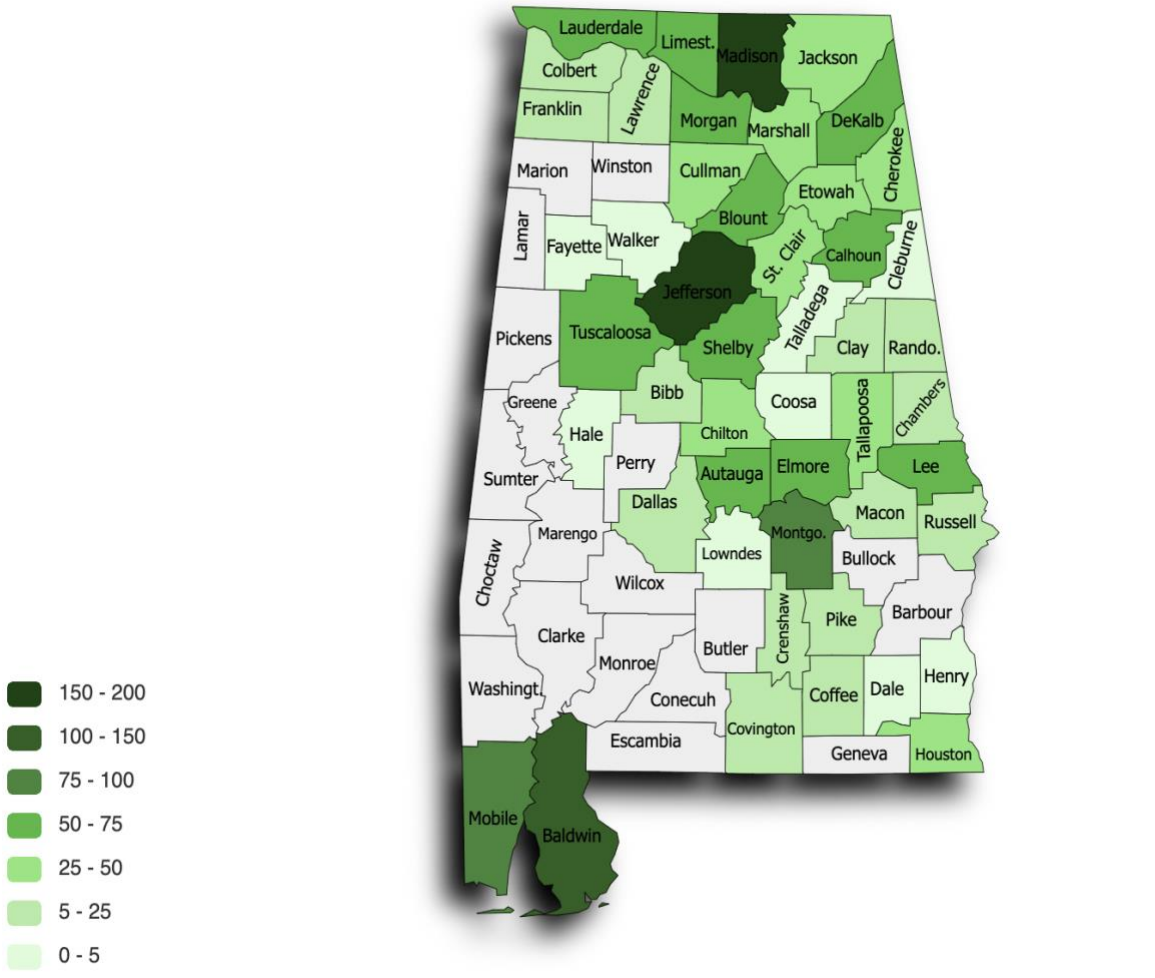

Fig. 2.1. Alabama Extension Master Gardener volunteer population in 2019

SET 1	SET 2	SET 3	SET 4	SET 5	SET 6	SET 7
Colbert	Blunt	Choctaw	Autauga	Calhoun	Baldwin	Barbour
Fayette	Cherokee	Dallas	Bibb	Chambers	Butler	Bullock
Franklin	Cullman	Greene	Chilton	Clay	Clarke	Coffee
Lamar	DeKalb	Hale	Elmore	Cleburne	Conecuh	Crenshaw
Lauderdale	Etowah	Marengo	Jefferson	Coosa	Escambia	Covington
Limestone	Jackson	Perry	Lowndes	Lee	Mobile	Dale
Lawrence	Madison	Pickens	Montgomery	Macon	Monroe	Geneva
Marion	Marshall	Sumter	Shelby	Russell	Washington	Henry
Morgan		Tuscaloosa	St. Clair	Talladega		Houston
Walker		Wilcox		Tallapoosa		Pike
Winston						

Fig. 2.2. Alabama Cooperative Extension System Regions in 2021

References

Alabama Cooperative Extension System. 2021. Commercial Horticulture: Programs, People & Resources. https://www.aces.edu/wp-content/uploads/2021/05/EX-0162-Commercial-Horticulture-Programs-People-and-Educational-Resources_072321L-A.pdf.

Auburn University Extension. 2021. Alabama Cooperative Extension Service Directory. https://ssl.acesag.auburn.edu/directory-new/search.php?&dq=county%20extension%20coordinator&btnS=&pageNumber=1&pageSize=64.

Carroll D. 2021. Calculating Your Service Hours. Lee County Master Gardeners of Alabama. [accessed 2021 Sep 14]. https://www.leemg.org/log-hours.html.

Clary EG, Snyder M, Ridge RD, Copeland J, Stukas AA, Haugen J, Miene P. 1998.

Understanding and assessing the motivations of volunteers: A functional approach. J Pers Soc Psychol. 74(6):1516–1530. doi:https://doi.org/10.1037/0022-3514.74.6.1516.

Dorn ST, Newberry III MG, Bauske EM, Pennisi SV. 2018. Extension Master Gardener Volunteers of the 21st Century: Educated, Prosperous, and Committed. Horttechnology. 28(2):218–229. doi:https://doi.org/10.21273/HORTTECH03998-18.

IBM SPSS Statistics for Macintosh. 2021. Version 28.0. Armonk, New York: IBM Corporation.

Rohs FR, Westerfield RR. 1996 Jul. Factors Influencing Volunteering in the Master Gardener Program. Horttechnology.:281–285. doi:https://doi.org/10.21273/HORTTECH.6.3.281.

Schrock DS, Meyer M, Ascher P, Snyder M. 2000. Reasons for becoming involved as a master gardener. Horttechnology. 10(3):626–630. doi:https://doi.org/10.21273/HORTTECH.10.3.626.

Takle B, Haynes C, Schrock DS. 2016. Motivation and Retention of Iowa Master Gardeners. Horttechnology. 26(4):522–529. doi:https://doi.org/10.21273/HORTTECH.26.4.522.

CHAPTER III

DEMOGRAPHICS AND ACTIVITY PREFERENCES OF ALABAMA EXTENSION MASTER GARDENER VOLUNTEERS

INTRODUCTION

Cooperative Extension History

The Cooperative Extension Service joins with the United States Department of Agriculture (USDA) and the National Institute of Food and Agriculture (NIFA) to bridge land-grant universities and communities. With a presence in every county across the country, Extension agents translate research into education and action. As a result, cutting-edge agricultural research is readily available to communities and businesses who can put knowledge into practice to improve their lives.

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ACES partners with land-grant universities Auburn University, Alabama A&M University, and Tuskegee University to improve Alabama's economy and residents' quality of life by delivering educational programs to each of the 67 counties. These programs evolve to meet the state's changing needs, are research-based, related to current issues, and provided via regional and local Extension Agents (Langcuster 2012).

Extension Master Gardener Program

The Extension Master Gardener program is a partnership between land-grant universities, the Cooperative Extension System, and Master Gardener volunteers. Extension agents train Master Gardener volunteers to be educators. Therefore, the program is called the Extension Master Gardener (EMG) program. Under the direction of the Alabama Cooperative Extension System, EMG volunteers increase the availability of and provide reliable, relevant, and reachable home horticulture information.

The concept of the Master Gardener program traces its roots to Washington State University in 1972. Public demand for home gardening information increased due to rapid urban growth. Extension agent David Gibby, feeling overwhelmed by the large volume of requests, proposed the idea of training volunteers to assist Extension with consumer horticulture education in the community. Results were better than expected, and the EMG program spread quickly.

Today, the EMG program exists in 49 states, the District of Columbia, at least four Canadian provinces, and South Korea. It serves as a model for other volunteer programs. In 2020, an estimated 84,000 EMG volunteers reported 3.1 million service hours and educated 8.4 million clients. Naturally, EMG volunteers helped people improve their physical and mental health, gardening and landscape practices, and awareness of environmental issues. Their work contributed an estimated $88 million in value to the public (EMG National Committee 2020).

The Alabama EMG program is a partnership between the land grant universities (Alabama A&M University, Auburn University, and Tuskegee University), Alabama Extension staff (County Extension Office Administrators, County Extension Coordinators, and Home Grounds Regional Extension Agents), and extension-trained, Master Gardener volunteers. The program started in 1981 when New York Master Gardener Mary Lou McNabb introduced the Master Gardener program concept to Gary Murray, a Madison County Extension Agent. McNabb and Murray, along with the help of a few other Extension Agents, organized the first Alabama EMG training series in Huntsville, Alabama (ACES 2018).

To become an Alabama EMG volunteer, one must finish the 50-hour training program which provides hands-on and classroom instruction and volunteer a total of 50 hours during the year. After year one, EMG volunteers must report a minimum of 25 volunteer service hours annually and pay membership dues and complete 10 hours of continuing education units (CEU) to maintain active status (Carroll 2021). Certified EMG volunteers, Extension agents, and local experts teach classes on vegetable gardening, trees, home lawns, and annual and perennial flowers.

EMG volunteers are an asset to the Alabama Cooperative Extension System. They host public education outreach activities, manage and support teaching gardens, sponsor, or support community gardens, donate fresh produce to charity, assist with research projects including Harvest for Health and the Bee Biodiversity Initiative, and much more (ACES 2018). The EMG volunteer service hours allow Extension personnel to focus their time and effort toward more advanced or technical programming.

The impact the Alabama EMG volunteers have on their local communities is evident. In 2018, Alabama EMGs volunteered 78,920 hours in public education outreach activities, having a

public value of $1.7 million, and maintained teaching gardens in 21 counties with over 400,000 visitors. EMG volunteers sponsored 13 community gardens that donated 12 tons of produce or 96,000 half-cup servings, equal to the retail price of $39,600 in 2018. Harvest for Health is a project led by the University of Alabama Birmingham's Comprehensive Cancer Center and Alabama Extension's Home Grounds Team that uses a backyard garden to teach new, healthy habits to cancer survivors. To date, 492 volunteers have mentored cancer survivors. Pilot studies (2013-2017) showed that gardening significantly improved the diet and health of the cancer survivor participants (ACES 2018).

Demographics

Understanding EMG volunteer demographic information offers direction to ACES personnel for recruitment, training, retention, and, more importantly, EMG volunteers' satisfaction and community impact. It can imply how to adapt training methods and who may be attracted to the program. It also has implications for which service opportunities volunteers may be available. Volunteer demographics can also help in understanding the motivation of volunteers. VanOverschelde (2017) found that in non-profit organizations volunteer age and career motivations are correlated, the younger the volunteer, the higher the career motivations.

While there is no published demographic information for Alabama EMG volunteers, those who live in the Southeast region of the U.S. (Alabama, Georgia, Florida, South Carolina, North Carolina, and Virginia) were slightly older than EMG volunteers in other regions (Dorn et al. 2018). Previous statewide demographic data show an aging volunteer base. Early 2000's EMG volunteer studies in Texas, Missouri, and Oregon revealed that 25.7%, 35.7%, and 40.0% of participants were over 60 years old, respectively (Schrock et al. 2000; Kirsch and VanDerZanden 2002; Waliczek et al. 2002). Recent studies have shown that the percentage of EMG volunteers

over 60 years old has risen to over 75% in Iowa, Mississippi, and nationally (Takle et al. 2017; Dorn et al. 2018; Jacobs 2018).

Studies show that most EMG volunteers are female, white, educated, and affluent (Schrock et al. 2000; Kirsch and VanDerZanden 2002; Strong and Harder 2011; Takle et al. 2017; Dorn et al. 2018; Jacobs 2018). According to the U.S. Bureau of Labor Statistics (2016), women are more likely to volunteer than men, and higher levels of education are associated with volunteers and a predominance of whites.

Preferences

Early accounts of the EMG program indicate an agreement between skilled volunteers and Extension agents. Volunteers received Extension training in exchange for hours spent meeting the public demand for gardening questions. Most spent service hours at Master Gardener clinics set up at different venues such as gardening events, county fairs, libraries, and shopping centers. Volunteer service activities (VSAs) require a significant amount of knowledge, skill, and concentration because they involve transferring knowledge to the public. As time went on, the EMG program expanded to include VSAs that improved the communities and the environment (Relf and McDaniel 1994; Meyer 1997; Ruppert et al. 1997).

Volunteer involvement predicts volunteer satisfaction and commitment (Finkelstein et al. 2005). Surprisingly, there is a lack of knowledge of EMG volunteer involvement. Aside from the work of Dorn et al. (2019), there have been few attempts to quantify or understand VSAs and which volunteer groups support them. This study offers the opportunity to gain a deeper understanding of volunteer involvement. The study measured Alabama EMG volunteer VSA involvement. In addition, VSAs were grouped into involvement themes to determine patterns in EMG volunteer support of VSA themes.

METHODOLOGY

The purpose of the overall assessment was to collect demographic information, activity preferences, perspectives, and experiences of those involved in the Alabama Extension Master Gardener (EMG) program. This article addresses EMG volunteers' volunteer background, demographics, and volunteer service activity preferences.

Population and Sample

The population for the overall study encompassed Alabama Extension personnel who work with Master Gardeners (43 County Extension Office Administrators, 37 County Extension Coordinators, and 12 Home Grounds Regional Extension Agents) (Auburn University Extension 2021) and 1,824 EMG volunteers reporting hours as of 2019. The sample for this portion of the study was drawn from the 1,824 EMG volunteer population.

Research Design

This portion of the study consisted of a survey created using Qualtrics Survey Software (Qualtrics 2020). Before distribution, the survey, recruitment letter, and invitation email were reviewed and approved by the Auburn University Institutional Review Board for use from 30 Nov. 2020 to 9 Feb. 2021.

An invitation email was sent to all potential participants on 7 Dec. 2020. The letters included a link to the Qualtrics survey, explained the purpose of the study, and stated that participation would be voluntary. The survey remained open for two months, and reminder emails were sent out during weeks 3, 5, 7, and 9.

Instrumentation

Questions for the volunteer survey came from a national survey and previous studies from the University of Georgia and Iowa State University (Takle et al. 2016; Dorn et al. 2018). The EMG volunteer survey was composed of four sections: demographics, VSA preferences,

motivations, and perceived benefits. This study addresses Alabama EMG volunteer demographics and activity preferences.

EMG volunteer demographic questions included birth year, gender, race, level of education, relationship status, income, and employment status. Background questions consisted of service status, active years of service, service hours in 2019 (the latest complete program cycle) and zip code. To determine master gardener VSA preferences, participants indicated their level of involvement on a 5-point Likert scale (1 = never, 5 = always) in 25 common VSAs.

Data Coding and Analysis

Before data analysis of the EMG volunteer survey, incomplete data was removed and organized. Calculations determined the following volunteer characteristics:

Age and Gender. Volunteers were assigned one of six age groups: <40, 40-49, 50-59, 60-69, 70-79, and 80 and above based on a calculation made from reported birth year to the year of data collection (2020). Participants indicated gender based on two choices, female and male.

Service Status. Each EMG volunteer was assigned a code of either active, intern, or inactive based on self-reported service status. An active volunteer has completed an approved Cooperative Extension System Master Gardener Training Program, paid annual dues, fulfilled the volunteer service requirements (50 hours in the training year and 25 hours annually), and completed 10 hours of continuing education units (CEUs). Intern volunteers are currently participating, but have not yet completed the Master Gardener volunteer training and certification but have not completed all parts of the certification process. Inactive volunteers failed to meet one or more of these requirements.

County Extension Region. Participants were assigned one of the following seven Alabama Extension regions established by the Alabama Extension service and counties: Northwest (Colbert, Fayette, Franklin, Lamar, Lauderdale, Lawrence, Limestone, Marion,

Morgan, Walker, Winston); Northeast (Blount, Cherokee, Cullman, DeKalb, Etowah, Jackson, Madison, Marshall); West Central (Choctaw, Dallas, Greene, Hale, Marengo, Perry, Pickens, Sumter, Tuscaloosa); Central (Autauga, Bibb, Chilton, Elmore, Jefferson, Lowndes, Saint Clair, Shelby); East Central (Calhoun, Chambers, Clay, Cleburne, Lee, Macon, Russell, Talladega, Tallapoosa); Southwest (Baldwin, Butler, Clarke, Conecuh, Escambia, Mobile, Monroe); and Southeast (Barbour, Bullock, Crenshaw, Coffee, Covington, Dale, Geneva, Henry, Houston, Pike). Volunteers reported their residential zip codes.

Active years of service. The number of active years of service is the number of years an EMGV has maintained active status (50 hours in the training year and 25 hours annually, plus 10 hours of CEUs). Participants selected one of the six categories ranging from: "1-3 years," "4-6 years," "7-9 years," "10-12 years," "13-15 years," and ">15 years."

Service Hours. Participants reported the number of volunteer service hours they completed in 2019 (the last complete program cycle before the survey) and 2020 (the year of data collection). Participants selected one of the following seven categories; "Less than 25 hours," "Between 25 and 49 hours," "Between 50 and 74 hours," "Between 75 and 99 hours," "Between 100 and 124 hours," "Between 125 and 149 hours," and "150 hours or more."

Involvement. Each EMG volunteer was assigned an involvement score based on the sum of VSAs for which the participant indicated being involved "often" or "always." Data from the survey were analyzed using the SPSS software package (IBM SPSS Statistics for Macintosh 2021). SPSS was used to perform several tests to analyze data. Specific methods are as follows:

Analysis of demographic and background profiles of EMG volunteers included descriptive statistics to establish frequencies and percentages. Demographic characteristics included age, gender, race, level of education, relationship status, income, and employment

status. Volunteer background characteristics included service status, county extension region, active years of service, and service hours in 2019 (most recent complete program cycle). Descriptive statistics also determined frequencies and percentages for VSA involvement.

Exploratory factor analysis (EFA) is used to discover the factor structure of a measure and has three basic steps; determine the number of factors, choose an extraction method, and select a rotation method (Newsom 2005). In this study, the EFA was detected four VSA involvement factors. The extraction method used was principal axis factoring because the data were non-normally distributed and an oblique rotation (direct oblimin) was used the correlation between factors was greater than 0.32 (Costello and Osborne 2005).

Cronbach's alpha examined the reliability of each factor with three or more items. The reliability of factors with two items was examined using the Spearman-Brown coefficient (Eisinga et al. 2013). ANOVAs and independent t-tests compared the means of VSA involvement and themes and volunteer characteristics such as age, gender, Alabama Extension region, service hours in 2019, and active years of service.

RESULTS

Response Rates

The response rate calculation was the number of completed surveys received divided by the sample population. The number of completed surveys included 864 EMG volunteer surveys, and the volunteer sample population was 1,824, yielding a 48.4% response rate. The Alabama Extension region with the highest response rate was Northwest (58.7%), followed by East Central (53.9%), Central (48.7%), Southeast (47.3%), Southwest (46.5%), Northeast (37.3%), and West Central (12.3%) (see Table 3.1).

Profile of EMG Volunteers

Alabama EMG volunteers' age, gender, race, education level, income, and employment status is comparable to data from similar studies. EMG volunteers responding to the survey have a mean age of 66.9 years ranging from 18 to 87 years. The majority are over 60 years of age (85.2%), with only a small percentage less than 50 years of age (4.0%). EMG volunteers are predominantly female (80.5%), white (96.0%), and well educated, with 71.2% having earned a bachelor's degree or higher. Most are affluent, with 80.6% indicating their annual household income is more than $50,000. While some participants are employed, most are retired (76.9%) (Table 3.2).

EMG Volunteer Program Background

Based on self-reported status, 72.7% of participants had active service status, 15.2% were interns, and 11.3% were inactive. Since becoming certified, most participants (62.3%) have completed between one and six years of active service. In 2019, 84.3% of participants met the annual service hour requirement of 25 hours for certified EMG volunteers, and 51.6% reported 75 or more service hours (Table 3.3).

Involvement Scores

Each EMG volunteer was assigned an involvement score based on the sum of VSAs for which the participant indicated being involved "often" or "always." Involvement scores ranged from 0 to 25 and had a mean of 3.7 activities per EMG volunteer at the "often" or "always" level (Table 3.4). The VSAs "answering clientele questions one-on-one" and "assisting with community festivals or events were highly supported." More than half of respondents indicated involvement at the "sometimes," "often," or "always" level. There were 12 VSAs that EMG volunteers were involved at the "never" level more than half of the time (Figure 3.1).

ANOVAs and independent t-tests compared the means of VSA involvement scores to volunteer age, gender, Alabama Extension region, service hours, and active years of service.

There was a significant difference in involvement when analyzed by age, $F(5,762)=5.27$, $p<0.001$ and volunteer service hours in 2019, $F(6, 723)=6.785$, $p<0.001$. Participants in the <40 age category had the highest involvement score (m=9.2, SD=8.4), and participants in the 80-89 age category had the lowest involvement score (m=2.3, SD=2.3). Participants in the 150 or more hours category had the highest involvement score (m=5.0, SD=4.5) and those in the <25 hours category had the lowest involvement score (m=2.8, SD=4.5) (Table 3.4).

Involvement Themes

To determine master gardener VSA preferences, participants indicated their level of involvement on a 5-point Likert scale (1 = never, 5 = always) in 25 common VSAs. Principal axis factor analysis with varimax rotation was used to discover themes in VSA preferences. The Kaiser-Meyer-Olkin (KMO) measure, which confirms the sample adequacy was KMO= .911. Four items were removed from the analysis due to KMO values of individual items being less than .5 (IBM SPSS Statistics 2020). The analysis revealed four factors among 19 VSAs that accounted for 57% of the variance. The reliability analysis showed that all four factors had a Cronbach's alpha level higher than 0.742.

Factor 1 was labeled youth. The youth theme contained six VSAs related to youth. These included: assisting 4-H with garden-related projects or programs, assisting 4-H with non-garden related projects or programs, assisting youth education programs that are not in a garden, assisting or coordinating a gardening project at a correctional facility, judging or sponsoring county fair exhibit, and providing clerical or other support at the local county extension office. Cronbach's alpha for Factor 1 was .822.

Factor 2 was labeled media because it contained four VSAs related to various horticulture promotion methods. The VSAs included: contributing horticulture articles for a column in a local paper or magazine, writing about horticultural topics for an internet website, Extension blog, or

other social media, writing/compiling Extension publications or educational materials, and participating in radio and TV programs. The Cronbach's alpha for Factor 2 was .825.

Factor 3 was labeled hands-on because it contained four VSAs related to active gardening tasks. These included: assisting or coordinating projects on municipal green space, coordinating, working in, or mentoring at a community garden, participating in city/county beautification projects, and assisting or coordinating a demonstration garden or plot. The Cronbach's alpha was .742.

Factor 4 was labeled problem-solving because it contained five VSAs that responded to individual requests. The VSAs included: answer clientele questions one-on-one, staffing plant clinics or asking a master gardener booth, assisting with EMG intern training, offering garden consultation and advising to private or public properties, preparing and presenting programs for adults, and assisting with community festivals or events. The Cronbach's alpha for Factor 4 was .783.

The problem-solving (m=2.4, SD=0.9) and the hands-on (m=2.4, SD=1.0) themes had the highest mean (greatest participation), followed by youth (m=1.7, SD=0.8), and media (m=1.4, SD=0.7) (Table 3.5).

Involvement Theme Scores

There was a significant difference in the youth VSA involvement theme score when analyzed by age $F(5, 760)=6.815$, $p<0.001$, and Alabama Extension region $F(6, 766)=2.693$, $p=0.014$. Participants in the <40 age category had the highest score ($m=2.8$, $SD=1.2$), and participants in the 80 and above age category had the lowest score ($m=1.4$, $SD=0.4$). Participants in the East Central region had the highest score ($m=1.8$, $SD=0.8$), and participants in the Southwest region had the lowest score ($m=1.4$, $SD=0.6$) (Table 3.5). Perhaps younger volunteers participate in youth themed VSA's because they have connections with young families. Parental

and youth participation in volunteer organizations has been shown to enhance human and social capital (Bekkers 2005).

There was a significant difference in the media VSA involvement theme score when analyzed by age $F(5, 761)=5.895$, $p<0.001$, Alabama Extension region $F(6,766)=2.798$, $p=0.010$, service hours in 2019 $F(6, 721)=8.108$, $p<0.001$, and active years of service $F(5,661)=3.365$ $p=0.005$. Participants in the <40 age category had the highest score ($m=2.5$, $SD=1.5$), and participants in the 80 and above age category had the lowest score ($m=1.4$, $SD=0.9$). Participants in the Northwest region had the highest score ($m=1.6$, $SD=1.0$), and the East Central region had the lowest score ($m=1.3$, $SD=0.6$). Participants in the 150 or more hours category had the highest score ($m=1.7$, $SD=0.9$), and participants in the 75-99 hours category had the lowest score ($m=1.2$, $SD=0.5$). Participants in the >15 active years of service category had the highest score ($m=1.7$, $SD=1.0$), and participants in the 1-3 years of active service had the lowest score ($m=1.3$, $SD=0.6$) (Table 3.5). Perhaps participants with more service hours feel confident and enthusiastic about sharing knowledge.

There was a significant difference in the hands-on VSA involvement theme score when analyzed by gender $t(795)= 2.748$, $p=0.006$, and service hours in 2019 $F(6,721)=7.151$, $p<0.001$. Male participants had a slightly higher score ($m=2.6$, $SD=1.0$), and female participants ($m=2.3$, $SD=1.0$). Participants in the 150 or more hours category had the highest score ($m=2.7$, $SD=1.0$), and participants in the <25 hours category had the lowest score ($m=2.0$, $SD=1.0$) (Table 3.5). While there is limited information on gender roles within gardening and volunteering, the results align with the findings of Bhatti and Church (2000) that men are more concerned with garden maintenance and women with cultivation.

There was a significant difference in the problem-solving VSA involvement theme score when analyzed by Alabama Extension region $F(6, 767)=5.369$, $p<0.001$, active years of service $F(5, 661)=8.672$, $p=<0.001$, and service hours in 2019 $F(6, 721)=20.746$, $p<0.001$. Participants in the Southeast region had the highest score (m=2.7, SD=1.0), and the West Central region had the lowest score (m=2.0, SD=0.9). Participants in the 10-12 active years of service category had the highest score (m=2.8, SD=0.8), and participants in the 1-3 active years of service category had the lowest score (m=2.2, SD=0.9). Participants in the 150 or more hours category had the highest score (m=2.9, SD=0.9), and participants in the <25 hours category had the lowest score (m=1.9, SD=0.9) (Table 3.5). In summary, volunteers with higher problem-solving VSA involvement scores have 10-12 years of active service, 150 or more service hours, and live in the Southeast Alabama Extension region.

DISCUSSION

Demographics

Studies show that the percentage of Tennessee, Iowa, and nationwide EMG volunteers over 60 years old is 69%, 64.3%, and 78.3%, respectively, compared to 85.2% of in the current study (Leathers 2015; Takle et al. 2017; Dorn et al. 2018). According to the U.S. Census Bureau (2019) the population over 60 years old is higher in Alabama when compared to the national average, Tennessee, and Iowa for the respective year of study. The older population may explain why the percentage of retired survey participants (76.9%) is higher in compared to Tennessee (57%), Iowa (46.5%), and national (64.1%), EMG studies (Leathers 2015; Takle et al. 2017; Dorn et al. 2018).

The EMG volunteer population in Alabama is over 80% female and nearly all (96%) white. These findings are consistent with data in similar studies (Leathers 2015; Takle et al. 2017; Jacobs 2018; Dorn et al. 2018) but inconsistent with state demographic data. In 2019, the

population of Alabama was 51.7% female and 65.3% white (U.S. Census Bureau 2019a). However, the lack of gender and racial diversity is not unique to the EMG program and is common with volunteering in general (Bureau of Labor Statistics 2016).

This study suggests that Alabama EMG volunteers are well educated, with more than 70% earning a bachelor's degree or higher. Tennessee, Iowa, Mississippi, and national EMG studies had similar findings (Leathers 2015; Takle et al., 2017; Jacobs 2018; Dorn et al. 2018). The U.S. Bureau of Labor Statistics (2016) found that higher education levels increase individuals' likelihood of volunteering. Higher education levels might explain why over 80% of participants surpass Alabama's U.S. Census median annual income level (U.S. Census Bureau 2019b) since higher education is associated with higher earnings (Torpey 2018).

Alabama EMG volunteers are dedicated, as indicated by the number of active years as a volunteer and the number of service hours completed in 2019. The national median of hours served by all volunteers is 52 hours (U.S. Bureau of Labor Statistics 2016); Alabama EMG volunteers surpassed this as over half (51.6%) reported 75 or more service hours.

The goal of this study was to describe EMG volunteer background and demographic information. The demographic profile of Alabama EMG volunteers from this study and similar studies were over 60 years old, female, white, affluent, college graduates, and retired. Alabama had the highest percentage of EMG volunteers over 60 years old (85.2%) and retired (76.9%). This study allows for a deeper understanding of Alabama EMG volunteers and establishes a baseline of demographic data to compare future EMG program studies.

Preferences

Alabama EMG volunteers are highly involved in the program. The following VSAs: answering clientele questions one-on-one and assisting with community festivals or events were highly supported. This study suggests that age and service hours are significant predictors of

involvement. Involvement in VSAs is highest amongst younger volunteers and declines as volunteer age increases. Perhaps the findings of this study could be explained by a study that showed food gardeners ages 18 to 34 were the fastest-growing age group in the gardening population, growing 63% between 2008 and 2013 (National Gardening Association 2014). The <40 age group is currently the smallest in the Alabama EMG volunteer population. Therefore, it should be targeted recruitment efforts.

High participation levels may also be attributed to Alabama EMG volunteer program's large retirement population. Participants who are making the transition to retirement may find meaning in volunteering for several reasons. According to Cousineau (National Gardening Association 2014), these reasons may include; the need for autonomy and personal challenge; confronting aging, health, and dying; the complexities of time use in retirement; facing fear/anxiety about transitioning to retirement, including the loss of purpose and the loss of personal connections; the influence of finances on volunteer decisions; and making a difference in people's lives, including deriving personal value from helping others and helping in the community. However, further research is needed to measure volunteer involvement levels in programs with large retirement populations.

The factor analysis results allowed a closer look at VSA involvement theme scores. Overall, problem-solving, and hands-on VSAs are the most preferred among Alabama EMG volunteers. Problem-solving VSAs involve responding to individual inquiries. Extension region and active years of service were significant predictors of the problem-solving VSA involvement score. On average, muscle mass and strength start declining rapidly around 60-70 years of age (Dodds et al. 2014). Perhaps seasoned EMG volunteers feel competent in problem-solving than other service activities due to decreased mobility. Lower scores of volunteers with 1-3 years of

active service may indicate fear that the volunteer is not qualified to fill the role. More emphasis on additional training and workshops would increase volunteer-perceived benefits such as learning.

The hands-on VSAs involve active gardening tasks. Gender was a significant predictor of hands-on VSA involvement scores. However, gender should be offered as a suggested predictor as male volunteers had a slightly higher mean involvement score theme than female volunteers. Suggesting hands-on themed VSAs to men may be helpful during recruitment efforts. A study on the Tennessee Master Gardener program found that understanding the ages and stages of youth development was higher for female EMG volunteers (Leathers, 2015). Still, further research is needed to understand gender differences in VSA involvement.

Youth VSAs were related to youth. Alabama Extension region was a significant predictor of youth VSA involvement scores. Scores were highest among those who live in the East Central Alabama Extension region. Volunteers in the <40 years old age group had a significantly higher mean involvement score than other age groups. Perhaps younger volunteers' higher school is attributed to the fact that they may have children involved youth volunteer organizations such as 4-H.

The media VSA involved various horticultural promotion methods and had the lowest involvement score. Involvement scores were higher among those who live in the Northwest Alabama Extension region. Interestingly, scores were higher among those who are in the <40 age group and have >15 years of active service. Perhaps younger volunteers are involved with promoting horticulture topics through writing for internet websites, Extension blogs, or other social media. On the other hand, there may be a small number of older volunteers that are trained and or have an interest in promoting horticulture.

In conclusion, highly involved EMG volunteers were younger and had 150 or more service hours in 2019. EMG volunteers most involved with youth themed VSAs are <40 years old and live in the East Central Alabama Extension region. Those most involved with the media-themed VSAs are <40 years old, live in the Northwest region, have more than 15 active years of service, and had 150 or more service hours in 2019. Those most involved with the problem-solving themed VSAs are <40 years old, live in the Southeast Extension region, have 10-12 years of active service, and had 150 or more service hours in 2019. Those most involved with the hands-on themed VSAs are male and had 150 or more service hours in 2019.

References

Alabama Cooperative Extension System. 2018. What is a Master Gardener: Our Beginnings. [accessed 2021 Sep 8]. https://mg.aces.edu/about/.

Auburn University Extension. 2021. Alabama Cooperative Extension Service Directory. https://ssl.acesag.auburn.edu/directory-new/search.php?&dq=county%20extension%20coordinator&btnS=&pageNumber=1&pageSize=64.

Bekkers R. 2005. Charity begins at home: How socialization experiences influence giving and volunteering. University of Groningen.

Bhatti M, Church A. 2000. 'I never promised you a rose garden': gender, leisure and home-making. Leis. 19(3):183–197. doi:https://doi.org/10.1080/02614360050023071.

Bureau of Labor Statistics. 2016 Feb 25. Voulnteering in the United States — 2015. US Department of Labor. [accessed 2021 Oct 9]. https://www.bls.gov/news.release/pdf/volun.pdf.

Carroll D. 2021. Calculating Your Service Hours. Lee County Master Gardeners of Alabama. [accessed 2021 Sep 14]. https://www.leemg.org/log-hours.html.

Costello AB, Osborne J. 2005. Best practices in exploratory factor analysis: Four recommendations for getting the most from your analysis. Pract Assess Res Eval. 10(10):86–99. doi:https://doi.org/10.7275/jyj1-4868. : https://scholarworks.umass.edu/pare/vol10/iss1/7.

Cousineau L. 2016. Older Adult Volunteers: Understanding the meaning of volunteering in the transition to retirement. [Ontario, Canada]: University of Waterloo. http://hdl.handle.net/10012/11001.

Dodds RM, Syddall HE, Cooper R, Benzeval M, Deary IJ, Dennison EM, Der G, Gale R C, Inskip HM, Jagger C, et al. 2014. Grip strength across the life course: normative data from twelve British studies. PloS one. 9(12). doi:10.1371/journal.pone.0113637.

Dorn ST, Newberry III MG, Bauske EM, Pennisi SV. 2018. Extension Master Gardener Volunteers of the 21st Century: Educated, Prosperous, and Committed. Horttechnology. 28(2):218–229. doi:https://doi.org/10.21273/HORTTECH03998-18.

Dorn ST, Newberry III MG, Bauske EM, Pennisi SV. 2019. Are We on the Same Page? Exploring National, State, and Local Educational-response Themes for Extension Master Gardener Coordinators and Volunteers. Hortscience. 54(3):568–575. doi:https://doi.org/10.21273/HORTSCI13679-18.

Eisinga R, Grotenhuis M, Pelzer B. 2013. The reliability of a two-item scale:Pearson, Cronbach, or Spearman-Brown? Int J Public Health. 58(4):637–42. doi:10.1007/s00038-012-0416-3.

Extension Master Gardener National Committee. 2020. Extension Master Gardener 2020 National Report Overview. [accessed 2021 Oct 5]. https://usdaars.maps.arcgis.com/apps/dashboards/f29368e13d5b4cefa6f21c050a1f8c7e.

Finkelstein MA, Penner LA, Brannick MT. 2005. Motive, role identity, and prosocial personality as predictors of volunteer activity. Soc Behav Pers. 33(4):403–418. doi:https://doi.org/10.2224/sbp.2005.33.4.403.

IBM SPSS Statistics for Macintosh. 2021. Version 28.0. Armonk, New York: IBM Corporation.

Jacobs AP. 2018. Exploring the Relationship between Volunteer Motives, Satisfaction, Commitment, and Intention to leave the Mississippi Master Gardener Program. [Starkville, Mississippi]: Mississippi State University. https://scholarsjunction.msstate.edu/td/2177.

Kirsch E, VanDerZanden AM. 2002. Demographics and Volunteer Experiences of Oregon Master Gardeners. Horttechnology. 12(3):505–508. doi:https://doi.org/10.21273/HORTTECH.12.3.505.

Langcuster J. 2012. Alabama Cooperative Extension System (ACES). In: Encyclopedia of Alabama. [accessed 2021 Oct 13]. http://www.encyclopediaofalabama.org/article/h-3287.

Leathers AB. 2015. Identifying and assessing youth volunteer competencies of adult Tennesee Master Gardeners. [Nashville, Tennessee]: Tennessee State University. https://digitalscholarship.tnstate.edu/dissertations/AAI1592028/.

Meyer MH. 1997. Master Gardener Projects—Making Connections. Horttechnology. 7(4):339–344. doi:https://doi.org/10.21273/HORTTECH.7.4.339.

National Gardening Association. 2014. Garden to table: A 5-year look at food gardening in America. Williston, Vermont. [accessed 2021 Nov 12]. https://garden.org/special/pdf/2014-NGA-Garden-to-Table.pdf.

National Institute of Food and Agriculture (NIFA). 2016. Cooperative Extension History. United States Department of Agriculture. [accessed 2021 Sep 23]. https://nifa.usda.gov/cooperative-extension-history.

Newsom J. 2005. A Quick Primer on Exploratory Factor Analysis. http://web.cortland.edu/andersmd/psy341/efa.pdf.

Qualtrics. 2020. Qualtrics. Provo, Utah, USA: Qualtrics. https://www.qualtrics.com.

Relf D, McDaniel A. 1994. Assessing Master Gardeners' Priorities. Horttechnology. 4(2):181–184. doi:https://doi.org/10.21273/HORTTECH.4.2.181.

Ruppert KC, Bradshaw J, Stewart AZ. 1997. The Florida Master Gardener Program: History, Use, and Trends. Horttechnology. 7(4):348–353. doi:https://doi.org/10.21273/HORTTECH.7.4.348.

Schrock DS, Meyer M, Ascher P, Snyder M. 2000. Reasons for becoming involved as a master gardener. Horttechnology. 10(3):626–630. doi:https://doi.org/10.21273/HORTTECH.10.3.626.

Strong R, Harder A. 2011. The Effects of Florida Master Gardener Characteristics and Motivations on Program Participation. J Ext. 49(5):Article 10. https://archives.joe.org/joe/2011october/a10.php.

Takle B, Haynes C, Schrock DS. 2016. Motivation and Retention of Iowa Master Gardeners. Horttechnology. 26(4):522–529. doi:https://doi.org/10.21273/HORTTECH.26.4.522.

Takle B, Haynes C, Schrock DS. 2017. Using Demographic Survey Results to Target Master Gardener Volunteer Recruitment. J Ext. 55(3):Article 4. https://tigerprints.clemson.edu/joe/vol55/iss3/4

Torpey E. 2018 Apr. Measuring the value of education. Bureau of Labor Statistics. https://www.bls.gov/careeroutlook/2018/data-on-display/education-pays.htm?view_full.

U.S. Census Bureau. 2019a. Age and Sex. Report No.: S0101. [accessed 2021 Sep 27]. https://data.census.gov/cedsci/table?q=age%20and%20sex&tid=ACSST1Y2019.S0101.

U.S. Census Bureau. 2019b. Income in the past 12 months (in 2019 inflation-adjusted dollars). Report No.: S1901. [accessed 2021 Oct 9]. https://data.census.gov/cedsci/table?q=income%20alabama&t=Income%20and%20Poverty&tid=ACSST1Y2019.S1901.

VanOverschelde K. 2017. The Effect of Volunteer Demographics on Nonprofit Volunteer Retention. [Minneapolis, Minnesota]: Walden University. [accessed 2021 Nov 22]. https://scholarworks.waldenu.edu/dissertations/4337.

Waliczek TM, Boyer R, Zajicek JM. 2002. The master gardener program: Do the benefits of the program go beyond improving the horticultural knowledge of participants? Horttechnology. 12(3):432–436. doi:https://doi.org/10.21273/HORTTECH.12.3.432.

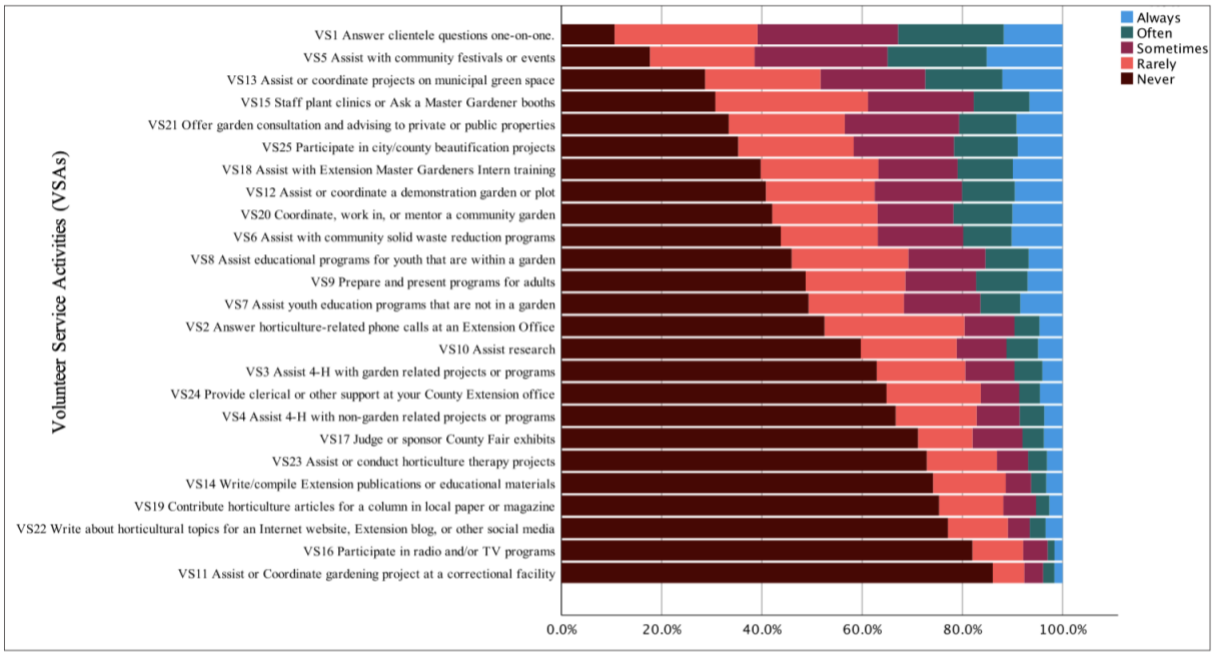

Fig. 3.1. Frequency of Alabama EMG volunteer involvement in each VSA

Table 3.1. Extension region response rates for EMG volunteers in Alabama

Region	AL Counties Responding (n)	Responses (n)	Volunteers as of 2019 (n)	Response Rate (%)
Northwest[a]	7 of 11	115	196	58.7
Northeast[b]	8 of 8	167	448	37.3
West Central[c]	2 of 9	14	115	12.3
Central[d]	8 of 8	254	522	48.7
East Central[e]	8 of 9	117	217	53.9
Southwest[f]	2 of 7	100	215	46.5
Southeast[g]	7 of 10	52	110	47.3

[a] Includes data from Colbert, Fayette, Lamar, Lauderdale, Lawrence, Limestone, and Morgan counties.
[b] Includes data from Blount, Cherokee, Cullman, DeKalb, Etowah, Jackson, Madison and Marshall counties.
[c] Includes data from Hale and Tuscaloosa counties.
[d] Includes data from Autauga, Bibb, Chilton, Elmore, Jefferson, Lowndes, Montgomery, Saint Clair and Shelby counties.
[e] Includes data from Calhoun, Chambers, Clay, Cleburne, Lee, Macon, Russell, Talladega and Tallapoosa counties.
[f] Includes data from Baldwin and Mobile counties.
[g] Includes data from Crenshaw, Coffee, Covington, Dale, Henry, Houston and Pike counties.

Table 3.2. Demographic profile of Alabama EMG volunteers

	Frequency (n)	Percent (%)
Age	mean = 66.9 years	
<40	13	1.6%
40-49	19	2.4%
50-59	87	10.9%
60-69	354	44.3%
70-79	304	38.0%
≥80	23	2.9%
Gender		
Female	678	80.5%
Male	164	19.5%
Race		
Asian	5	0.6%
Black or African American	19	2.3%
Latino or Hispanic	6	0.7%
Native American or Alaska Native	14	1.7%
White or Caucasian	801	96.0%
More than one race	3	0.4%
Highest Level of Education		
Some high school	1	0.1%
High school diploma/GED	34	4.0%
Some college	125	14.7%
Associate degree/Technical or professional degree	84	9.9%
Bachelor's degree	275	32.4%
Master's Degree	265	31.3%
Doctoral degree	64	7.5%
Annual Household Income		
<$25,000	32	4.3%
$25,000 - $49,000	111	15.0%
$50,000 - $99,999	282	38.2%
$100,000 - $149,999	184	24.9%
$150,000 - $199,999	74	10.0%
>$200,000	55	7.5%
Employment Status		
Full time outside home	57	6.7%
Part time outside home	45	5.3%
Full time from home	20	2.4%
Part time from home	34	4.0%
Do not work	39	4.6%
Retired	650	76.9%

Table 3.3. Alabama EMG volunteer program background

	Frequency (n)	Percent (%)
Service Status		
Active[a]	612	72.7%
Intern[b]	132	15.2%
Inactive[c]	98	11.6%
Active years of service		
1-3 years	322	41.1%
4-6 years	166	21.2%
7-9 years	90	11.5%
10-12 years	74	9.5%
13-15 years	48	6.1%
>15 years	83	10.6%
Service hours 2019		
<25 hours	121	15.7%
Between 25 and 49 hours	149	19.3%
Between 50 and 74 hours	104	13.5%
Between 75 and 99 hours	70	9.1%
Between 100 and 124 hours	78	10.1%
Between 125 and 149 hours	33	4.3%
150 or more hours	217	28.1%

[a] Active status means volunteers have paid annual dues, met annual volunteer service hour requirements (25 hours for certified EMG and 50 hours for interns), and completed 10 hours of continuing education units (CEUs).
[b] Individuals who are participating in the Master Gardener volunteer training and certification
[c] Individuals who have completed required training and volunteer service but have not reported active volunteer service and/or failed to pay annual dues by December 31.

Table 3.4. Alabama EMG volunteer involvement scores by demographics and background

	Count (n)	Mean	SD[x]
Total Sample	867	3.7	4.3
Age			
<40	16	**9.2**	**8.4**
40-49	19	**3.6**	**4.2**
50-59	87	**3.5**	**4.1**
60-69	354	**3.6**	**4.2**
70-79	304	**3.6**	**4.1**
≥80	30	**2.3**	**2.3**
Total	810	**3.6**	**4.3**
Gender			
Female	678	3.6	4.3
Male	164	4.0	4.6
Total	842	3.7	4.3
AL Extension Region[w]			
Northwest	115	4.0	5.0
Northeast	167	3.4	3.7
West Central	14	3.4	4.8
Central	254	4.0	4.9
East Central	113	3.6	3.9
Southwest	100	3.4	3.2
Southeast	52	3.8	4.5
Total	815	3.7	4.3
Active Years of Service[v]			
1-3 years	280	3.3	4.1
4-6 years	153	3.7	3.7
7-9 years	84	4.2	4.3
10-12 years	64	4.4	3.8
13-15 years	47	4.0	4.6
>15 years	77	4.3	4.6
Total	705	3.8	4.1
Service hours 2019			
<25 hours	121	**2.8**	**4.5**
25-49 hours	149	**3.2**	**3.7**
50-74 hours	104	**2.6**	**3.2**
75-99 hours	70	**3.0**	**3.7**
100-124 hours	78	**3.4**	**3.1**
125-149 hours	33	**3.7**	**3.5**

150 or more hours	217	**5.0**	**4.5**
Total	772	**3.6**	**4.1**

[z]Involvement=count of all VSAs with involvement frequency equal to 4 (often) or 5 (always)

[y]Interns are counted as active

[x]SD=Standard deviation

[w]Northwest includes data from Colbert, Fayette, Lamar, Lauderdale, Lawrence, Limestone, and Morgan counties; Northeast includes data from Blount, Cherokee, Cullman, DeKalb, Etowah, Jackson, Madison and Marshall counties; West Central includes data from Hale and Tuscaloosa counties; Central includes data from Autauga, Bibb, Chilton, Elmore, Jefferson, Lowndes, Montgomery, Saint Clair and Shelby counties; East Central includes data from Calhoun, Chambers, Clay, Cleburne, Lee, Macon, Russell, Talladega and Tallapoosa counties; Southwest includes data from Baldwin and Mobile counties; Southeast includes data from Crenshaw, Coffee, Covington, Dale, Henry, Houston and Pike counties

Bold letters indicate significance at the $p<.05$ level

Table 3.5. Alabama EMG volunteer involvement factors by demographics and background

	Count (n)	Youth		Media		Problem-solving		Hands-on	
		Mean	SD[x]	Mean	SD[x]	Mean	SD[x]	Mean	SD[x]
Total Sample	867	1.7	0.8	1.4	0.7	2.4	1.0	2.4	0.9
Age									
<40	16	**2.8**	**1.2**	**2.5**	**1.5**	**2.8**	**1.3**	2.9	1.3
40-49	19	**1.7**	**0.9**	**1.4**	**0.7**	**2.1**	**1.0**	2.2	1.1
50-59	87	**1.7**	**0.9**	**1.4**	**0.7**	**2.1**	**0.8**	2.3	1.0
60-69	354	**1.6**	**0.7**	**1.4**	**0.7**	**2.4**	**0.9**	2.4	1.0
70-79	304	**1.6**	**0.7**	**1.4**	**0.7**	**2.5**	**1.0**	2.3	1.0
≥80	30	**1.4**	**0.4**	**1.4**	**0.8**	**2.3**	**0.7**	2.1	0.8
Total	810	**1.6**	**0.8**	**1.4**	**0.7**	**2.4**	**0.9**	2.4	1.0
Gender									
Female	678	1.7	0.8	1.4	0.7	2.4	0.9	**2.3**	**1.0**
Male	164	1.7	0.8	1.5	0.8	2.5	0.9	**2.6**	**1.0**
Total	842	1.7	0.8	1.4	0.8	2.4	0.9	**2.4**	**1.0**
AL Extension region[w]									
Northwest	115	**1.6**	**0.9**	**1.6**	**1.0**	**2.7**	**1.0**	2.3	1.1
Northeast	167	**1.6**	**0.7**	**1.3**	**0.6**	**2.4**	**0.9**	2.3	1.0
West Central	14	**1.5**	**0.9**	**1.3**	**0.7**	**2.0**	**0.9**	2.4	1.3
Central	254	**1.7**	**0.8**	**1.4**	**0.8**	**2.4**	**1.0**	2.5	1.0
East Central	113	**1.8**	**0.9**	**1.3**	**0.6**	**2.1**	**0.9**	2.5	1.0
Southwest	100	**1.5**	**0.6**	**1.5**	**0.8**	**2.6**	**0.9**	2.1	1.0
Southeast	52	**1.8**	**0.7**	**1.3**	**0.7**	**2.7**	**1.0**	2.6	0.9
Total	815	**1.7**	**0.8**	**1.4**	**0.7**	**2.4**	**0.9**	2.4	1.0
Active years of service[v]									
1-3 years	280	1.6	0.8	**1.3**	**0.6**	**2.2**	**0.9**	2.4	1.0
4-6 years	153	1.6	0.7	**1.4**	**0.7**	**2.5**	**0.9**	2.4	1.0
7-9 years	84	1.7	0.7	**1.3**	**0.7**	**2.6**	**0.9**	2.5	1.0
10-12 years	64	1.8	0.8	**1.5**	**0.8**	**2.8**	**0.9**	2.4	1.0
13-15 years	47	1.7	0.7	**1.6**	**0.8**	**2.7**	**0.9**	2.3	1.0
>15 years	77	1.7	0.8	**1.7**	**1.0**	**2.7**	**0.9**	2.5	0.9
Total	705	1.7	0.8	**1.4**	**0.7**	**2.5**	**0.9**	2.4	1.0
Service hours 2019									
<25 hours	121	1.56	0.8	**1.3**	**0.7**	**1.9**	**0.9**	**2.0**	**1.0**
25-49 hours	149	1.69	0.8	**1.3**	**0.6**	**2.2**	**0.9**	**2.3**	**0.9**
50-74 hours	104	1.55	0.7	**1.3**	**0.6**	**2.2**	**0.8**	**2.2**	**0.8**

75-99 hours	70	1.53	0.7	**1.2**	**0.5**	**2.4**	**0.9**	**2.1**	**0.8**
100-124 hours	78	1.62	0.6	**1.3**	**0.6**	**2.5**	**0.7**	**2.5**	**0.9**
125-149 hours	33	1.60	0.7	**1.3**	**0.4**	**2.6**	**0.7**	**2.3**	**1.0**
150 or more hours	217	1.72	0.8	**1.7**	**0.9**	**2.9**	**0.9**	**2.7**	**1.1**
Total	772	1.64	0.8	**1.4**	**0.7**	**2.4**	**0.9**	**2.3**	**1.0**

[z]Involvement=count of all VSAs with involvement frequency equal to 4 (often) or 5 (always);

[y]Interns are counted as active

[x]SD=Standard deviation

[w]Northwest includes data from Colbert, Fayette, Lamar, Lauderdale, Lawrence, Limestone, and Morgan counties; Northeast includes data from Blount, Cherokee, Cullman, DeKalb, Etowah, Jackson, Madison and Marshall counties; West Central includes data from Hale and Tuscaloosa counties; Central includes data from Autauga, Bibb, Chilton, Elmore, Jefferson, Lowndes, Montgomery, Saint Clair and Shelby counties; East Central includes data from Calhoun, Chambers, Clay, Cleburne, Lee, Macon, Russell, Talladega and Tallapoosa counties; Southwest includes data from Baldwin and Mobile counties; Southeast includes data from Crenshaw, Coffee, Covington, Dale, Henry, Houston and Pike counties

[v]Active status means volunteers have paid annual dues, met annual volunteer service hour requirements (25 hours for certified EMG and 50 hours for interns), and completed 10 hours of continuing education units (CEUs)

Bold letters indicate significance at the $p<.05$ level

CHAPTER IV

MOTIVATIONS AND PERCEIVED BENEFITS OF ALABAMA EXTENSION MASTER GARDENER VOLUNTEERS

INTRODUCTION

Cooperative Extension History

The Cooperative Extension Service joins with the United States Department of Agriculture (USDA) and the National Institute of Food and Agriculture (NIFA) to bridge land-grant universities and communities. With a presence in every county across the country, Extension agents translate research into education and action. As a result, cutting-edge agricultural research is readily available to communities and businesses who can put knowledge into practice to improve their lives.

The formation of the Cooperative Extension Service began with the passage of the Morrill Act of 1862. The United States gave each state 30,000 acres of land for each member of its congressional delegation. The land was sold, providing funds for post-secondary education focused on agricultural and mechanical arts. The act established the Agricultural and Mechanical College of Alabama, now Auburn University, which became the main office for the statewide Alabama Extension program (Langcuster 2012). However, the formalization of Extension came with the passing of the Smith-Lever Act in 1914. This then-novel policy funded land-grant universities to establish a network of county Extension agents. At its conception, agents enabled land-grant universities to disseminate information that addressed rural agricultural issues. The act stated that Extension work connected with the USDA would be executed through land-grant universities (NIFA 2016).

The need for education among farmers and rural community development led to the Alabama Extension Service, which became the Alabama Cooperative Extension System (ACES).

ACES partners with land-grant universities Auburn University, Alabama A&M University, and Tuskegee University to improve Alabama's economy and residents' quality of life by delivering educational programs to each of the 67 counties. These programs evolve to meet the state's changing needs, are research-based, related to current issues, and provided via regional and local Extension Agents (Langcuster 2012).

Extension Master Gardener Program

The Extension Master Gardener program is a partnership between land-grant universities, the Cooperative Extension System, and Master Gardener volunteers. Extension agents train Master Gardener volunteers to be educators. Therefore, the program is called the Extension Master Gardener (EMG) program. Under the direction of the Alabama Cooperative Extension System, EMG volunteers increase the availability of and provide reliable, relevant, and reachable home horticulture information.

The concept of the Master Gardener program traces its roots to Washington State University in 1972. Public demand for home gardening information increased due to rapid urban growth. Extension agent David Gibby, feeling overwhelmed by the large volume of requests, proposed the idea of training volunteers to assist Extension with consumer horticulture education in the community. Results were better than expected, and the EMG program spread quickly.

Today, the EMG program exists in 49 states, the District of Columbia, at least four Canadian provinces, and South Korea. It serves as a model for other volunteer programs. In 2020, an estimated 84,000 EMG volunteers reported 3.1 million service hours and educated 8.4 million clients. Naturally, EMG volunteers helped people improve their physical and mental health, gardening and landscape practices, and awareness of environmental issues. Their work contributed an estimated $88 million in value to the public (EMG National Committee 2020).

The Alabama EMG program is a partnership between the land grant universities (Alabama A&M University, Auburn University, and Tuskegee University), Alabama Extension staff (County Extension Office Administrators, County Extension Coordinators, and Home Grounds Regional Extension Agents), and extension-trained, Master Gardener volunteers. The program started in 1981 when New York Master Gardener Mary Lou McNabb introduced the Master Gardener program concept to Gary Murray, a Madison County Extension Agent. McNabb and Murray, along with the help of a few other Extension Agents, organized the first Alabama EMG training series in Huntsville, Alabama (ACES 2018).

To become an Alabama EMG volunteer, one must finish the 50-hour training program which provides hands-on and classroom instruction and volunteer a total of 50 hours during the year. After year one, EMG volunteers must report a minimum of 25 volunteer service hours annually and pay membership dues and complete 10 hours of continuing education units (CEU) to maintain active status (Carroll 2021). Certified EMG volunteers, Extension agents, and local experts teach classes on vegetable gardening, trees, home lawns, and annual and perennial flowers.

EMG volunteers are an asset to the Alabama Cooperative Extension System. They host public education outreach activities, manage and support teaching gardens, sponsor, or support community gardens, donate fresh produce to charity, assist with research projects including Harvest for Health and the Bee Biodiversity Initiative, and much more (ACES 2018). The EMG volunteer service hours allow Extension personnel to focus their time and effort toward more advanced or technical programming.

The impact the Alabama EMG volunteers have on their local communities is evident. In 2018, Alabama EMGs volunteered 78,920 hours in public education outreach activities, having a

public value of $1.7 million, and maintained teaching gardens in 21 counties with over 400,000 visitors. EMG volunteers sponsored 13 community gardens that donated 12 tons of produce or 96,000 half-cup servings, equal to the retail price of $39,600 in 2018. Harvest for Health is a project led by the University of Alabama Birmingham's Comprehensive Cancer Center and Alabama Extension's Home Grounds Team that uses a backyard garden to teach new, healthy habits to cancer survivors. To date, 492 volunteers have mentored cancer survivors. Pilot studies (2013-2017) showed that gardening significantly improved the diet and health of the cancer survivor participants (ACES 2018).

Motivations

Volunteer work, in general consists of activities that are helpful and extend over time. Volunteers freely choose to be engaged in such activities without the expectation of reward or other compensation. Volunteering often occurs through formal organizations and is performed on behalf of causes or individuals who desire assistance (Snyder and Omoto 2008). There are many psychological theories to measure and explain volunteer motivation. The Volunteer Functions Inventory (VFI) by Clary et al. (1998) proved its usefulness in identifying volunteer motives in research. The six motivational functions include Values, Understanding, Enhancement, Career, Social, and Protective and are defined in Figure 4.1. The VFI consists of 30 items measured with a 7-point Likert scale (1=strongly disagree; 7=strongly agree).

A review of the literature suggests several deviations from the original VFI. Newberry and Israel (2018) used 18 items related to five constructs from the modified VFI (career, helping the environment, learning, social, and values) to explore the motivations of the Florida Master Naturalist Program volunteers. Takle et al. (2016) also used a modified VFI to study the motivations of Iowa EMG volunteers. They confirmed six factors, but a factor analysis revealed that items did not load on intended factors. The highest scoring motivation for Iowa EMG

volunteers was a factor labeled “Learning” that included three understanding, one career, one social, and one enhancement items. Dorn et al. (2021) used 20 items on a 5-point Likert scale and five motivation factors learning, values, personal, social, and career, to examine the motivations of EMG volunteers nationwide.

To measure the perceived benefits of Iowa EMG volunteers, Takle et al. (2017) used an instrument with 17 items on a 5-point Likert scale (1 = Strongly Disagree; 5 = Strongly Agree) called return on investment. The exploratory principal component analysis identified four motivation factors (New Discoveries, Self, Community, and Recognition). The mean scores for each factor revealed that Iowa EMG volunteers viewed New Discoveries as their most important reason for participating in the program.

No baseline data exist on what motivates Alabama EMG volunteers to participate in the program. Therefore, the objective of this study is to determine their motivations for volunteering in the Master Gardener program. Coordinators can use these data to help in developing programs and volunteer activities.

METHODOLOGY

The purpose of the overall assessment was to collect was to collect demographic information, activity preferences, motivations, perspectives, and experiences of those involved in the Alabama Extension Master Gardener (EMG) program. This article addresses the motivations of EMG volunteers for involvement in the program and analyzes the perceived benefits of the program to volunteers.

Population and Sample

The population for the overall study encompassed Alabama Extension personnel who work with Master Gardeners (43 County Extension Office Administrators, 37 County Extension

Coordinators, and 12 Home Grounds Regional Extension Agents) (Auburn University Extension 2021) and 1,824 EMG volunteers reporting hours as of 2019.

Research Design

This study consisted of a survey created using Qualtrics Survey Software (Qualtrics 2020). Before distribution, the survey, recruitment letter, and invitation email were reviewed and approved by the Auburn University Institutional Review Board for use from 30 Nov. 2020 to 9 Feb. 2021.

An invitation email was sent to all potential participants on 7 Dec. 2020. The letters included a link to the Qualtrics survey, explained the purpose of the study, and stated that participation would be voluntary. The survey remained open for two months, and reminder emails were sent out during weeks 3, 5, 7, and 9.

Instrumentation

Questions for the volunteer survey came from a national survey and previous studies from the University of Georgia and Iowa State University (Takle et al. 2016; Dorn et al. 2018). The EMG volunteer survey was composed of four sections: demographics, VSA preferences, motivations, and perceived benefits. This study addresses Alabama EMG volunteer motivations for participation in the program.

Volunteer motivation was assessed using the Volunteer Functions Inventory (VFI) (Clary et al. 1998). The VFI is composed of statements designed to measure six motivational functions: Values, Understanding, Social, Career, Protective, and Enhancement. Participants indicated the importance of 30 statements on a 5-point Likert scale (1 = unimportant; 5 = extremely important). Slight modifications to the questions improved clarity and relevance to the EMG program. To measure the perceived benefits of the program from EMG volunteers, participants indicated their level of agreement with 17 items on a 5-point Likert scale (1 = Strongly Disagree;

5 = Strongly Agree). This instrument is referred to as Return on Investment by Takle et al. (2016) and appears in previous studies by Rohs and Westerfield (1996) and Schrock et al. (2000).

Data Coding and analysis

Before data analysis of the EMG volunteer survey, incomplete data was removed and organized. Calculations determined the following volunteer characteristics:

Age and Gender. Volunteers were assigned one of six age groups: <40, 40-49, 50-59, 60-69, 70-79, and 80 and above based on a calculation made from reported birth year to the year of data collection (2020). Participants indicated gender based on two choices, female, and male.

Service Status. Each EMG volunteer was assigned a code of either active, intern, or inactive based on self-reported service status. An active volunteer has completed an approved Cooperative Extension System Master Gardener Training Program, paid annual dues, fulfilled the volunteer service requirements (50 hours in the training year and 25 hours annually), and completed 10 hours of continuing education units (CEUs) (Carroll 2021). Intern volunteers are currently participating, but have not yet completed the Master Gardener volunteer training and certification. Inactive volunteers failed to meet one or more of these requirements.

Volunteer Participation. EMG volunteer participation was calculated based on active years of service and service hours in 2019. Data were divided into low and high categories based on the median values for EMG volunteers; less than and greater than six years of service and above and below 75 service hours. Volunteers were assigned one of four categories: low years, low hours; low years, high hours; high years, low hours; high years, high hours.

Satisfaction. The item "How dissatisfied or satisfied are you with your experience as an Extension Master Gardener?" measured volunteer satisfaction with the EMG program. The 5-

point Likert scale created a satisfaction score for each participant ranging from 0= very dissatisfied to 5=very satisfied.

The results were analyzed using the SPSS software package (IBM SPSS Statistics for Macintosh 2021). Exploratory factor analysis (EFA) is used to discover the factor structure of a measure and has three basic steps; determine the number of factors, choose an extraction method, and select a rotation method (Newsom 2005). In this study, the EFA was detected four VSA involvement factors. The extraction method used was principal axis factoring because the data were non-normally distributed and an oblique rotation (direct oblimin) was used the correlation between factors was greater than 0.32 (Costello and Osborne 2005).

Cronbach's alpha examined the reliability of each factor with three or more items. The reliability of factors with two items was examined using the Spearman-Brown coefficient (Eisinga et al. 2013). ANOVAs and independent t-tests compared the means of motivation functions and volunteer characteristics such as age, gender, service status, volunteer participation, and satisfaction.

RESULTS

Volunteer Functions Inventory

Principal axis factor analysis with oblique rotation (direct oblimin) identified factors among 30 VFI items. The Kaiser-Meyer-Olkin (KMO) measure, which confirms the factor analysis's sample adequacy, was KMO= .932. However, the correlation matrix determinant was less than 0.0001, indicating multicollinearity among items. Nine items were removed from the analysis due to KMO values of individual items being less than .5 (IBM SPSS Statistics for Macintosh 2021). The factor analysis was repeated, KMO= .903, and the correlation matrix determinant was 0.0001 indicating no multicollinearity. This study revealed five factors that explained 70% of the variance. The reliability analysis showed that all five factors had a

Cronbach's alpha level higher than 0.733. Three of the factors aligned with Clary et al. (1998), but some questions aligned differently, causing renaming of the categories.

Factor 1 was labeled Self-esteem and contained six items that emphasized personal feelings and self-confidence. Among the items were two enhancement statements (volunteering as an Extension Master Gardener helps me feel better about myself and volunteering as an Extension Master Gardener increases my self-esteem) two protective statements (by volunteering as an EMG, I feel less lonely, and volunteering helps me to work through my problems) one understanding statement (volunteering as an EMG makes me feel needed) and one social statement (volunteering is a good escape from my troubles.) The Cronbach's alpha for the self-esteem motivation function was .908.

Factor 2 was labeled Career and contained five items related to the workplace. Among the items were four career statements (volunteering as an EMG will help me to succeed in my chosen profession; through the Extension Master Gardener program, I can make new contacts that might help my business career; the EMG program allows me to explore different career options; and volunteering as an EMG can help me get my foot in the door at a place where I would like to work) and one enhancement statement (my Extension Master Gardener experience will look good on my resume.) The Cronbach's alpha for the career motivation function was .904.

Factor 3 was labeled Understanding because it contained three items that related learning horticulture knowledge and skills. Among the items were three understanding statements (volunteering as an EMG lets me learn horticulture through direct, hands-on experience; I can learn more about horticulture and home gardening; and volunteering as an EMG allows me to

gain a new perspective on things.) The Cronbach alpha for the understanding motivation function was .733.

Factor 4 was labeled Values and contained three items relating to helping others. Among the items were three values statements (I am concerned about those less fortunate than myself; I feel compassion toward people in need; and I think it is important to help others.) The Cronbach alpha for the values motivation function was .772.

Factor 5 was labeled Social and contained three items that related friends. Among the items were three social statements (my friends volunteer as EMGs; volunteering is an important activity to the people I know best; and my close friends place a high value on community service.) The Cronbach alpha for the social motivation function was .743.

Of the original 30 VFI scale items, 20 were retained in this analysis. These items loaded on to five factors, three of which were original (Understanding, Values, and Social). A significant difference was found between factor means using a Freidman test (x^2=2395.75, p<0.001.) A Wilcoxon Signed-Rank test revealed a significant difference between all factors (p<0.001). The understanding factor (m=4.3, SD=0.6) had the highest mean (greatest importance) followed by the values factor (m=4.0, SD=0.8), social factor (m=3.3, SD=0.8), self-esteem factor (m=2.9, SD=1.0), and career factor (m=1.6, SD=0.9) (Table 4.1). Mean comparisons of motivation functions were made between EMG volunteer age, gender, service status, satisfaction, and active years of service using ANOVAs and independent t-tests.

Age. There was a significant difference between age and the career F(5,789)=8.630, p<0.001 motivation function (Table 4.2). Career motivations were most important for the <40 age category (m=2.7, SD=1.3), and least important for the 70-79 age category (m=1.5, SD=1.0).

Gender. There was no significant difference between gender and any of the motivation functions.

Service Status. There was a significant difference between service status and the understanding $F(2, 833)=9.411$, $p<0.001$, values $F(2, 833)=7.136$, $p<0.001$, social $F(2, 833)= 6.657$, $p<0.001$, and self-esteem $F(2, 833)=5.436$, $p<0.001$ motivation functions (Table 4.4). Understanding motivations were most important for intern volunteers (m=4.4, SD=0.5) and least important for inactive volunteers (m=4.1, SD=0.8). Values motivations were most important for intern volunteers (m=4.1, SD= 0.8) and least important for inactive volunteers (m=3.7, SD=1.0). Social motivations were most important for active volunteers (m=3.4, SD=1.0) and least important for inactive (m=3.1, SD=1.0) and intern (m=3.1, SD=1.0) volunteers. Self-esteem motivations were most important for active volunteers (m=3.0, SD=1.0) and least important for inactive volunteers (m=2.6, SD=1.0).

Volunteer participation. There was a significant difference between volunteer participation and the understanding $F(3, 736)=5.728$, $p<0.001$, social $F(3, 736)=6.437$, $p<0.001$, and career $F(3, 736)= 7.034$, $p<0.001$ motivation function (Table 4.5). Understanding motivations were most important for volunteers with low years and high hours (m=4.4, SD=0.5) and least important for volunteers with high years and low hours (m=4.2, SD=0.6). Social motivations were most important for volunteers with high years and high hours (m=3.5, SD=0.9) and least important for volunteers with low years and low hours (m=3.1, SD=1.0). Career motivations were most important for volunteers with low years and low hours (m=1.8, SD=1.0) and least important for volunteers with high years and high hours (m=1.5, SD=0.8).

Satisfaction. There was a significant difference between volunteer satisfaction and the understanding $F(4, 832)=9.550$, $p<0.001$ and social $F(4, 832)= 5.743$, $p<0.001$ motivation

functions (Table 4.6). Understanding motivations were most important for very satisfied volunteers (*m*=4.4, *SD*=0.5) and least important for very dissatisfied volunteers (*m*=4.0, *SD*=1.0). Social motivations were most important for very satisfied volunteers (*m*=3.4, *SD*=1.0) closely followed by very dissatisfied (*m*=3.2, *SD*=1.1) volunteers, and least important for dissatisfied volunteers (*m*=2.7, *SD*=1.0).

Perceived Benefits

Principal axis factor analysis with oblique rotation (direct oblimin) was conducted on 17 perceived benefits items. The Kaiser-Meyer-Olkin (KMO) measure, which confirms the sample adequacy for the factor analysis, was KMO= .913. However, the three items "contributes to community growth and development," "allows me to be more engaged in my community," and "is regarded as a prestigious organization in the community" were removed from the analysis because they had a Kaiser-Meyer-Olkin (KMO) value of less than .5 (IBM SPSS Statistics, 2020). The factor analysis was repeated, KMO= .891. This study revealed four factors that explained 69% of the variance. Reliability analysis for factors with more than two items was calculated using Cronbach's alpha. The Spearman-Brown coefficient was used for factors with two items (Eisinga et al. 2013).

Factor 1 was named Community and contained five statements related to helping the general public. The items included "is an opportunity for me to help alleviate some societal problems," "is a connection point that links multiple community organizations together," "is an opportunity for me to feel I am doing something valuable for the environment," "provides an economic benefit to the community," and "provides opportunities to meet my humanitarian obligations through volunteer service." The Cronbach's alpha for the community was .811.

Factor 2 was named Occupation and contained two statements that were career related. The statements included "teaches me skills that help me at my paid work" and "allows me to

make new contacts that might help my business or career." The Spearman-Brown coefficient for occupation was .821.

Factor 3 was labeled Learning because it contained three items that related learning horticulture knowledge and skills. The statements included "provides opportunities to learn about plants, soil, and horticultural topics," "provides practical instruction and hands-on horticulture experiences that enhance learning," and "teaches skills that benefit my home garden and landscape decisions. The Cronbach's alpha for learning was .733.

Factor 4 was labeled Self and contained three items relating to personal development. The statements included "enhances individual self-esteem through volunteerism," "helps me feel more positive about my place in the world as a result of volunteering as an Extension Master Gardener," and "provides adults with social rewards for productive efforts." The Cronbach's alpha for self was .822.

Of the original 17 perceived benefits items, 14 were retained in this analysis. These items loaded on to the following factors named community, occupation, learning, and self. A significant difference was found between factor means using a Freidman test (x^2=1981.44, p<0.001.). A Wilcoxon Signed-Rank test revealed a significant difference between all factors (p<0.001). The participants rated the Learning factor (m=4.6, SD=0.5) the highest mean followed by the Community factor (m=3.9, SD=0.6), the Self factor (m=3.8, SD=0.8), and Occupation factor (m=2.1, SD=1.0) (Table 4.7). Three learning and two community statements had mean scores over 4.0 on a five-point Likert scale. Participants of the study rated the statement ‘Provides opportunities to learn about plants, soil and horticultural topics’ the highest with a mean of 4.7. The occupation statement ‘teaches me skills that help me at my paid work’ was rated the lowest.

DISCUSSION

The motivations of Alabama Master Gardeners are similar to the results of previous studies of EMG volunteers in Mississippi (Wilson and Newman 2011), Iowa (Takle et al. 2016). and nationwide (Dorn et al. 2021). In this study, Understanding (comparable to learning) and Values were the two most important motivation factors for Alabama EMG volunteers. However, this is inconsistent with the findings of Chacón et al. (2017), who found that Values are the most frequently cited motivation for other volunteer groups and Understanding motivation scores are higher in young volunteers.

The Social factor was the third most important volunteer motivation function in this study. However, the Social function usually obtains the lowest scores in similar studies (Konrath et al. 2012; Takle et al. 2016; Dorn et al. 2021). Perhaps this result can be explained by the open-ended question about perceived benefits. Many participants commented about benefiting from friendships within the program (data not shown). Also, outdoor volunteer service activities may satisfy a need for social engagement of older volunteers (Pillemer et al. 2010).

Self-esteem (or Enhancement) and career were the least important volunteer motivation functions. This result is consistent with previous EMG volunteer studies and most studies that utilize the VFI tool. The low career scores may be attributed to the age demographic. More than 85% of Alabama EMG volunteers were over 60. In addition, 77% are retired and, therefore, not likely to be looking to begin a new career.

Motivations and Volunteer Characteristics

The ANOVA results revealed that age does, in fact a play a role in the importance of the Career function. For example, the <40 age group views the Career function as most important and least important to the 70-79 age group. Motivations for volunteers varied with service status

may suggest that volunteer motivations evolve with time. The Understanding and Values motivations are most important to interns, indicating an eagerness to learn and a willingness to help others. Social and Self-esteem motivation functions were most important to active volunteers. This is consistent with the improvements in self-esteem and social activity after participating in the Texas Master Gardener program (Waliczek et al. 2002).

Volunteer participation levels also indicate a shift in motivation over time. Volunteers with low years and high hours are highly motivated by the understanding factor, and volunteers with high years and high hours are motivated by the Social function. Participants with low years and low hours indicated a higher Career motivation than those at a higher participation level. This is supported by the open-ended comments about inconvenient meeting times (data not shown). Perhaps Understanding motivation is important in volunteer recruitment, but Social motivation is important for volunteer retention.

Understanding and Social motivation functions were significant in volunteer satisfaction levels. Volunteers who were very satisfied indicated higher Understanding and Social motivations than those at lower satisfaction levels. However, very dissatisfied volunteers were also highly motivated by the social function. This study occurs during the COVID-19 pandemic, which may contribute to volunteer dissatisfaction. Kotwal et al. (2020) revealed challenges older adults face experiencing persistent loneliness, including poor emotional coping and discomfort with new technologies.

The perceived benefits questions confirm why Alabama Extension Master Gardeners join the program and show how they recognize their impact. Respondents agreed most strongly that Learning and Community were their most important reason for participating in the program.

References

Alabama Cooperative Extension System. 2018. What is a Master Gardener: Our Beginnings. [accessed 2021 Sep 8]. https://mg.aces.edu/about/.

Auburn University Extension. 2021. Alabama Cooperative Extension Service Directory. https://ssl.acesag.auburn.edu/directory-new/search.php?&dq=county%20extension%20coordinator&btnS=&pageNumber=1&pageSize=64.

Carroll D. 2021. Calculating Your Service Hours. Lee County Master Gardeners of Alabama. [accessed 2021 Sep 14]. https://www.leemg.org/log-hours.html.

Chacón F, Gutiérrez G, Sauto V, Vecina ML, Pérez A. 2017. Volunteer Functions Inventory: A systematic review. Psicothema. 29(3):306–316. doi:10.7334/psicothema2016.371.

Clary EG, Snyder M, Ridge RD, Copeland J, Stukas AA, Haugen J, Miene P. 1998. Understanding and assessing the motivations of volunteers: A functional approach. J Pers Soc Psychol. 74(6):1516–1530. doi:https://doi.org/10.1037/0022-3514.74.6.1516.

Costello AB, Osborne J. 2005. Best practices in exploratory factor analysis: Four recommendations for getting the most from your analysis. Pract Assess Res Eval. 10(10):86–99. doi:https://doi.org/10.7275/jyj1-4868. : https://scholarworks.umass.edu/pare/vol10/iss1/7.

Dorn ST, Newberry III MG, Bauske EM, Pennisi SV. 2018. Extension Master Gardener Volunteers of the 21st Century: Educated, Prosperous, and Committed. Horttechnology. 28(2):218–229. doi:https://doi.org/10.21273/HORTTECH03998-18.

Dorn ST, Newberry III MG, Bauske EM, Pennisi SV. 2021. If You Build It, Will They Come? Examining Motivations of Extension Master Gardener Volunteers. Soc Nat Resour. 34(9):1250–1267. doi:https://doi.org/10.1080/08941920.2021.1949511.

Eisinga R, Grotenhuis M, Pelzer B. 2013. The reliability of a two-item scale:Pearson, Cronbach, or Spearman-Brown? Int J Public Health. 58(4):637–42. doi:10.1007/s00038-012-0416-3.

Extension Master Gardener National Committee. 2020. Extension Master Gardener 2020 National Report Overview. [accessed 2021 Oct 5]. https://usdaars.maps.arcgis.com/apps/dashboards/f29368e13d5b4cefa6f21c050a1f8c7e.

IBM SPSS Statistics for Macintosh. 2021. Version 28.0. Armonk, New York: IBM Corporation.

Konrath S, Fuhrel-Forbis A, Lou A, Brown S. 2012. Motives for Volunteering Are Associated With Mortality Risk in Older Adults. J Health Psychol. 31(1):87–96. doi:10.1037/a0025226. https://www.apa.org/pubs/journals/releases/hea-31-1-87.pdf.

Kotwal AA, Holt-Lunstad J, Newmark RL, Cenzer I, Smith AK, Covinsky KE, Escueta DP, Lee JM, Perissinotto CM. 2020. Social Isolation and Loneliness Among San Francisco Bay Area Older Adults During the COVID-19 Shelter-in-Place Orders. J Am Geriatr Soc. 69(1):20–29. doi:10.1111/jgs.16865. https://pubmed.ncbi.nlm.nih.gov/32965024/.

Langcuster J. 2012. Alabama Cooperative Extension System (ACES). In: Encyclopedia of Alabama. [accessed 2021 Oct 13]. http://www.encyclopediaofalabama.org/article/h-3287.

National Institute of Food and Agriculture (NIFA). 2016. Cooperative Extension History. United States Department of Agriculture. [accessed 2021 Sep 23]. https://nifa.usda.gov/cooperative-extension-history.

Newberry MG, Israel GD. 2018. Motivations for and Psychological Benefits of Participating in the Florida Master Naturalist Program. J Ext. 56(2):Article 7. https://tigerprints.clemson.edu/joe/vol56/iss2/7/.

Newsom J. 2005. A Quick Primer on Exploratory Factor Analysis. http://web.cortland.edu/andersmd/psy341/efa.pdf.

Pillemer K, Fuller-Rowell TE, Reid MC, Wells NM. 2010. Environmental Volunteering and Health Outcomes over a 20-Year Period. J Gerontol. 50(5):594–602. doi:10.1093/geront/gnq007. https://academic.oup.com/gerontologist/article/50/5/594/557494.

Qualtrics. 2020. Qualtrics. Provo, Utah, USA: Qualtrics. https://www.qualtrics.com.

Rohs FR, Westerfield RR. 1996 Jul. Factors Influencing Volunteering in the Master Gardener Program. Horttechnology.:281–285. doi:https://doi.org/10.21273/HORTTECH.6.3.281.

Schrock DS, Meyer M, Ascher P, Snyder M. 2000. Reasons for becoming involved as a master gardener. Horttechnology. 10(3):626–630. doi:https://doi.org/10.21273/HORTTECH.10.3.626.

Snyder M, Omoto AM. 2008. Volunteerism: Social Issues Perspectives and Social Policy Implications. Soc Issues Policy Rev. 2(1):1–36. doi:https://doi.org/10.1111/j.1751-2409.2008.00009.x.

Takle B, Haynes C, Schrock DS. 2016. Motivation and Retention of Iowa Master Gardeners. Horttechnology. 26(4):522–529. doi:https://doi.org/10.21273/HORTTECH.26.4.522.

Waliczek TM, Boyer R, Zajicek JM. 2002. The master gardener program: Do the benefits of the program go beyond improving the horticultural knowledge of participants? Horttechnology. 12(3):432–436. doi:https://doi.org/10.21273/HORTTECH.12.3.432.

Wilson JC, Newman ME. 2011. Reasons for Volunteering as a Mississippi Master Gardener. J Ext. 49(5). https://archives.joe.org/joe/2011october/rb1.php.

Function	Conceptual Definition	Sample VFI Item
Values	The individual volunteers in order to express or act on important values like humanitarianism.	I feel it is important to help others.
Understanding	The volunteer is seeking to learn more about the world or exercise skills that are often unused.	Volunteering lets me learn through direct, hands-on experience.
Enhancement	One can grow and develop psychologically through volunteer activities.	Volunteering makes me feel better about myself.
Career	The volunteer has the goal of gaining career-related experience through volunteering.	Volunteering can help me to get my foot in the door at a place where I would like to work.
Social	Volunteering allows an individual to strengthen his or her social relationships.	People I know share an interest in community service.
Protective	The individual uses volunteering to reduce negative feelings, such as guilt, or to address personal problems.	Volunteering is a good escape from my own troubles.

Figure 4.1. Clary and Snyder's (1999) six functions served by volunteering and related volunteer functions inventory (VFI) assessment

Table 4.1. Motivations of Alabama EMG volunteers

	Mean	VFI[f]
Understanding (Group mean – 4.3) a		
I can learn more about horticulture and home gardening.	4.6	U
Volunteering as an Extension Master Gardener lets me learn horticulture through direct, hands-on experience.	4.5	U
Volunteering as an Extension Master Gardener allows me to gain a new perspective on things.	3.9	U
Values (Group mean – 4.0) b		
I feel it is important to help others.	4.4	V
I feel compassion toward people in need.	4.0	V
I am concerned about those less fortunate than myself.	4.0	V
Social (Group mean – 3.3) c		
My friends volunteer as Extension Master Gardeners	3.5	S
Volunteering is an important activity to the people that I know best.	3.4	S
My close friends place a high value on community service.	2.9	S
Self-esteem (Group mean – 2.9) d		
No matter how bad I've been feeling, volunteering as an Extension Master Gardener helps me to forget about it.	3.7	P
By volunteering as an Extension Master Gardener, I feel less lonely.	3.2	P
Volunteering as an Extension Master Gardener helps me feel better about myself.	3.1	E
Volunteering as an Extension Master Gardener increases my self-esteem.	3.1	E
Volunteering as an Extension Master Gardener makes me feel needed.	3.0	U
Volunteering is a good escape from my own troubles.	2.6	S
Volunteering helps me to work through my own personal problems.	2.5	P
Career (Group mean – 1.7) e		
Volunteering as an EMG can help me get my foot in the door at a place where I would like to work.	1.8	C
The EMG program allows me to explore different career options.	1.7	C
Volunteering as an EMG will help me to succeed in my chosen profession.	1.6	C
Through the Extension Master Gardener program, I can make new contacts that might help my business career.	1.6	C
My Extension Master Gardener experience will look good on my resume.	1.6	E

Any two means not followed by the same letter are significantly different ($p<0.001$).

[f] U= understanding; V= values; S= social; P= protective; C= career; and E= enhancement.

Table 4.2. Comparison of Alabama EMG volunteer motivation scores by age

Function	Age	*n*	Mean	*SD*	*df*	F	Sig.
Understanding					5	2.107	.063
	<40	13	4.2	0.7			
	40-49	19	4.6	0.5			
	50-59	87	4.4	0.6			
	60-69	353	4.3	0.6			
	70-79	301	4.4	0.6			
	≥80	22	4.0	1.1			
	Total	795	4.3	0.6			
Values					5	.653	.659
	<40	13	4.0	0.8			
	40-49	19	4.1	0.8			
	50-59	87	4.0	0.9			
	60-69	353	3.9	0.8			
	70-79	301	4.0	0.8			
	≥80	22	4.0	1.1			
	Total	795	4.0	0.8			
Social					5	1.317	.254
	<40	13	2.8	1.2			
	40-49	19	3.2	1.0			
	50-59	87	3.1	1.1			
	60-69	353	3.3	1.0			
	70-79	301	3.3	1.0			
	≥80	22	3.2	1.0			
	Total	795	3.3	1.0			
Self-esteem					5	.744	.591
	<40	13	3.0	1.1			
	40-49	19	3.2	1.2			
	50-59	87	2.8	1.1			
	60-69	353	2.9	1.0			
	70-79	301	2.9	1.1			
	≥80	22	2.8	1.1			
	Total	795	2.9	1.0			
Career					5	8.630	<.001*
	<40	13	2.7	1.3			
	40-49	19	2.2	1.2			
	50-59	87	1.9	0.9			
	60-69	353	1.6	0.8			

70-79	301	1.5	0.8
≥80	22	1.7	1.0
Total	795	1.6	0.9

*Indicates a significant difference at the $p<0.001$ level.

Table 4.3. Comparison of Alabama EMG volunteer motivation scores by gender

Function	Gender	*n*	Mean	*SD*	*df*	*t*	Sig.
Understanding					835	0.922	.520
	Male	674	4.3	0.6			
	Female	162	4.3	0.6			
	Total	836	4.3	0.6			
Values					835	1.499	.171
	Male	674	4.0	0.8			
	Female	162	3.9	0.9			
	Total	836	4.0	0.9			
Social					835	-0.161	.785
	Male	674	3.3	1.0			
	Female	162	3.3	1.0			
	Total	836	3.3	1.0			
Self-esteem					835	1.876	.246
	Male	674	2.9	1.0			
	Female	162	2.8	1.1			
	Total	836	2.8	1.0			
Career					835	0.536	.870
	Male	674	1.6	0.9			
	Female	162	1.6	0.9			
	Total	836	1.6	0.9			

Table 4.4. Comparison of Alabama EMG volunteer motivation scores by service status[a]

Function	Service Status	*n*	Mean	*SD*	*df*	*F*	Sig.
Understanding					2	9.411	<.001*
	Inactive	97	4.1	0.8			
	Active	614	4.4	0.6			
	Intern	123	4.4	0.5			
	Total	836	4.3	0.6			
Values					2	7.136	<.001*
	Inactive	97	3.7	1.0			
	Active	614	4.0	0.8			
	Intern	123	4.1	0.8			
	Total	836	4.0	0.8			
Social					2	6.851	<.001*
	Inactive	97	3.1	1.0			
	Active	614	3.4	1.0			
	Intern	123	3.1	1.0			
	Total	836	3.3	1.0			
Self-esteem					2	5.436	.005*
	Inactive	97	2.6	1.0			
	Active	614	3.0	1.0			
	Intern	123	2.8	1.0			
	Total	836	2.9	1.0			
Career					2	1.188	.305
	Inactive	97	1.7	0.9			
	Active	614	1.6	0.8			
	Intern	123	1.7	0.9			
	Total	836	1.6	0.9			

*Indicates a significant difference at the $p<0.001$ level.

[a]Active volunteers have paid annual dues, met annual volunteer service hour requirements (25 hours for certified EMG and 50 hours for interns), and completed 10 hours of continuing education units (CEUs); Intern volunteers are participating in the Master Gardener volunteer training and certification; Inactive volunteers have completed required training and volunteer service but have not met the service hour requirements and/or failed to pay annual dues by December 31

Table 4.5. Comparison of Alabama EMG volunteer motivation scores by participation

Function	Volunteer Participation[a]	*n*	Mean	*SD*	*df*	*F*	Sig.
Understanding					3	5.728	<.001*
	Low years, Low Hours	238	4.2	0.7			
	Low years, High Hours	212	4.4	0.5			
	High years, Low Hours	107	4.2	0.7			
	High years, High Hours	183	4.3	0.6			
	Total	740	4.3	0.6			
Values					3	1.538	.203
	Low years, Low Hours	238	3.9	0.8			
	Low years, High Hours	212	4.0	0.9			
	High years, Low Hours	107	4.0	0.8			
	High years, High Hours	183	4.1	0.7			
	Total	740	4.0	0.8			
Social					3	6.437	<.001*
	Low years, Low Hours	238	3.1	1.0			
	Low years, High Hours	212	3.3	1.0			
	High years, Low Hours	107	3.3	1.0			
	High years, High Hours	183	3.5	0.9			
	Total	740	3.3	1.0			
Self-esteem					3	1.299	.274
	Low years, Low Hours	238	2.9	1.0			
	Low years, High Hours	212	3.0	1.0			
	High years, Low Hours	107	2.9	1.0			
	High years, High Hours	183	3.0	1.1			
	Total	740	2.9	1.0			
Career					3	7.034	<.001*
	Low years, Low Hours	238	1.9	1.0			
	Low years, High Hours	212	1.6	0.8			
	High years, Low Hours	107	1.5	0.8			
	High years, High Hours	183	1.5	0.9			
	Total	740	1.6	0.9			

*Indicates a significant difference at the $p<0.001$ level.

[a]Volunteer participation score calculated based on self-reported active years as an EMG volunteer and number of volunteer service hours in 2019. Low and high categories divided based on median values for active EMG volunteers, 6 years of service and 75 service hours.

Table 4.6. Comparison of Alabama EMG volunteer motivation scores by satisfaction level

Function	Volunteer Satisfaction	*n*	Mean	*SD*	*df*	*F*	Sig.
Understanding					4	9.550	<.001*
	Very dissatisfied	36	4.0	1.0			
	Dissatisfied	29	4.1	0.8			
	Neutral	32	4.0	0.7			
	Satisfied	141	4.3	0.6			
	Very satisfied	599	4.4	0.5			
	Total	837	4.3	0.6			
Values					4	2.840	.023
	Very dissatisfied	36	4.0	0.6			
	Dissatisfied	29	3.7	1.2			
	Neutral	32	3.7	0.8			
	Satisfied	141	3.9	0.8			
	Very satisfied	599	4.0	0.8			
	Total	837	4.0	0.8			
Social					4	5.743	<.001*
	Very dissatisfied	36	3.2	1.1			
	Dissatisfied	29	2.7	1.0			
	Neutral	32	3.0	0.9			
	Satisfied	141	3.1	1.0			
	Very satisfied	599	3.4	1.0			
	Total	837	3.3	1.0			
Self-esteem					4	1.641	.162
	Very dissatisfied	36	3.1	1.2			
	Dissatisfied	29	2.8	1.0			
	Neutral	32	2.8	1.0			
	Satisfied	141	2.7	0.9			
	Very satisfied	599	3.0	1.0			
	Total	837	2.9	1.0			
Career					4	1.169	.323
	Very dissatisfied	36	1.7	1.0			
	Dissatisfied	29	1.7	0.9			
	Neutral	32	1.9	1.0			
	Satisfied	141	1.7	0.8			
	Very satisfied	599	1.6	0.9			
	Total	837	1.6	0.9			

*Indicates a significant difference at the $p<0.001$ level.

Table 4.7. Alabama EMG volunteers' perceived benefits

	Mean
Learning (Group mean – 4.6) a	
Provides opportunities to learn about plants, soil and horticultural topics.	4.7
Teaches skills that benefit my home garden and landscape decisions.	4.6
Provides practical instruction and hands-on horticulture experiences that enhance learning	4.6
Community (Group mean – 3.9) b	
Is an opportunity for me to feel I am doing something valuable for horticulture in Alabama	4.2
Is an opportunity for me to feel I am doing something valuable for the environment.	4.2
Provides an economic benefit to the community	4.0
Is a connection point that links multiple community organizations together.	3.9
Provides opportunities to meet my humanitarian obligations through volunteer service	3.9
Is an opportunity for me to help alleviate some societal problems.	3.4
Self (Group mean – 3.9) c	
Provides adults with social rewards for productive efforts.	3.9
Enhances individual self-esteem through volunteerism.	3.9
Helps me feel more positive about my place in the world as a result of volunteering as an Extension Master Gardener.	3.8
Occupation (Group mean – 2.2) d	
Allows me to make new contacts that might help my business or career.	2.3
Teaches me skills that help me at my paid work.	2.1

Any two means not followed by the same letter are significantly different ($p<0.001$).

CHAPTER V

MOTIVATIONS AND BENEFITS OF ALABAMA EXTENSION MASTER GARDENER VOLUNTEERS

INTRODUCTION

Cooperative Extension History

The Cooperative Extension Service joins with the United States Department of Agriculture (USDA) and the National Institute of Food and Agriculture (NIFA) to bridge land-grant universities and communities. With a presence in every county across the country, Extension agents translate research into education and action. As a result, cutting-edge agricultural research is readily available to communities and businesses who can put knowledge into practice to improve their lives.

The formation of the Cooperative Extension Service began with the passage of the Morrill Act of 1862. The United States gave each state 30,000 acres of land for each member of its congressional delegation. The land was sold, providing funds for post-secondary education focused on agricultural and mechanical arts. The act established the Agricultural and Mechanical College of Alabama, now Auburn University, which became the main office for the statewide Alabama Extension program (Langcuster 2012). However, the formalization of Extension came with the passing of the Smith-Lever Act in 1914. This then-novel policy funded land-grant universities to establish a network of county Extension agents. At its conception, agents enabled land-grant universities to disseminate information that addressed rural agricultural issues. The act stated that Extension work connected with the USDA would be executed through land-grant universities (NIFA 2016).

The need for education among farmers and rural community development led to the Alabama Extension Service, which became the Alabama Cooperative Extension System (ACES).

ACES partners with land-grant universities Auburn University, Alabama A&M University, and Tuskegee University to improve Alabama's economy and residents' quality of life by delivering educational programs to each of the 67 counties. These programs evolve to meet the state's changing needs, are research-based, related to current issues, and provided via regional and local Extension Agents (Langcuster 2012).

Extension Master Gardener Program

The Extension Master Gardener program is a partnership between land-grant universities, the Cooperative Extension System, and Master Gardener volunteers. Extension agents train Master Gardener volunteers to be educators. Therefore, the program is called the Extension Master Gardener (EMG) program. Under the direction of the Alabama Cooperative Extension System, EMG volunteers increase the availability of and provide reliable, relevant, and reachable home horticulture information.

The concept of the Master Gardener program traces its roots to Washington State University in 1972. Public demand for home gardening information increased due to rapid urban growth. Extension agent David Gibby, feeling overwhelmed by the large volume of requests, proposed the idea of training volunteers to assist Extension with consumer horticulture education in the community. Results were better than expected, and the EMG program spread quickly.

Today, the EMG program exists in 49 states, the District of Columbia, at least four Canadian provinces, and South Korea. It serves as a model for other volunteer programs. In 2020, an estimated 84,000 EMG volunteers reported 3.1 million service hours and educated 8.4 million clients. Naturally, EMG volunteers helped people improve their physical and mental health, gardening and landscape practices, and awareness of environmental issues. Their work contributed an estimated $88 million in value to the public (EMG National Committee 2020).

The Alabama EMG program is a partnership between the land grant universities (Alabama A&M University, Auburn University, and Tuskegee University), Alabama Extension staff (County Extension Office Administrators, County Extension Coordinators, and Home Grounds Regional Extension Agents), and extension-trained, Master Gardener volunteers. The program started in 1981 when New York Master Gardener Mary Lou McNabb introduced the Master Gardener program concept to Gary Murray, a Madison County Extension Agent. McNabb and Murray, along with the help of a few other Extension Agents, organized the first Alabama EMG training series in Huntsville, Alabama (ACES 2018).

To become an Alabama EMG volunteer, one must finish the 50-hour training program which provides hands-on and classroom instruction and volunteer a total of 50 hours during the year. After year one, EMG volunteers must report a minimum of 25 volunteer service hours annually and pay membership dues and complete 10 hours of continuing education units (CEU) to maintain active status (Carroll 2021). Certified EMG volunteers, Extension agents, and local experts teach classes on vegetable gardening, trees, home lawns, and annual and perennial flowers.

EMG volunteers are an asset to the Alabama Cooperative Extension System. They host public education outreach activities, manage and support teaching gardens, sponsor, or support community gardens, donate fresh produce to charity, assist with research projects including Harvest for Health and the Bee Biodiversity Initiative, and much more (ACES 2018). The EMG volunteer service hours allow Extension personnel to focus their time and effort toward more advanced or technical programming.

The impact the Alabama EMG volunteers have on their local communities is evident. In 2018, Alabama EMGs volunteered 78,920 hours in public education outreach activities, having a

public value of $1.7 million, and maintained teaching gardens in 21 counties with over 400,000 visitors. EMG volunteers sponsored 13 community gardens that donated 12 tons of produce or 96,000 half-cup servings, equal to the retail price of $39,600 in 2018. Harvest for Health is a project led by the University of Alabama Birmingham's Comprehensive Cancer Center and Alabama Extension's Home Grounds Team that uses a backyard garden to teach new, healthy habits to cancer survivors. To date, 492 volunteers have mentored cancer survivors. Pilot studies (2013-2017) showed that gardening significantly improved the diet and health of the cancer survivor participants (ACES 2018).

METHODOLOGY

The purpose of the overall assessment was to collect demographic information, activity preferences, motivations, and perspectives, and experiences of those involved in the Alabama Extension Master Gardener (EMG) program. This article addresses the perspectives and experiences of EMG personnel and volunteers.

Population and Sample

The sample for this portion of the study was drawn from Alabama Extension personnel population (43 County Extension Office Administrators, 37 County Extension Coordinators, and 12 Home Grounds Regional Extension Agents) (Auburn University Extension 2021) and 1,824 the EMG volunteer population as of 2019.

Research Design

This study consisted of four surveys created using Qualtrics Survey Software (Qualtrics 2020). Each of the four groups involved in the EMG program received a survey specific to their group (Appendices 1-4). Before distribution, the surveys, recruitment letters, and invitation emails were reviewed and approved by the Auburn University Institutional Review Board for use from 30 Nov. 2020 to 9 Feb. 2021.

All potential participants received invitation emails on 7 Dec. 2020. Each email contained a separate information letter for each of the four study groups. Each letter included a link to the Qualtrics survey, explained the purpose of the study, and stated that participation would be voluntary (Appendices 5-8). The surveys remained open for two months. Participants received reminder emails during weeks 3, 5, 7, and 9.

Instrumentation

Questions for the volunteer survey came from a national survey and previous studies from the University of Georgia and Iowa State University (Takle et al. 2016; Dorn et al. 2018). The EMG volunteer survey was the longest and contained four sections: demographics, VSA preferences, motivations, and perceived benefits, and the personnel surveys were similar in length. All four surveys contained questions about volunteer background and local programs. The background questions related to experiences, while local programs questions related to perspectives. This study addresses the experiences and perspectives of volunteers and all groups of ACES personnel involved with the Alabama EMG program.

Experience questions included years of service or experience and service hours in 2019, or hours spent recruiting, training, and managing EMG volunteers annually. To analyze perspectives, volunteers and personnel answered the following open-ended question: Describe your measure of a successful program – or suggest one strategy for improving the local program if you feel it is not currently successful.

Data Coding and Analysis

Data from the four surveys were analyzed using the SPSS software package (IBM SPSS Statistics for Macintosh 2021). SPSS was used to perform several tests to analyze data. Specific methods are as follows:

Active years of service. The number of active years of service is the number of years an EMG volunteer has maintained active status (50 hours in the training year and 25 hours annually, plus 10 hours of CEUs). Participants selected one of the six categories ranging from: "1-3 years," "4-6 years," "7-9 years," "10-12 years," "13-15 years," and ">15 years."

Years of experience. EMG County Extension Coordinators, Regional Extension Agents, and Office Administrators reported the years of experience they had working with volunteers. Participants selected one of the following five categories; "Less than 1 year," "1-3 years," "4-6 years," "7-9 years," and "10 or more years."

Service hours. EMG volunteers reported the number of service hours they completed in 2019 (the last complete program cycle before the survey). Participants selected one of the following seven categories; "Less than 25 hours," "Between 25 and 49 hours," "Between 50 and 74 hours," "Between 75 and 99 hours," "Between 100 and 124 hours," "Between 125 and 149 hours," and "150 hours or more."

Hours invested. EMG County Extension Coordinators and Regional Extension Agents reported the number of hours they invest annually in recruiting, training, and managing EMG volunteers. Participants selected one of the following five categories; "This question does not apply to me," "less than 80 hours per year (less than 10 total days)," "about 80 hours per year (about 10 total days)," "about 120 hours per year (about 15 total days)," and " about 160 hours per year (about 20 total days)."

Qualitative comparisons of open-ended responses were made between data from the personnel and volunteer surveys. Response categories were identified from the open-ended question “Describe your measure of a successful program – or suggest one strategy for improving the local program if you feel it is not currently successful.” Descriptive statistics

established category frequencies of EMG personnel, including years of experience working with volunteers, time spent recruiting, training, and managing EMG volunteers.

RESULTS

Response Rates

The completed surveys included 32 County Extension Office Administrator surveys, 35 County Extension Coordinator surveys, 11 Home Grounds Regional Extension Agent surveys, and 864 EMG volunteer surveys. The response rates were 71.1%, 94.6%, 57.9%, and 48.4% respectively.

Experience

Based on self-reported status, 41.1% of EMG volunteers have completed between one and three years of active service, followed by 21.2% of EMG volunteers completing four to six years of active service. In 2019, 84.3% of participants met the annual service hour requirement of 25 hours for certified EMG volunteers, and 51.6% reported 75 or more service hours (Table 5.1).

Most personnel have been working with volunteers for over ten years, including 82.9% of County Extension Coordinators, 58.6% of County Office Administrators, and 50.0% of Regional Extension Agents. Over 75% of Regional Extension Agents invest 80 or more hours annually in recruiting, training, and managing EMG volunteers, as opposed to less than 25% of County Extension Coordinators (Table 5.2).

Participants were asked to describe the measures of a successful program. Seven response categories were identified from 573 responses to the open-ended question. Percentages of responses related to each of the seven categories were calculated. When personnel (County Extension Coordinators, Office Administrators, Regional Extension Agents) described measures of a successful program, 21 of the 42 (50.0%) comments mentioned community outreach

compared to 227 of the 531 (42.7%) of the volunteer comments. Twenty-four (57.1%) personnel comments mentioned participation and involvement in service activities compared to 181 (34.1%) of the volunteer comments. Eleven (26.2%) personnel comments mentioned success measured by recruitment effort and the number of interns each year compared to 82 (15.4%) of the volunteer comments. Five (11.9%) personnel comments mentioned having strong leadership and organization compared to 63 (11.9%) of the volunteer comments. Five (11.9%) personnel comments mentioned the program's reputation compared to 36 (6.8%) of the volunteer comments. Volunteer comments also mentioned friendships (9.8%) and volunteer learning (8.5%) as indicators of a successful program (Figure 5.1).

Participants were asked to describe strategies to improve the success of the Extension Master Gardener program. Six response categories were identified from 105 responses to the open-ended question. Percentages of responses related to each of the six categories were calculated. When personnel (County Extension Coordinators, Office Administrators, Regional Extension Agents) described strategies to improve the success of the program, 7 of the 16 (43.8%) comments mentioned recruiting younger volunteers compared to 30 of the 89 (33.7%) volunteer comments. Five (31.3%) personnel comments mentioned participation and involvement in service activities compared to 18 (20.2%) volunteer comments. Five (31.3%) personnel comments mentioned communication, stronger leadership, and teamwork compared to 17 (19.1%) of the volunteer comments. Three (18.8%) personnel comments mentioned retaining new members and or mentorship programs compared to 21 (23.6%) of the volunteer comments. One (6.3%) personnel comment suggested more convenient meeting times help outside of business hours so that those who work can participate compared to 8 (9.0%) of the volunteer

comments. Volunteer comments also suggested environmental education material (7.9%) (Figure 5.2).

DISSCUSSION

Alabama EMG volunteers and personnel are dedicated, as indicated by the number of active years of service volunteers and personnel years of experience working with volunteers. The national median of hours served by all volunteers is 52 hours (U.S. Bureau of Labor Statistics, 2016); Alabama EMG volunteers surpassed this as over half (51.6%) reported 75 or more service hours. Over 75% of Regional Extension Agents invest 80 or more hours annually in recruiting, training, and managing EMG volunteers. This is expected because the role of home grounds regional Extension agents is to support homeowners with projects that help them learn about gardening. In addition, they help train and support the Alabama EMG volunteers. Most county extension coordinators invest under 80 hours. This is understandable since their primary role is to provide administrative leadership across all ACES program areas in a county office.

Personnel and EMG Volunteers seem to view community outreach and volunteer activities as most important when measuring program success. Participants in the EMG program also agree that recruitment is a strategy for EMG success. Many of the comments mentioned planning programs, activities, and training outside of working hours to recruit working-age volunteers. Another solution may be to implement mentorship programs to improve volunteer retention.

References

Alabama Cooperative Extension System. 2018. What is a Master Gardener: Our Beginnings. [accessed 2021 Sep 8]. https://mg.aces.edu/about/.

Auburn University Extension. 2021. Alabama Cooperative Extension Service Directory. https://ssl.acesag.auburn.edu/directory-new/search.php?&dq=county%20extension%20coordinator&btnS=&pageNumber=1&pageSize=64.

Carroll D. 2021. Calculating Your Service Hours. Lee County Master Gardeners of Alabama. [accessed 2021 Sep 14]. https://www.leemg.org/log-hours.html.

Dorn ST, Newberry III MG, Bauske EM, Pennisi SV. 2018. Extension Master Gardener Volunteers of the 21st Century: Educated, Prosperous, and Committed. Horttechnology. 28(2):218–229. doi:https://doi.org/10.21273/HORTTECH03998-18.

Extension Master Gardener National Committee. 2020. Extension Master Gardener 2020 National Report Overview. [accessed 2021 Oct 5]. https://usdaars.maps.arcgis.com/apps/dashboards/f29368e13d5b4cefa6f21c050a1f8c7e.

IBM SPSS Statistics for Macintosh. 2021. Version 28.0. Armonk, New York: IBM Corporation.

Langcuster J. 2012. Alabama Cooperative Extension System (ACES). In: Encyclopedia of Alabama. [accessed 2021 Oct 13]. http://www.encyclopediaofalabama.org/article/h-3287.

National Institute of Food and Agriculture (NIFA). 2016. Cooperative Extension History. United States Department of Agriculture. [accessed 2021 Sep 23]. https://nifa.usda.gov/cooperative-extension-history.

Qualtrics. 2020. Qualtrics. Provo, Utah, USA: Qualtrics. https://www.qualtrics.com.

Takle B, Haynes C, Schrock DS. 2016. Motivation and Retention of Iowa Master Gardeners. Horttechnology. 26(4):522–529. doi:https://doi.org/10.21273/HORTTECH.26.4.522.

Fig. 5.1. Extension Master Gardener Personnel and Volunteer Measures of Program Success

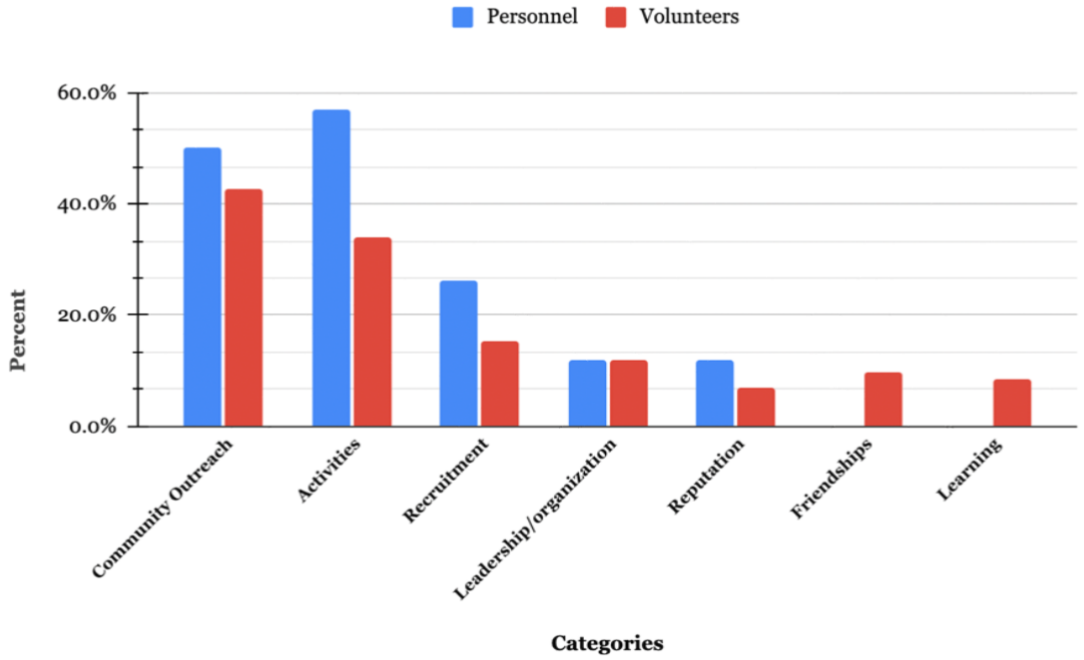

Fig. 5.2. Personnel and Volunteer Strategies to Improve the Success of the Alabama Extension Master Gardener Program

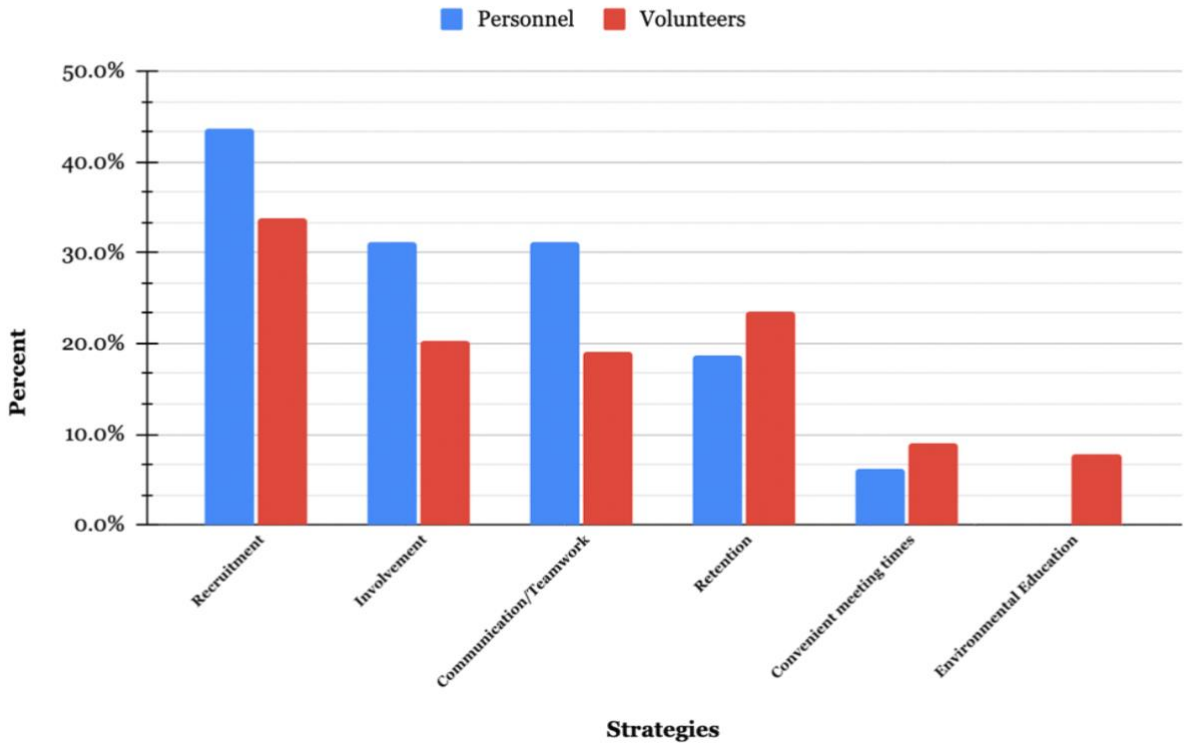

Table 5.1. EMG volunteer experience

	Frequency (n)	Percent (%)
Active years of service*		
1-3 years	322	41.1%
4-6 years	166	21.2%
7-9 years	90	11.5%
10-12 years	74	9.5%
13-15 years	48	6.1%
>15 years	83	10.6%
Service hours 2019		
<25 hours	121	15.7%
Between 25 and 49 hours	149	19.3%
Between 50 and 74 hours	104	13.5%
Between 75 and 99 hours	70	9.1%
Between 100 and 124 hours	78	10.1%
Between 125 and 149 hours	33	4.3%
150 or more hours	217	28.1%

*Active status means volunteers have paid annual dues, met annual volunteer service hour requirements (25 hours for certified EMG and 50 hours for interns), and completed 10 hours of continuing education units (CEUs).

Table 5.2 EMG personnel experience

	County Extension Coordinator		Regional Extension Agent		Office Administrator	
	Count (n)	Percent (%)	Count (n)	Percent (%)	Count (n)	Percent (%)
Years working with volunteers						
Less than 1 year	1	2.8%	1	8.3%	2	6.9%
1-3 years	1	2.8%	0	0.0%	6	20.7%
4-6 years	1	2.8%	5	41.7%	4	13.8%
7-9 years	3	8.6%	0	0.0%	0	0.0%
10 or more years	29	82.9%	6	50.0%	17	58.6%
Hours invested annually for volunteer recruiting						
This question does not apply to me	5	14.7%	0	0.0%	-	-
Less than 80 hours	22	64.7%	2	16.7%	-	-
About 80 hours	5	14.7%	6	50.0%	-	-
About 120 hours	0	0.0%	1	8.3%	-	-
About 160 hours	0	0.0%	0	0.0%	-	-
More than 160 hours	2	5.9%	3	25.0%	-	-
Hours invested annually for volunteer training						
This question does not apply to me	13	38.2%	0	0.0%	-	-
Less than 80 hours	17	50.0%	1	10.0%	-	-
About 80 hours	1	2.9%	1	10.0%	-	-
About 120 hours	2	5.9%	2	20.0%	-	-
About 160 hours	0	0.0%	0	0.0%	-	-
More than 160 hours	1	2.9%	6	50.0%	-	-
Hours invested annually for volunteer managing						
This question does not apply to me	10	29.4%	0	0.0%	-	-
Less than 80 hours	16	47.1%	1	12.5%	-	-
About 80 hours	4	11.8%	2	25.0%	-	-
About 120 hours	3	8.8%	3	37.5%	-	-
About 160 hours	0	0.0%	0	0.0%	-	-
More than 160 hours	1	2.9%	2	25.0%	-	-

[a] Active status means volunteers have paid annual dues, met annual volunteer service hour requirements (25 hours for certified EMG and 50 hours for interns), and completed 10 hours of continuing education units (CEUs).
[b] Individuals who are participating in the Master Gardener volunteer training and certification
[c] Individuals who have completed required training and volunteer service but have not reported active volunteer service and/or failed to pay annual dues by December 31.

Appendix 1

Extension Master Gardener Volunteer E-mail Invitation for Online Survey

Hello all Extension Master Gardener Volunteers,

As the State Program Coordinator for Extension Master Gardeners, I hope that you will participate in a strategic assessment of our program. You may participate (*or may choose not to participate*) if you are an active, inactive, or intern Master Gardener.

Completing all four parts of this survey should take about 50 minutes. However, please notice that I have broken this into **mini-surveys, each taking you 10 to 15**. Completing all four mini-surveys earns you FOUR HOURS volunteer time (quadruple time!).

There are no known risks or discomforts associated with your participation in this research.

An information letter is page one of the survey and details this research and its purpose. If you decide to participate, you will access the survey from a link at the bottom of the information letter page. (*survey information letter link)*

Please contact me with any questions, via email or phone call.

Thank you for your support of the Extension Master Gardeners Program,

Kerry Smith
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State MG Program Coordinator
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Appendix 2

Home Grounds Regional Extension Agent E-mail Invitation for Online Survey

Hello Alabama Extension Home Grounds, Regional Extension Agent,

As the State Program Coordinator for Extension Master Gardeners, I hope that you will participate in a strategic assessment of this Alabama Extension, Home Grounds program. One step in this process is a survey of everyone connected to the program, volunteers and all Extension personnel (County Extension Office Administrators, County Extension Coordinators, County Extension Agents, and Regional Extension Agents) working with or familiar with the Extension Master Gardeners program.

Your participation is voluntary. The survey for Regional Extension Agents should take 10-15 minutes.

There are no known risks or discomforts associated with your participation in this research.

An information letter is page one of the survey and details this research and its purpose. If you decide to participate, you will access the survey from a link at the bottom of the information letter page. (*survey information letter link)*

Please contact me with any questions, via email or phone call.

Thank you for your support of the Extension Master Gardeners Program,

Kerry Smith
Home Grounds Team Co-Coordinator &
State MG Program Coordinator
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Appendix 3

County Extension Coordinator E-mail Invitation for Online Survey

Hello Alabama Extension, County Extension Coordinator,

As the State Program Coordinator for Extension Master Gardeners, I hope that you will participate in a strategic assessment of this Alabama Extension, Home Grounds program. One step in this process is a survey of everyone connected to the program, volunteers and all Extension personnel (County Extension Office Administrators, County Extension Coordinators, County Extension Agents, and Regional Extension Agents) working with or familiar with the Extension Master Gardeners program.

Your participation is voluntary. The survey for County Extension Coordinators should take 10-15 minutes.

There are no known risks or discomforts associated with your participation in this research.

An information letter is page one of the survey and details this research and its purpose. If you decide to participate, you will access the survey from a link at the bottom of the information letter page. (*survey information letter link)*

Please contact me with any questions, via email or phone call.

Thank you for your support of the Extension Master Gardeners Program,

Kerry Smith
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Appendix 4

County Extension Office Administrator E-mail Invitation for Online Survey

Hello Alabama Extension, County Extension Office Administrator,

As the State Program Coordinator for Extension Master Gardeners, I hope that you will participate in a strategic assessment of this Alabama Extension, Home Grounds program. One step in this process is a survey of everyone connected to the program, volunteers and all Extension personnel (County Extension Office Administrators, County Extension Coordinators, County Extension Agents, and Regional Extension Agents) working with or familiar with the Extension Master Gardeners program.

Your participation is voluntary. The survey for County Extension Office Administrators should take about 10 minutes.

There are no known risks or discomforts associated with your participation in this research.

An information letter is page one of the survey and details this research and its purpose. If you decide to participate, you will access the survey from a link at the bottom of the information letter page. (*survey information letter link)*

Please contact me with any questions, via email or phone call.

Thank you for your support of the Extension Master Gardeners Program,

Kerry Smith
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Appendix 5

Extension Master Gardener Volunteer Survey

Dear Alabama Master Gardener:

First, we appreciate your support of Alabama Extension's Home Grounds team. We rely on your generous volunteer hours to help us each year. Thank you for being an Extension Ambassador!

This year has been an exercise in lessons learned, patience tested, many Plan-B's, and even Plan-Z. One effort, derailed by the challenges of Covid19, is a strategic assessment of Alabama's Extension Master Gardeners program. Our process started with a small advisory group, having representation from all levels across this program.

Why this survey? One recommendation, from the advisory group, was to collect insight from everyone involved with our program. As a result, I am surveying Extension personnel who work with Master Gardeners (County Extension Coordinators, County Extension Agents, Regional Extension Agents, County Extension Office Administrators) and you, the volunteers, to collect everyone's perspectives and experiences.

Has this survey been reviewed? This statewide survey has been reviewed and approved by the Institutional Review Board (IRB-approved Study 20-548 D, Smith). Your replies contribute to a quantitative assessment that will help Extension with future programming and program management. We greatly appreciate your help with this.

Who is invited to participate? Everyone! Your survey is intended for all Alabama Extension Master Gardeners, those currently active, interning, or inactive. It is lengthy and so we have broken it into four mini-surveys to encourage participation. All sections are important for a thorough strategic assessment.

How do you participate? Completing all four parts of this survey should take about 50 minutes. However, please notice that each **mini-survey should take 10 to 15**. After completing each survey, take a break, and then start the next one at any time. Completing all four mini-surveys earns you FOUR HOURS volunteer time (quadruple time!).

- Part-A: What are your favorite volunteer activities and how important are they to your community? Time estimate = about 15 minutes
- Part-B: What motivates you as a volunteer in this program? Time estimate = about 15 minutes
- Part-C: What are the benefits of this program, to you and to the community? Time estimate = 10 minutes or less
- Part-D: Tell us your background in this program, and your demographics information. Time estimate = 10 minutes or less

The survey uses Qualtrics survey software. Due to screen size, it will be easier to respond to the questions using a tablet or desktop. It is available on all device types. To participate, click on the arrow (below) to start the survey. It will be open for two months, starting 11/30/2020 and closing on 1/31/2021.

What if you do not want to participate? Involvement in the survey is voluntary, and you may choose not to participate or to stop at any time, without penalty.

Are your answers anonymous? We have taken every precaution (including removing identifying data) to insure you are anonymous. The results of the survey may be published, but no individual identifying information will appear. We will share a summary of the results with all participants.

Is there any way that being in this study could harm you? There are no known risks or discomforts associated with this research. If you have any questions about this project, please feel free to call me at 334-844-3036 or send an e-mail to smithkp@auburn.edu.

Questions or concerns about your rights as a research participant should be directed to Auburn University's Institutional Review Board; telephone (334-844-5966), email address irbadmin@auburn.edu. Keep this letter for your records.

Thank you for your consideration! Please encourage all Master Gardeners to participate.

Sincerely,

Kerry

ALABAMA MASTER GARDENERS
ALABAMA COOPERATIVE EXTENSION SYSTEM

Kerry Smith
Alabama Extension Home Grounds Team, Co-Leader, &
State Program Coordinator, Extension Master Gardeners
Auburn University, Department of Horticulture101 Funchess Hall
Auburn, AL 36849
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Tel. 334-844-3036

0 ….. I agree (I wish to continue with the survey)
0 ….. I DO NOT agree (I do not wish to continue with the survey)

PART A-1. Your Extension Master Gardener volunteering preferences:

Please indicate your level of involvement in the following volunteer service opportunities. There are 25 common, public outreach activities listed. I'm interested to know your least favorite and favorite volunteer activities. It should take about 15 minutes to answer Part A-1 and -2.

Never = 0% of the time
Rarely = Less than 50% of the time
Sometimes = About 50% of the time
Often = More than 50% of the time
Always = 100% of the time

	Never (0%)	Rarely (<50%)	Sometimes (about 50%)	Often (>50%)	Always (100%)
Answer clientele questions one-on-one (in-person). (1)	O	O	O	O	O
Answer horticulture-related phone calls at an Extension Office (Helpline or Info Line) (2)	O	O	O	O	O
Assist 4-H with garden related projects or programs (3)	O	O	O	O	O
Assist 4-H with non-garden related projects or programs (4)	O	O	O	O	O
Assist with community festivals or events (e. g. Arbor Day or Earth Day) (5)	O	O	O	O	O
Assist with community solid waste reduction programs (composting or recycling) (6)	O	O	O	O	O
Assist youth education programs that are not in a garden (e. g. Classroom in the Forest, Groundwater Festival, Farm City) (7)	O	O	O	O	O
Assist educational programs for youth that are within a garden (8)	O	O	O	O	O
Prepare and present programs for adults (e.g. Lunch & Learn, speakers bureau, etc.) (9)	O	O	O	O	O
Assist research (e.g. research activity with Extension or a university, and/or collect research data) (10)	O	O	O	O	O
Assist or Coordinate gardening project at a correctional facility (adult or juvenile population) (11)	O	O	O	O	O
Assist or coordinate a demonstration garden or plot (12)	O	O	O	O	O

	Never (0%)	Rarely (<50%)	Sometimes (about 50%)	Often (>50%)	Always (100%)
Assist or coordinate projects on municipal green space (e. g. public parks, arboretums, botanical gardens, historic sites) (13)	O	O	O	O	O
Write/compile Extension publications or educational materials (14)	O	O	O	O	O

Staff plant clinics or Ask a Master Gardener booths (e. g. at libraries, farmer's markets, civic events, etc.) (15)	O	O	O	O	O
Participate in radio and/or TV programs (16)	O	O	O	O	O
Judge or sponsor County Fair exhibits (17)	O	O	O	O	O
Assist with Extension Master Gardeners Intern training (18)	O	O	O	O	O
Contribute horticulture articles for a column in local paper or magazine (19)	O	O	O	O	O
Coordinate, work in, or mentor a community garden (20)	O	O	O	O	O
Offer garden consultation and advising to private or public properties (21)	O	O	O	O	O
Write about horticultural topics for an Internet website, Extension blog, or other social media (e.g., Facebook, Instagram, etc.) (22)	O	O	O	O	O
Assist or conduct horticulture therapy projects (e.g. at hospitals, hospice, assisted living, day care, etc.) (23)	O	O	O	O	O
Provide clerical or other support at your County Extension office (24)	O	O	O	O	O
Participate in city/county beautification projects (e.g., design, planting or maintenance) (25)	O	O	O	O	O
Other_____ (26)	O	O	O	O	O

What do you think is the single **most important thing you have accomplished** as an Extension Master Gardener volunteer? Write a brief statement.

PART A-2. In your opinion, how unimportant or important are each of the following Extension Master Gardeners activities to your community?

This is the same list used to ask about your favorite volunteer activities. Now I want you to estimate their level of importance in your community.

	Unimportant	Less Important	Neutral	Important	Extremely Important
Answer clientele questions one-on-one (in-person). (1)	O	O	O	O	O
Answer horticulture-related phone calls at an Extension Office (Helpline or Info Line) (2)	O	O	O	O	O
Assist 4-H with garden related projects or programs (3)	O	O	O	O	O
Assist 4-H with non-garden related projects or programs (4)	O	O	O	O	O
Assist with community festivals or events (e. g. Arbor Day or Earth Day) (5)	O	O	O	O	O
Assist with community solid waste reduction programs (composting or recycling) (6)	O	O	O	O	O
Assist youth education programs – those not in a garden (e. g. Classroom in the Forest, Groundwater Festival, Farm City) (7)	O	O	O	O	O
Assist educational programs for youth (within a garden) (8)	O	O	O	O	O
Prepare and present programs for adults (e.g. Lunch & Learn, speakers bureau, etc.) (9)	O	O	O	O	O
Assist research (e.g. research activity with Extension or a university, and/or collect research data) (10)	O	O	O	O	O
Assist or Coordinate gardening project at a correctional facility (adult or juvenile population) (11)	O	O	O	O	O
Assist or coordinate a demonstration garden or plot (12)	O	O	O	O	O
Assist or coordinate projects on municipal green space (e. g. public parks, arboretums, botanical gardens, historic sites) (13)	O	O	O	O	O

	Unimportant	Less Importance	Neutral	Important	Extremely important
Write/compile Extension publications or educational materials (14)	O	O	O	O	O
Staff plant clinics or Ask a Master Gardener booths (e. g. at libraries, farmer's markets, civic events, etc.) (15)	O	O	O	O	O
Participate in radio and/or TV programs (16)	O	O	O	O	O
Judge or sponsor County Fair exhibits (17)	O	O	O	O	O
Assist with Extension Master Gardeners Intern training (18)	O	O	O	O	O
Contribute horticulture articles for a column in local paper or magazine (19)	O	O	O	O	O
Coordinate, work in, or mentor a community garden (20)	O	O	O	O	O
Offer garden consultation and advising to private or public properties (21)	O	O	O	O	O
Write about horticultural topics for an Internet website, Extension blog, or other social media (e.g., Facebook, Instagram, etc.) (22)	O	O	O	O	O
Assist or conduct horticulture therapy projects (e.g. at hospitals, hospice, assisted living, day care, etc.) (23)	O	O	O	O	O
Provide clerical or other support at your County Extension office (24)	O	O	O	O	O
Participate in city/county beautification projects (e.g., design, planting or maintenance) (25)	O	O	O	O	O
Other _____ (26)	O	O	O	O	O

What do you think is the single most important contribution that the Extension Master Gardeners **program has made in your local community**? Write a brief statement.

PART B. Next, please tell me why you volunteer as an Extension Master Gardener. How unimportant or important is each statement for you? These statements were used in a national survey. Let's see how Alabama's Extension Master Gardeners' motivations compare to Extension Master Gardeners in other states. It should take 10-15 minutes to answer Part-B.

	Unimportant	Less Importance	Neutral	Important	Extremely Important
Volunteering as an Extension Master Gardener can help me get my foot in the door at a place where I would like to work. (1)	O	O	O	O	O
I have friends who volunteer as Extension Master Gardeners. (2)	O	O	O	O	O
I am concerned about people less fortunate than myself. (3)	O	O	O	O	O
Volunteering as an Extension Master Gardener makes me feel important. (4)	O	O	O	O	O
No matter how bad I've been feeling, volunteering helps me to forget about it. (5)	O	O	O	O	O
I am genuinely concerned about the home gardeners I am serving. (6)	O	O	O	O	O
By volunteering, I feel less lonely. (7)	O	O	O	O	O
My friends want me to volunteer as an Extension Master Gardener. (8)	O	O	O	O	O
Through the Extension Master Gardener program, I can make new contacts that might help my business career. (9)	O	O	O	O	O
Doing volunteer work relieves me of some of the guilt over being more fortunate than others. (10)	O	O	O	O	O
By volunteering as an Extension Master Gardener, I can learn more about horticulture and home gardening. (11)	O	O	O	O	O
I am interested in community service activities. (12)	O	O	O	O	O
Volunteering as an Extension Master Gardener increases my self-esteem. (13)	O	O	O	O	O
Volunteering as an Extension Master Gardener allows me to gain a new perspective on issues in my community. (14)	O	O	O	O	O

	Unimportant	Less Importance	Neutral	Important	Extremely important
The Extension Master Gardeners program allows me to explore different career options. (15)	o	o	o	o	o
I feel compassion toward people in need. (16)	o	o	o	o	o
My close friends place a high value on community service. (17)	o	o	o	o	o
Volunteering as an Extension Master Gardener lets me learn horticulture through direct, hands-on experience. (18)	o	o	o	o	o
I feel it is important to help others. (19)	o	o	o	o	o
Volunteering helps me to work through my own personal problems. (20)	o	o	o	o	o
As an Extension Master Gardener, I can do something for a horticultural cause that is important to me. (21)	o	o	o	o	o
Volunteering is an important activity to many of the people I know. (22)	o	o	o	o	o
Volunteering is a good escape from my own troubles. (23)	o	o	o	o	o
I can learn how to deal with a variety of people as an Extension Master Gardener. (24)	o	o	o	o	o
Volunteering as an Extension Master Gardener makes me feel needed. (25)	o	o	o	o	o
Volunteering as an Extension Master Gardener helps me feel better about myself. (26)	o	o	o	o	o
My Extension Master Gardener experience will look good on my resume. (27)	o	o	o	o	o
Volunteering as an Extension Master Gardener is a way to make new friends. (28)	o	o	o	o	o
Through the Extension Master Gardeners program, I can explore my own strengths. (29)	o	o	o	o	o
Volunteering as an Extension Master Gardener will help me to succeed in my chosen profession. (30)	o	o	o	o	o

PART C. You're half-way to the finish line!

Next, please tell me the benefits you think the Extension Master Gardeners program offers. Answer the following questions by indicating your level of agreement with this statement, "The Extension Master Gardeners program _____." It should take about 10 minutes to answer Part-C.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Provides opportunities to meet my humanitarian obligations through volunteer service. (1)	O	O	O	O	O
Contributes to community growth and development. (2)	O	O	O	O	O
Allows me to make new contacts that might help my business or career. (3)	O	O	O	O	O
Provides practical instruction and hands-on horticulture experiences that enhance learning. (4)	O	O	O	O	O
Is an opportunity for me to feel I am doing something valuable for horticulture in Alabama. (5)	O	O	O	O	O
Allows me to be more engaged in my community. (6)	O	O	O	O	O
Provides opportunities to learn about plants, soil and horticultural topics. (7)	O	O	O	O	O
Provides adults with social rewards for productive efforts. (8)	O	O	O	O	O
Teaches me skills that help me at my paid work. (9)	O	O	O	O	O
Is regarded as a prestigious organization in the community. (10)	O	O	O	O	O
Provides an economic benefit to the community. (11)	O	O	O	O	O
Teaches skills that benefit my home garden and landscape decisions. (12)	O	O	O	O	O
Enhances individual self-esteem through volunteerism. (13)	O	O	O	O	O
Helps me feel more positive about my place in the world as a result of volunteering as an Extension Master Gardener. (14)	O	O	O	O	O

Is a connection point that links multiple community organizations together. (15)	O	O	O	O	O
Is an opportunity for me to feel I am doing something valuable for the environment. (16)	O	O	O	O	O
Is an opportunity for me to help alleviate some societal problems. (17)	O	O	O	O	O
Are there other benefits not listed? If so, please share your thoughts in a brief statement. _____ (18)	O	O	O	O	O

PART D. This is the last section. You made it!

- First, please tell me about your volunteer background in the Extension Master Gardeners program. When did you first join? Were you active or inactive in 2019? Etc.
- Describe your local program. What is your measure of its success? Or if you feel it is not successful, please suggest one strategy for improving it.
- Lastly, please answer a few demographics questions.

It should take about 10 minutes to answer Part-D.

Part D-1. Your background in the program:	
What year did you first take the Extension Master Gardeners training course?	_ _ _ _
What is the 5-digit zip code where you live?	_ _ _ _ _
Since becoming a certified Extension Master Gardener, how many years have you been active (reporting the minimum 25 volunteer hours and 10 CEUs per year)? Skip this question if you are an Intern.	_____
In 2019, did you meet your requirements to become or to remain an active Extension Master Gardener? (50 volunteer hours for Intern certification – 25 volunteer hours and 10 CEUs for Certified MGs)	o No o I don't remember o Yes
In 2019, how many hours of volunteer service did you volunteer as an Extension Master Gardener? A confident estimate is acceptable. Enter numeric digits only.	_____
If you were NOT ACTIVE IN 2019, please check the primary reason you are no longer volunteering as an Extension Master Gardener.	o Does not apply to me – I was active in 2019 o Personal (e.g., health, family, etc.) o The program did not meet my expectations o I did not learn enough about horticulture o I do not have the time to volunteer o The volunteer opportunities did not meet my expectations o The cost of the program became too high o Privacy issues/background check o Ineffective coordination at the local level o Other _____

If you were NOT ACTIVE IN 2019, what, if anything, could we have done differently to have kept you in the program? Share a brief statement. Skip this question if you were active.	
I plan to continue as an active Extension Master Gardener next year, **in 2021.**	o No o Maybe o Yes
IF YOU DO NOT PLAN to be active next year, 2021, Please check the primary reason you do not plan to be an active Extension Master Gardener next year.	o Does not apply to me – I plan to be active in 2021 o Personal (e.g., health, family, etc.) o The program did not meet my expectations o I did not learn enough about horticulture o I do not have the time to volunteer o The volunteer opportunities did not meet my expectations o The cost of the program became too high o Privacy issues/background check o Ineffective coordination at the local level o other _____

Part D-2. Describe your local Extension Master Gardeners program:

Do Extension Master Gardeners in your local program ever partner with other volunteer organizations (e.g. other MG associations, churches, Habitat for Humanity, schools, scouts, civic clubs, etc.)?	o No o I don't know o Yes
If you or other members in your local program do partner with other volunteer organizations, Extension or non-Extension, what is a favorite activity? Give a brief statement.	
How many Extension Master Gardeners are in your county's program? A confident estimate is acceptable.	o Less than 30 o 31-60 o 61-100 o More than 100

Thinking of your current local Extension Master Gardeners program coordinator (Extension Agent), please fill in the blank. My Extension Agent is _____.

Never = 0% of the time
Rarely = Less than 50% of the time
Sometimes = About 50% of the time
Usually = More than 50% of the time
Always = 100% of the time

	Never	Rarely	Sometimes	Usually	Always
welcoming/friendly	O	O	O	O	O
organized	O	O	O	O	O
Available	O	O	O	O	O
knowledgeable/informed	O	O	O	O	O
responsive	O	O	O	O	O
supportive/encouraging	O	O	O	O	O

"Success" can be defined in multiple ways. Do you feel the Extension Master Gardeners program is successful in your county?

- o No
- o No opinion
- o Yes

Please expand your previous answer with a brief statement. Describe your measure of a successful program – or suggest one strategy for improving the local program if you feel it is not currently successful.

How dissatisfied or satisfied are you with your experience as an Extension Master Gardener?	o Very dissatisfied o Somewhat dissatisfied o Neither satisfied nor dissatisfied o Somewhat satisfied o Very satisfied

How unlikely or likely are you to recommend the Extension Master Gardeners' experience to others?	○ Extremely unlikely ○ Unlikely ○ Neither likely nor unlikely ○ Likely ○ Extremely likely

Part D-3. Demographics questions:	
In what year were you born?	____
What is your sex?	o Female o Male
Please indicate the race/ethnicity with which you identify (check all that apply):	o Asian o Black or African American o Latino or Hispanic o Native American, or Alaska Native o Native Hawaiian or Pacific Islander o White or Caucasian o More than one race o Other _____
What is the highest level of education/schooling you have attained?	o Some high school o High School diploma or GED o Some college or university o Associate's Degree Technical program / Professional degree o Bachelor's Degree o Master's Degree o Doctoral Degree o Professional degree (e.g. JD, MD, EdD, PharmD, etc.)
What is your current, annual household income level?	o under $25,000 o $25,000 - $49,999 o $50,000 - $99,999 o $100,000 - $149,999 o $150,000 - $199,999 o $200,000 or more
Are you now married, widowed, divorced, separated, or never married?	o Never married o Separated o Divorced o Widowed o Married
Have you ever served on active duty in the US Armed Forces?	o No o Yes
What best describes your current work/employment status **under pre-Covid-19 restrictions?**	o work outside the home full time o work outside the home part time o work from home full time o work from home part time o do not work outside the home or unable to work at this time o retired

Which of the following industries most closely matches the one in which you are **currently employed**?	○ Agriculture, Food and Natural Resources ○ Architecture and Construction ○ Arts, Audio/Video Technology & Communications ○ Business Management and Administration ○ Community and social services ○ Education and Training ○ Finance and accounting ○ Government and Public Administration ○ Health Science and Medical ○ Hospitality and Tourism ○ Human Services ○ Information Technology ○ Law, Public Safety, Corrections & Security ○ Manufacturing ○ Marketing, Sales and Service ○ Media and publishing ○ Professional services ○ Science, Technology, Engineering and Mathematics ○ Transportation, Distribution and Logistics ○ Other _____

If you are retired, which industry most closely matches your predominate employment during your working career?	o Agriculture, Food and Natural Resources o Architecture and Construction o Arts, Audio/Video Technology & Communications o Business Management and Administration o Community and social services o Education and Training o Finance and accounting o Government and Public Administration o Health Science and Medical o Hospitality and Tourism o Human Services o Information Technology o Law, Public Safety, Corrections & Security o Manufacturing o Marketing, Sales and Service o Media and publishing o Professional services o Science, Technology, Engineering and Mathematics o Transportation, Distribution and Logistics o Other _____

This concludes all four parts of our survey!
Thank you very much for participating in this Alabama Extension Master Gardeners strategic assessment process. You have earned FOUR volunteer hours as a result of your participation.

Kerry Smith
Alabama Extension Home Grounds Team, Co-Leader, &
State Program Coordinator, Extension Master Gardeners
Auburn University, Department of Horticulture
101 Funchess Hall
Auburn, AL 36849
Email: smithkp@auburn.edu
Tel. 334-844-3036

Appendix 6

Home Grounds Regional Extension Agent Survey

Hello Alabama Extension, Home Grounds Regional Extension Agents,

First, thank you so much for your support of Alabama Extension's Home Grounds team and its programs.

This year has been an exercise in lessons learned, patience tested, many Plan-B's, and even Plan-Z. One effort, derailed by the challenges of Covid19, is a strategic assessment of Alabama's Extension Master Gardeners program. Our strategic assessment process started with a small advisory group, having representation from all levels across this program.

Why this survey? One recommendation, from our advisory group, was to collect insight from everyone involved with our program. As a result, we are surveying all Extension personnel who work with Master Gardeners (County Extension Office Administrators, County Extension Coordinators, County Extension Agents, and Regional Extension Agents) and the volunteers themselves to collect everyone's perspectives and experiences.

Your replies contribute to a quantitative assessment that will guide future programming and program management. I greatly appreciate your help with this effort. With that, we all know 2020 has been a unique year. Please answer all questions based on yours and your county's pre-Covid-19 behavior and/or activities with the Extension Master Gardeners program.

Has this survey been reviewed? This statewide survey of the Alabama Extension Master Gardeners program has been reviewed and approved by the Institutional Review Board (IRB-approved Study 20-548 D, Smith).

Who is invited to participate? Everyone! You have been selected for this survey because you either have experience working with the Extension Master Gardeners program and its volunteers or you are in a county where the program is active.

How do you participate? The survey uses Qualtrics survey software. Due to screen size, it will be easier to respond to the questions using a tablet or desktop. It is available on all device types. To participate online, click on the arrow (below) to start the survey. It will be open for two months, starting 11/30/2020 and closing on 1/31/2021. Completing this online survey should take 10-15 minutes.

What if you do not want to participate? Involvement in the survey is voluntary, and you may choose not to participate or to stop at any time, without penalty or loss of benefits to which you are otherwise entitled.

Are your answers anonymous? We have taken every precaution (including removing identifying data)

to insure you are anonymous. The results of the survey may be published. We will share a summary of the results with all participants.

Is there any way that being in this study could harm you? There are no known risks or discomforts associated with this research. If you have any questions about this project, please feel free to call me at 334-844-3036 or send an e-mail to smithkp@auburn.edu.

Questions or concerns about your rights as a research participant should be directed to Auburn University's Institutional Review Board; telephone (334-844-5966), email address irbadmin@auburn.edu. Keep this letter for your records.

Thank you for your consideration! (copy this letter to email invitation – AND on page one of Qualtrics – put "agree"/"disagree" at page bottom)

Sincerely,

Kerry

Kerry Smith
Alabama Extension Home Grounds Team, Co-Leader, &
State Program Coordinator, Extension Master Gardeners
Auburn University, Department of Horticulture
101 Funchess Hall
Auburn, AL 36849

0 ….. I agree (I wish to continue with the survey)
0 ….. I DO NOT agree (I do not wish to continue with the survey)

1. How many Extension Master Gardener volunteer **associations** are in "your" counties?
    - (Open field)

2. How many of "your" counties host an **annual training** for intern Extension Master Gardener volunteers?
    - (Open field)

3. How many total Extension Master Gardener volunteers are active in "your" counties?
    - less than 25
    - 26-50
    - 51-100
    - 101-150
    - 151-200
    - More than 200

4. What are some activities and programs that Extension Master Gardeners are doing in "your" counties? (mark all that apply)
    - Fill-in for or assist staff at the Extension office
    - Contribute to Extension programs (development or delivery)
    - Promote Extension programs and the office itself (PR)
    - County Fair or other civic events
    - Farm City, Water Festival, Earth Day, etc.
    - Support community organizations and projects
    - Answer the Master Gardener Helpline
    - Lunch & Learn or other regular programs for the public
    - 4-H or school programs
    - Beautification projects
    - Demonstration or community food garden
    - (blank field)

5. How many total years of experience do you have working with volunteers – any program, either with Extension or with other organizations?
    - Less than 1 year
    - 1-3 years
    - 4-6 years
    - 7-9 years
    - 10 or more years
    - (open field)
6. How many Extension Master Gardener volunteer associations do you work with directly? Meaning, **you have primary** Extension responsibility for these groups.
    - 1
    - 2
    - 3
    - 4
    - 5
    - 6

7. How many County Extension Coordinators are involved with recruiting, training, and/or managing the Extension Master Gardener programs in "your" counties?
    - (open field)

8. How many County Extension Agents are involved with recruiting, training, and/or managing the Extension Master Gardener programs in "your" counties?
    - (open field)

9. How many Administrative staff are involved with recruiting, training, and/or managing the Extension Master Gardener programs in "your" counties?
    - (open field)

10. What is your current role in managing/leading the Extension Master Gardener programs in "your" counties?
    - I lead all activities related to the Extension Master Gardener programs in my counties
    - I share responsibilities related to these Extension Master Gardener program(s) with one or more County Extension Coordinators or County Extension Agents
    - I lead the activities related to some Extension Master Gardener programs, and one or more County Extension Coordinators lead Extension Master Gardener programs in their counties
    - (open)

11. How many total hours (or days) do you invest annually **in recruiting interns** for the Extension Master Gardener programs in "your" counties?
    - Less than 80 hours per year (less than 10 total days/year)
    - About 80 hours per year (about 10 total days/year)
    - About 120 hours per year (about 15 total days/year)
    - About 160 hours per year (about 20 total days/year)
    - More than 160 hours per year (more than 20 days/year)
    - (Open field)

12. How many total hours do you invest annually **in training** the Extension Master Gardener volunteers in "your" counties?
    - Less than 80 hours per year (less than 10 total days/year)
    - About 80 hours per year (about 10 total days/year)
    - About 120 hours per year (about 15 total days/year)
    - About 160 hours per year (about 20 total days/year)
    - More than 160 hours per year (more than 20 days/year)
    - (Open field)

13. How many total hours do you invest annually **in managing/leading** the Extension Master Gardener volunteers in "your" counties?
    - Less than 80 hours per year (less than 10 total days/year)
    - About 80 hours per year (about 10 total days/year)
    - About 120 hours per year (about 15 total days/year)
    - About 160 hours per year (about 20 total days/year)
    - More than 160 hours per year (more than 20 days/year)
    - (Open field)

14. Do you require Extension Master Gardener volunteers to assist you, or assume responsibilities, in recruiting, training, and/or managing the Extension Master Gardener county programs?
    - Yes
    - No
    - In some counties, but not all

15. How often do you engage Extension Master Gardener volunteers **in your Extension programs**?
    - 1-2 times per year
    - 3-4 times per year
    - 1-2 times per month
    - 3-4 times per month
    - More than 4 times per month

16. Expanding on your responses to Q. 14, and Q.15, detail what you think are the **two most important** activities that the Extension Master Gardener volunteers do for the Extension Home Grounds team.
    - (example 1)
    - (example 2)

17. What are some methods you use to engage Extension Master Gardener volunteers in your **Extension programs**? (mark all that apply)
    - I support recruiting new interns for upcoming training
    - I organize one or more intern training series
    - I involve Extension Master Gardener volunteers in planning Intern training
    - I involve Extension Master Gardener volunteers in planning public programs
    - I involve Extension Master Gardener volunteers in delivering public programs
    - I participate in some monthly Extension Master Gardener association meetings
    - I consistently participate in monthly Extension Master Gardener association meetings
    - I broadcast email requests to them like, "Volunteers needed for _____"
    - I write articles for one or more Extension Master Gardener newsletters
    - (open)

18. How do you engage Extension Master Gardener volunteers when **community project** requests come to the Extension office(s) in your SET? (mark all that apply)

- I do not involve Extension Master Gardener volunteers in these requests
- I give the request to the Extension Master Gardener association and they decide whether, or not to support the project
- I share the request with the Extension Master Gardener association and describe why we need volunteer support
- I decide if the request is appropriate or not, and assign Extension Master Gardener volunteers to assist
- I give the request to the County Extension Coordinators and they decide whether, or not to support the project
- The County Extension Coordinators in my SET manage all these requests because they want to be responsible
- (blank field)

19. What price do you think the average person will pay for the Extension Master Gardener training series?
    - No opinion
    - $150-$200
    - $201-$250
    - $251-$300
    - (open field)

20. How do you define Extension Master Gardeners – as an Extension program?
    - (open field)

21. "Success" can be defined in multiple ways. Do you feel the Extension Master Gardener program are successful in "your" counties?
    - Yes
    - No

22. Please expand on your previous answer (Q.21) with a brief statement. Describe your measure of a successful program – or suggest one strategy for improving the program if you feel it is not currently successful.
    - (open field)

23. Which of the following is/are your strongest area(s) of expertise? (mark all that apply)
    - Agronomic Crops
    - Alabama 4-H/Youth Development
    - Animal Science & Forages
    - Aquatic Resources
    - Commercial Horticulture
    - Community Workforce, Leadership & Economic Development
    - Consumer Sciences & Personal Financial Management
    - Economic & Community Development
    - Expanded Food & Nutrition Education Program (EFNEP)
    - Family & Child Development
    - Farm & Agribusiness Management

- Financial Resource Management & Workforce Development
- Food Safety & Quality
- Forestry, Wildlife & Natural Resources
- Home Grounds (home horticulture)
- Human Nutrition, Diet & Health
- Poultry Science
- Supplemental Nutrition Assistance Program - Education (SNAP-Ed)
- (blank)

24. What do you feel you need? What would help you feel better equipped for working with Extension Master Gardener volunteers?
    - (blank)

25. Please add other comments you feel important to a strategic assessment of this Extension program.
    - (open field)

Thank you very much for participating in this Alabama Extension Master Gardeners program survey. Your replies contribute to a quantitative assessment that will guide future programming and program management. I greatly appreciate your help with this effort.

Kerry Smith
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State Program Coordinator, Extension Master Gardeners
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Appendix 7

County Extension Coordinatior Survey

Hello Alabama Extension County Extension Coordinators,

First, thank you so much for your support of Alabama Extension's Home Grounds team and its programs.

This year has been an exercise in lessons learned, patience tested, many Plan-B's, and even Plan-Z. One effort, derailed by the challenges of Covid19, is a strategic assessment of Alabama's Extension Master Gardeners program. Our strategic assessment process started with a small advisory group, having representation from all levels across this program.

Why this survey? One recommendation, from our advisory group, was to collect insight from everyone involved with our program. As a result, we are surveying all Extension personnel who work with Master Gardeners (County Extension Office Administrators, County Extension Coordinators, County Extension Agents, and Regional Extension Agents) and the volunteers themselves to collect everyone's perspectives and experiences.

Your replies contribute to a quantitative assessment that will guide future programming and program management. I greatly appreciate your help with this effort. With that, we all know 2020 has been a unique year. Please answer all questions based on yours and your county's pre-Covid-19 behavior and/or activities with the Extension Master Gardeners program.

Has this survey been reviewed? This statewide survey of the Alabama Extension Master Gardeners program has been reviewed and approved by Auburn University's Office of Human Research (20-548 D, Smith).

Who is invited to participate? Everyone! You have been selected for this survey because you either have experience working with the Extension Master Gardeners program and its volunteers or you are in a county where the program is active.

How do you participate? The survey uses Qualtrics survey software. Due to screen size, it will be easier to respond to the questions using a tablet or desktop. It is available on all device types. To participate online, click on the arrow (below) to start the survey. It will be open for two months, starting 11/30/2020 and closing on 1/31/2021. Completing this online survey should take 10-15 minutes.

What if you do not want to participate? Involvement in the survey is voluntary, and you may choose not to participate or to stop at any time, without penalty or loss of benefits to which you are otherwise entitled.

Are your answers anonymous? We have taken every precaution (including removing identifying data) to insure you are anonymous. The results of the survey may be published, but no individual identifying information will appear. We will share a summary of the results with all participants.

Is there any way that being in this study could harm you? There are no known risks or discomforts associated with this research. If you have any questions about this project, please feel free to call me at 334-844-3036 or send an e-mail to smithkp@auburn.edu.

Questions or concerns about your rights as a research participant should be directed to Auburn University's Institutional Review Board; telephone (334-844-5966), email address irbadmin@auburn.edu. Keep this letter for your records.

Thank you for your consideration! Please encourage all Master Gardeners to participate.

Sincerely,

Kerry

Kerry Smith
Alabama Extension Home Grounds Team, Co-Leader, &
State Program Coordinator, Extension Master Gardeners
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0 ….. I agree (I wish to continue with the survey)
0 ….. I DO NOT agree (I do not wish to continue with the survey)

1. How many Extension Master Gardener volunteers are active in your county's program?
    - I do not know
    - less than 25
    - 26-50
    - 51-100
    - 101-150
    - 151-200
    - More than 200

2. What are some activities and programs that **Extension Master Gardener volunteers** are doing in your county? (mark all that apply)
    - Fill-in for or assist staff at the Extension office
    - Contribute to Extension programs (development or delivery)
    - Promote Extension programs and the office itself (PR)
    - County Fair or other civic events
    - Farm City, Water Festival, Earth Day, etc.
    - Support community organizations and projects
    - Answer the Master Gardener Helpline
    - Lunch & Learn or other regular programs for the public
    - 4-H or school programs
    - Beautification projects
    - Demonstration or community food garden
    - (open field)

3. Are there other volunteer groups who assist Extension programs from your office?
    - Yes
    - No

4. If you have **non-Extension Master Gardener volunteers** assisting your office or programs, what are some of their activities? (mark all that apply)
    - Fill-in for or assist staff at the Extension office
    - Contribute to Extension programs (development or delivery)
    - Promote Extension programs and the office itself (PR)
    - County Fair or other civic events
    - Farm City, Water Festival, Earth Day, etc.
    - Support community organizations and projects
    - Answer the Master Gardener Helpline
    - Lunch & Learn or other regular programs for the public
    - 4-H or school programs
    - Beautification projects
    - Demonstration or community food garden
    - (open field)

5. How many total years of experience do you have working with volunteers – any program, either with Extension or with other organizations?
    - Less than 1 year
    - 1-3 years
    - 4-6 years
    - 7-9 years
    - 10 or more years
    - (open field)

6. Do you currently work with Extension Master Gardener volunteers directly?
    - Yes
    - No
    - No, but I work with other, non-Extension Master Gardener, volunteers

7. How often do you currently engage Extension Master Gardener volunteers in your county's Extension programs?
    - I do not currently work with Extension Master Gardener volunteers
    - 1-2 times per year
    - 3-4 times per year
    - 1-2 times per month
    - 3-4 times per month
    - More than 4 times per month

8. **If you do not** engage Extension Master Gardener volunteers in your programs, **what is the primary reason**?
    - This question does not apply to me
    - I do not have time for this program
    - It does not fit my program priorities
    - I do not have experience working with volunteers or volunteer programs
    - I have not been successful in previous attempts to work with volunteers
    - I do not have a background in horticulture or related fields of study
    - The Home Grounds-Regional Extension Agent currently manages the program for me
    - (open field)

9. Is the County Extension Coordinator involved with recruiting, training, and/or managing the Extension Master Gardener program in your county?
    - Yes
    - No

10. Is there a County Extension Agent involved with recruiting, training, and/or managing the Extension Master Gardener program in your county?
    - Yes
    - No

11. Is there a Home Grounds-Regional Extension Agent involved with recruiting, training, and/or managing the Extension Master Gardener program in your county?
    - Yes
    - No

12. What are the current management roles for the Extension Master Gardener program in your county?
    - I do not know
    - The County Extension Coordinator leads all activities related to the Extension Master Gardener program
    - The County Extension Agent leads all activities related to the Extension Master Gardener program
    - The County Extension Coordinator and County Extension Agent share leadership related to the Extension Master Gardener program
    - The County Extension Coordinator or County Extension Agent share leadership related to the Extension Master Gardener program with the Regional Extension Agent
    - The Regional Extension Agent manages all activities related to the Extension Master Gardener program
    - (open field)

13. How many total hours do you invest annually **in recruiting interns** for the Extension Master Gardener program in your county?
    - This question does not apply to me
    - Less than 80 hours per year (less than 10 total days/year)
    - About 80 hours per year (about 10 total days/year)
    - About 120 hours per year (about 15 total days/year)
    - About 160 hours per year (about 20 total days/year)
    - More than 160 hours per year (more than 20 days/year)
    - (Open field)

14. How many total hours do you invest annually **in training** the Extension Master Gardener Volunteers in your county program?
    - This question does not apply to me
    - Less than 80 hours per year (less than 10 total days/year)
    - About 80 hours per year (about 10 total days/year)
    - About 120 hours per year (about 15 total days/year)
    - About 160 hours per year (about 20 total days/year)
    - More than 160 hours per year (more than 20 days/year)
    - (Open field)

15. How many total hours do you invest annually **in managing** the Extension Master Gardener Volunteers in your county program?
    - This question does not apply to me
    - Less than 80 hours per year (less than 10 total days/year)
    - About 80 hours per year (about 10 total days/year)
    - About 120 hours per year (about 15 total days/year)
    - About 160 hours per year (about 20 total days/year)

- More than 160 hours per year (more than 20 days/year)
- (Open field)

16. **If you are not currently** the Extension personnel recruiting, training, and/or managing the Extension Master Gardener program in your county, rate your level of agreement or disagreement with assuming this responsibility?
    - Strongly disagree
    - Disagree
    - Neither agree nor disagree
    - Agree
    - Strongly agree

17. If you anticipate assuming new responsibilities with this program, how much time can you invest in your County's Extension Master Gardener Volunteer program?
    - I do not plan to work with this program
    - 1-2 times per year
    - 3-4 times per year
    - 1-2 times per month
    - 3-4 times per month
    - More than 4 times per month
    - (open)

18. Which of the following is/are your strongest area(s) of expertise? (mark all that apply)
    - Agronomic Crops
    - Alabama 4-H/Youth Development
    - Animal Science & Forages
    - Aquatic Resources
    - Commercial Horticulture
    - Community Workforce, Leadership & Economic Development
    - Consumer Sciences & Personal Financial Management
    - Economic & Community Development
    - Expanded Food & Nutrition Education Program (EFNEP)
    - Family & Child Development
    - Farm & Agribusiness Management
    - Financial Resource Management & Workforce Development
    - Food Safety & Quality
    - Forestry, Wildlife & Natural Resources
    - Home Grounds (home horticulture)
    - Human Nutrition, Diet & Health
    - Poultry Science
    - Supplemental Nutrition Assistance Program - Education (SNAP-Ed)
    - (open field)

19. What do you feel you need? Whether you currently assume some level of responsibility for the Extension Master Gardener volunteer program in your county, or intend to assume more responsibility in the future, what would help you feel better equipped for working with volunteers?
    - (open field)

20. How do you engage Extension Master Gardener volunteers in Extension programs? (mark all that apply)
    - This question does not apply to me
    - I support recruiting new interns for upcoming training
    - I organize the intern training series in my county
    - I participate in one or more intern training classes
    - I participate in some monthly Extension Master Gardener association meetings
    - I consistently participate in monthly Extension Master Gardener association meetings
    - I involve Extension Master Gardener volunteers in planning Intern training
    - I involve Extension Master Gardener volunteers in planning public programs
    - I involve Extension Master Gardener volunteers in delivering public programs
    - I broadcast email requests to them like, "Volunteers needed for _____"
    - I write articles for one or more Extension Master Gardener newsletters
    - (open field)

21. How do you engage Extension Master Gardener volunteers when community project requests come to your Extension office? (mark all that apply)
    - This question does not apply to me
    - I do not involve Extension Master Gardener volunteers in these requests
    - I give the request to the Extension Master Gardener association and they decide whether, or not, to support the project
    - I share the request with the Extension Master Gardener association and describe why we need volunteer support
    - I decide if the request is appropriate or not, and assign Extension Master Gardener volunteers to assist
    - I give the request to the Home Grounds-Regional Extension Agent and they decide whether, or not to support the project
    - I visit with the Home Grounds-Regional Extension Agent and ask them to assign volunteers
    - (open field)

22. What price do you think people in your county will pay for the Extension Master Gardener training series?
    - No opinion
    - $150-$200
    - $201-$250
    - $251-$300
    - (open field)

23. How do you define Extension Master Gardeners – as an Extension program?
    - No opinion
    - (open field)

24. "Success" can be defined in multiple ways. Do you feel the Extension Master Gardener program is successful in your county?
    - No opinion
    - Yes

- No

25. Please expand on your previous answer (Q.23) with a brief statement. Describe your measure of a successful program – or suggest one strategy for improving the local program if you feel it is not currently successful.
    - (open field)

26. Please add other comments you feel important to a strategic assessment of the Extension Master Gardener program.
    - (open field)

Thank you very much for participating in this Alabama Extension Master Gardeners program survey. Your replies contribute to a quantitative assessment that will guide future programming and program management. I greatly appreciate your help with this effort.

Kerry Smith
Alabama Extension Home Grounds Team, Co-Leader, &
State Program Coordinator, Extension Master Gardeners
Auburn University, Department of Horticulture
101 Funchess Hall
Auburn, AL 36849
Email: smithkp@auburn.edu
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Appendix 8

Extension Office Administrator Survey

Hello Alabama Extension, County Extension Office Administrators,

First, thank you so much for your support of Alabama Extension's Home Grounds team and its programs.

This year has been an exercise in lessons learned, patience tested, many Plan-B's, and even Plan-Z. One effort, derailed by the challenges of Covid19, is a strategic assessment of Alabama's Extension Master Gardeners program. Our strategic assessment process started with a small advisory group, having representation from all levels across this program.

Why this survey? One recommendation, from our advisory group, was to collect insight from everyone involved with our program. As a result, we are surveying all Extension personnel who work with Master Gardeners (County Extension Office Administrators, County Extension Coordinators, County Extension Agents, and Regional Extension Agents) and the volunteers themselves to collect everyone's perspectives and experiences.

Your replies contribute to a quantitative assessment that will guide future programming and program management. I greatly appreciate your help with this effort. With that, we all know 2020 has been a unique year. Please answer all questions based on yours and your county's pre-Covid-19 behavior and/or activities with the Extension Master Gardeners program.

Has this survey been reviewed? This statewide survey of the Alabama Extension Master Gardeners program has been reviewed and approved by Auburn University's Office of Human Research (20-548 D, Smith).

Who is invited to participate? Everyone! You have been selected for this survey because you either have experience working with the Extension Master Gardeners program and its volunteers or you are in a county where the program is active.

How do you participate? The survey uses Qualtrics survey software. Due to screen size, it will be easier to respond to the questions using a tablet or desktop. It is available on all device types. To participate online, click on the arrow (below) to start the survey. It will be open for two months, starting 11/30/2020 and closing on 1/31/2021. Completing this online survey should take 10-15 minutes.

What if you do not want to participate? Involvement in the survey is voluntary, and you may choose not to participate or to stop at any time, without penalty or loss of benefits to which you are otherwise entitled.

Are your answers anonymous? We have taken every precaution (including removing identifying data) to insure you are anonymous. The results of the survey may be published, but no individual identifying information will appear. We will share a summary of the results with all participants.

Is there any way that being in this study could harm you? There are no known risks or discomforts associated with this research. If you have any questions about this project, please feel free to call me at 334-844-3036 or send an e-mail to smithkp@auburn.edu.

Questions or concerns about your rights as a research participant should be directed to Auburn University's Institutional Review Board; telephone (334-844-5966), email address irbadmin@auburn.edu. Keep this letter for your records.

Thank you for your consideration! Please encourage all Master Gardeners to participate.

Sincerely,

Kerry

Kerry Smith
Alabama Extension Home Grounds Team, Co-Leader, &
State Program Coordinator, Extension Master Gardeners
Auburn University, Department of Horticulture101 Funchess Hall
Auburn, AL 36849
Email: smithkp@auburn.edu
Tel. 334-844-3036

0 ….. I agree (I wish to continue with the survey)
0 ….. I DO NOT agree (I do not wish to continue with the survey)

1. How many Extension Master Gardener volunteers are active in your county's program?
    - This question does not apply to my office assignment or duties
    - less than 25
    - 26-50
    - 51-100
    - 101-150
    - 151-200
    - More than 200

2. What are some activities and programs that **Extension Master Gardener volunteers** are doing in your county? (Mark all that apply)
    - This question does not apply to my office assignment or duties
    - This question does not apply to my office assignment or duties
    - Fill-in for or assist staff at the Extension office
    - Contribute to Extension programs (development or delivery)
    - Promote Extension programs and the office itself (PR)
    - County Fair or other civic events
    - Farm City, Water Festival, Earth Day, etc.
    - Support community organizations and projects
    - Answer the Master Gardener Helpline
    - Lunch & Learn or other regular programs for the public
    - 4-H or school programs
    - Beautification projects
    - Demonstration or community food garden
    - (open field)

3. Are there other volunteer groups who support Extension programs from your office?
    - This question does not apply to my office assignment or duties
    - Yes
    - No

4. If you have **non-Extension Master Gardener volunteers** assisting your office or programs, what are some of their activities? (mark all that apply)
    - This question does not apply to my office assignment or duties
    - Fill-in for or assist staff at the Extension office
    - Contribute to Extension programs (development or delivery)
    - Promote Extension programs and the office itself (PR)
    - County Fair or other civic events
    - Farm City, Water Festival, Earth Day, etc.
    - Support community organizations and projects

- Answer the Master Gardener Helpline
- Lunch & Learn or other regular programs for the public
- 4-H or school programs
- Beautification projects
- Demonstration or community food garden
- (open field)

5. How many total years of experience do you have working with volunteers – any program, either with Extension or with other organizations?
    - This question does not apply to my office assignment or duties
    - Less than 1 year
    - 1-3 years
    - 4-6 years
    - 7-9 years
    - 10 or more years
    - (open field)

6. Do you currently work with Extension Master Gardener volunteers directly?
    - Yes
    - No
    - No, but I work with other, non- Extension Master Gardener volunteers

7. How often do you currently engage Extension Master Gardener volunteers in county office operations?
    - This question does not apply to my office assignment or duties
    - 1-2 times per year
    - 3-4 times per year
    - 1-2 times per month
    - 3-4 times per month
    - More than 4 times per month

8. What is your current role in supporting the Extension Master Gardener program in your county? (mark all that apply)
    - This question does not apply to my office assignment or duties
    - I submit the advertisements for the training series
    - I receive and organize applicant registrations
    - I assist the County Extension Coordinator with any requests related to the Extension Master Gardener program in my county
    - I assist the County Extension Agent with any requests related to the Extension Master Gardener program in my county
    - I assist the Regional Extension Agent with any requests related to the Extension Master Gardener program in my county
    - (open field)

9. How many total hours do you invest annually in your county's Extension Master Gardener program?
    - This question does not apply to my office assignment or duties

- Less than 80 hours per year (less than 10 total days/year)
- About 80 hours per year (about 10 total days/year)
- About 120 hours per year (about 15 total days/year)
- About 160 hours per year (about 20 total days/year)
- More than 160 hours per year (more than 20 days/year)
- (Open field)

10. What price do you think people in your county will pay for the Extension Master Gardener training series?
    - No opinion
    - $150-$200
    - $200-$250
    - $250-$300
    - (open field)

11. How do you define Extension Master Gardeners – as an Extension program?
    - No opinion
    - (open field)

12. "Success" can be defined in multiple ways. Do you feel the Extension Master Gardener program is successful in your county?
    - No opinion
    - Yes
    - No

13. Please expand on your previous answer (Q.12) with a brief statement. Describe your measure of a successful program – or suggest one strategy for improving the local program if you feel it is not currently successful.
    - (open field)

14. Please add other comments you feel important to a strategic assessment of the Extension Master Gardener program.
    - (open field)

Thank you very much for participating in this Alabama Extension Master Gardener program survey. Your replies contribute to a quantitative assessment that will guide future programming and program management. I greatly appreciate your help with this effort.

Kerry Smith
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