PERCEPTIONS OF AGRICULTURAL EXTENSION AGENTS' INSERVICE TRAINING NEEDS WITHIN THE NATIONAL AGENCY FOR RURAL DEVELOPMENT IN THE REPUBLIC OF MOLDOVA

A Thesis

by

MATTHEW K. BLACK

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Chair of Committee,	James R. Lindner
Co-Chair of Committee,	Manuel Piña Jr.
Committee Members	Gina M. Reinhardt
Head of Department,	John Elliot

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ABSTRACT

The world today is at an accelerated state of change. No longer do we receive a sufficient amount of education in our youth to allow us to be successful as adults. This rapid state of change seen in the world today drives a constant need for lifelong learning. It is not only important for organizations to provide inservice training to their employees, but also to provide inservice training that is effective. Agricultural extension agencies in developing nations are no exception. Extension staff must be technically proficient in a variety of different areas and must have the opportunity to increase their competency while on the job. The National Agency for Rural Development (ACSA) is a non-governmental, non-profit and non-political extension agency in the Republic of Moldova which provides a variety of agricultural advisory services to the communities it serves. The purpose of this study was to assess inservice training needs of agricultural extension agents employed by ACSA.

Two hundred and ninety one of the 425 ACSA extension agents were randomly selected to participate in this study. Of the 291 selected, 223 were able to be contacted. Of these, 115 responded (51.6%). The Borich Model of Needs Assessment was employed to determine the specific inservice training needs of extension agents employed by ACSA. Forty one competency statements were developed and categorized into three constructs: organizational knowledge, program development and implementation, and personal development. Data were collected through electronic surveying methodology. Data analysis included the calculation of mean weighted

discrepancy scores, means, standard deviations, and a t-test to address non-response error.

The study identified the greatest need for training in ACSA as using professional networks to enhance programs. It also identified opportunity to increase the visibility of the organization and expand ACSA's programming into new areas.

DEDICATION

This work is dedicated first and foremost to my parents, Ray and Terry, my brother, Trevor, and my grandparents, Melvin, Ruth, Rea, and Keith. There hasn't been a second in my life in which I had to wonder whether someone believed in and supported me.

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CHAPTER I

INTRODUCTION

The Eastern Europe and Central Asia region consists of 17% of the world's arable land, however it only produces 11% of the world's crops (Swinnen & Van-Herck, 2013). In The Republic of Moldova, located on the western edge of this region, the agriculture and food industry is the most important sector of its economy. Agricultural operations account for almost 42% of GDP and employ one third of the population. Seventy-five percent of Moldova's land mass is made up of agricultural land with 71% of its production coming from small holder farms (FAO, 2012).

It is important that agricultural producers of Moldova receive access to new technology, new skills, and are connected to the global body of agricultural knowledge because one third of Moldova's population is employed in the agricultural sector. One opportunity to address these areas is through a strong agricultural extension system.

Moldova enjoyed agricultural extension services provided by Moscow during its time within the Soviet Union, however, as the Soviet Union was dissolved, NGOs moved into many former Soviet States in order to fill the holes left by the now defunct agricultural extension systems (Shtaltovna, 2013). One of the extension NGOs operating in Moldova today is Agenția Națională de Dezvoltare Rurală (ACSA) or the National Agency for Rural Development.

ACSA is a non-governmental, non-profit, and non-political organization which works to promote sustainable development of the rural communities in Moldova through a professional network of agricultural extension agents. Agents employed by ACSA provide technical information, consultation and training services to agricultural producers and rural entrepreneurs. The organization consists of three main focus areas aimed at positively impacting the rural farmers and entrepreneurs of Moldova: rural extension services, land re-parceling, and drought adaptation advisory services. ACSA consists of 35 regional advisory centers, 350 local advisory centers and employs about 425 agents. Through the work of ACSA's employees, the organization has been able to impact hundreds of thousands of farmers through thousands of seminars and training programs held annually across the country. In the past, these seminars and training programs have been developed through client suggestion and have most often consisted of programs focusing on modern growing technologies, obtaining farm inputs, and economics, and land legislation (ACSA, 2013).

In order for ACSA to continue its work providing extension services to the farmers of Moldova, its agents must receive meaningful inservice training. Hale (1993) suggests that technically proficient staff of extension agents must have the ability to adjust to the constantly changing needs of the farmers they serve. Moreover, it is imperative that an atmosphere in support for continuing professional development is cultivated.

The remaining portion of this chapter will include eight brief sections including, (1) introduction of the conceptual framework; (2) a statement of the problem; (3)

indication of why this study is important; (4) outline of purpose and objectives of this study; (5) provision of context for the study; (6) presentation of assumptions; (7) limitations; and finally (8) definition terms used within this work.

Conceptual Framework

Merriam, Caffarella, and Baumgartner (2007) suggest that in comparison to the rest of history, the world today is in a state of accelerated change. Because of this state, the need for adults to continually learn is vital. Education which we receive in our youth no longer prepares us to be successful in our adult lives, as it once did. The authors conclude that there are three characteristics of the world which drive the need for continued education as an adult. These characteristics are: changing demographics, globalization, and new technology. Each one of these characteristics act upon one another. Through this reaction, the rate of change in the world has accelerated and in turn created a stronger need for lifelong learning in order to keep up with the changing world.

Due to accelerated change in the world, many of today's organizations have been forced to provide inservice training to their employees in order to keep up with changes such as: rapidly generating innovation, integration of new technologies, changing marketplaces, and organizational restructuring (Merriam, Caffarella, & Baumgartner, 2007). Agricultural extension organizations, whether they be in the United States or other parts of the world, are no exception.

Edwards and Briers (1999) suggest that there is a consensus among all educators that sparse resources drive a need for effective needs assessments in order to identify and

prioritize the most valuable areas for inservice training. Borich (1980) developed a model for conducting follow-up studies that attempted to address the need for prioritized inservice training. Through his work he saw the need to move away from extensive and resource heavy surveys that may not provide usable information. Instead he saw the need to move toward a model through which "…respondents provide data that can be weighted and ranked in order of priority so that responses are linked to a practical decision framework for program improvement (pp. 1)." His model, known today as the Borich Model of Needs Assessment, accomplishes just that. Instead of using the model as a means for follow-up studies, Barrick, Ladewig, and Hedges (1983) assessed the model for merit in identifying needs for inservice training before a training or a workshop took place. It was concluded by the researchers that the Borich model held value in assessing inservice training needs of respondents, with the exception that a combination of two or more rankings are considered. From the time Borich presented his model, it has been used numerous times in assessing inservice training needs of learners. In the literature review for this study a variety of studies employing the use of the Borich model will be presented.

Statement of Contribution

As Moldova inches towards signing the European Union's Association Agreement there will be increasing pressure on Moldovan farmers to adapt their farming practices to match the reforms required for Moldovan goods to enter the European market. Extension agents throughout the country will likely be leaned on in order to assist farmers in making these required changes. The country's agricultural sector will

struggle to develop if extension agents are not prepared to assist Moldovan farmers in adapting to these changes.

It takes a very competent staff to ensure the success of agricultural extension networks in today's rapidly changing world (Cooper and Graham, 2001). There has been no published work to identify inservice training needs of agricultural extension agents in Moldova. Although there are many international organizations operating in conjunction with ACSA, such as the United States Agency for International Development (USAID), The World Bank, The Swedish International Development Agency (SIDA), and the Soros Foundation, there has been no attempt in prioritizing needs of extension agents. This study will contribute to the potential impact which ACSA can make in rural communities and assure that its agents are prepared to assist Moldovan farmers move into the new landscape of Moldovan agriculture.

Importance of the Study

Extension agents are the only link to the greater body of agricultural knowledge in many countries around the world. Extension agents are sought for information and advice in not only farming information and technology, but also community organization, finance, marketing, and other issues which affect the quality of life in rural communities (FAO and World Bank, 2000).

Ghimire and Martin (2011) suggest that the success seen by extension agencies is based upon an educator's ability to "…identify and prioritize issues, develop and implement educational programs, evaluate outcome, and utilize evaluation results to redirect future planning" (pp. 6). In order to address these abilities, extension agents

must continually strive to develop professional competencies which will allow them to be effective in making meaningful impacts in their communities.

In order for extension agents employed by ACSA to be effective in making meaningful impacts in their communities they must be competent in their ability to deliver the services provided by ACSA. There must be an effort to identify the competencies of most importance before meaningful inservice training addressing these competencies is conducted. This study highlights many agricultural extension competencies that agents have identified as having a low ability to perform, but are perceived as important for the work that they do. For this study, a ranked list of competency statements identified by ACSA management, experts in the field of agricultural extension and education, literature in the field, and the researcher, was created. By creating a ranked list of competency statements, ACSA may provide more beneficial inservice training to its extension agents in the field.

Purpose and Objectives

The purpose of this study was to assess inservice training needs of agricultural extension agents employed by ACSA. The specific objectives of this study were:

1. Identify the agents' self-perceived ability to complete each competency of 41 developed competency statements.
2. Identify the agents' self-perceived level of importance of the 41 developed competency statements.
3. Rank the competency statements in accordance with a mean weighted discrepancy score (MWDS).

4. Rank the competency statements based on three constructs (Organizational Knowledge, Program Development and Implementation, and Personal Development).
5. Rank the competency statements based on demographics of ACSA agents (Age, Gender, and Level of Education).

Context for the Study

From 2010 to 2012 the researcher lived in Leova, Moldova and worked with ACSA as a United States Peace Corps Volunteer in their regional office located in Leova. Although the central office of ACSA is located in the capital of Chișinău, the ACSA network has offices which are located throughout Moldova's 32 districts and three municipalities. Permission was granted by Dr. Constantin Ojog, the Executive Director of ACSA, to perform this study.

Assumptions

1. The contact information for extension agents provided by ACSA represented agents currently employed by the organization, allowing the researcher to assess perceptions of extension agents employed by this organization.
2. The respondents in this study responded honestly and to the best of their abilities, therefore data collected in this study represents the true opinions of extension agents employed by ACSA.

Limitations

This study was limited to randomly selected extension agents employed by ACSA which possessed a functioning email address at the time of data collection. Data collected was self-reported and subject to no further verification of accuracy and objectivity.

Definition of Terms

Extension – Refers to any activity that "…focuses on the delivery of information inputs to farmers (Anderson and Feder, 2004; pp. 42)."

Extension Agent – Refers to any person employed by an organization working to deliver information inputs to farmers. For the purposes of this study the term "Extension Agent" will act as a catch all for different variations of the term which may be used in Moldova, such as: advisory agent and agricultural consultant.

Inservice training needs – The further educational training or professional development that one receives once one has entered a profession.

Competencies – "The application of knowledge, technical skills, and personal characteristics leading to outstanding performance" (Stone, 1997, pp. 1).

Mean Weighted Discrepancy Score (MWDS) – Refers to a calculated score measuring the gaps between two sets of discrepancy scores which describes the overall rankings of each discrepancy score (Layfield and Dobbins, 2000).

Performance Competence – "Ability accurately to execute the behavior in a real or simulated environment in the presence of an observer (Borich, 1980; pp. 40)."

Performance discrepancy – The MWDS that measures the gap between perceived importance of a competency statement and ability to perform the competency (Borich, 1980).

CHAPTER II

REVIEW OF LITERATURE

In this chapter the review of literature will be divided into six sections. Section one will provide an overview of international agriculture extension and its value to developing or transitioning nations. Section two provides a brief history and illustration of agricultural extension during the Soviet Union. Next, section three discusses the state of extension in the Republic of Moldova and highlights the extension agencies working in the country today. Section four highlights the value of competency modeling. Section five introduces a variety of models for needs assessment used in the field of international agriculture and extension education. Finally, section six provides a summary of the Borich Model of Needs Assessment and how it has been used domestically and internationally.

International Extension and Advisory

Feder, Willett, and Zijp (2001) state that extension can be defined by a system and a set of functions acted on by that system in order to bring about voluntary change in a population of rural people. They suggest that these functions are: "transferring technology in multiple directions for sustainable agricultural production, transformation, and marketing; transferring management to mobilize and organize farming, rural groups, and communities; and transferring capacity to educate, build human resources, and enhance local capacity…" (pp. 3). The system he suggests is any public or private

institution that has the capacity to act upon these functions in order to bring about positive voluntary change in rural populations.

Throughout much of the literature concerning agricultural extension a debate about the merits of the current and past systems of extension is present (Alex, Zijp & Byerlee, 2002; Anderson & Feder, 2004; Feder, Willett & Zijp, 2001). Anderson and Feder (2004) suggest that the positive economic impacts of rural extension services that have been highlighted by many researchers are hit and miss. Some have been highly effective, making great positive impact in rural communities, while others have proven to be inefficient and a drain on valuable resources.

Alex, Zijp, and Byerlee (2002) highlight the fact that extension services throughout rural areas of the world are under extreme pressure by reports of poor performance, inefficiency, lacking objectives and strong incentives to provide valuable service, inability to reach a wide coverage of rural citizens, and lacking in relevance. They warn that extension cannot fail to recognize the major pressures weighing on its current image. Outlining the various pressures acting on the current model of extension in the world today, they suggest that there must be (a) a defined role for the public sector, (b) work to strengthen demand for extension services, (c) improved quality of extension services, (d) and a concerted effort to make future systems of extension sustainable.

Moving back to Feder et al. (2001), systems and functions of extension, they suggest that there are various problems within the functions which are: “scale and complexity; dependence of extension on the wider policy environment and other agency

function; inability to trace cause and effect; commitment and political support; accountability; liability to public service function beyond agricultural knowledge and information transfer; operating resources and fiscal sustainability and interaction with knowledge generation" (pp. 7).

Regardless of the debate on merits of the current extension practices, Feder et al. (2001), Anderson and Feder (2004), and Alex et al. (2002) do not deny that it is important for rural populations to have access to information. With the correct practices in place, extension work can enhance human capital in many of the world's poorest nations and increase agricultural productivity through access to expert advice and new technology (Anderson, 2004). Access to new markets and technology through extension services has the capacity to develop many new opportunities for poor rural farmers all over the globe. As globalization spreads and more people are connected, it will become even more important for rural citizens to become connected with cutting edge technology and have access to the same information as other farmers in order to make better decisions in their work (Alex et al., 2002).

The positive impacts of extension may be hit and miss, as Anderson and Feder (2004) suggest, however, there is a variety of literature highlighting measureable positive effects of extension work throughout the world. Dercon, Gilligan, Hoddinott, and Woldehanna (2008), found that the combination of access to roads and agricultural extension agents significantly reduced headcount poverty in their work studying the impact of roads and agriculture extension in Ethiopian villages. Their work suggested

that one visit from extension agents reduced poverty in 15 Ethiopian villages by 9.8% and increased consumption by 7.1%.

Cerdán-Infantes, Maffioli, and Ubfal (2008), studied the effects of an extension program on grape producers in Argentina. They compared non-participants to participants of farmers generating low crop yields, and found that farmers who participated in the extension program increased their yields by 40%. Participants generating high yields before the program increased their yields to a lesser extent, but saw the average quality of grape greatly increased.

Evenson (2001), to the knowledge of the researcher, conducted the most comprehensive assessment of the impacts of agricultural research and extension in the world. In his assessment of over 30 different studies looking at impacts of national agricultural research centers and extension programs, he concluded that "…the great majority of the initial rates of return estimates indicated high social rate of returns to investments made" (pp. 41). However, he is careful to point out that none of the programs studied were of the same design efficiency, had the same scientist skills or management skill, and that all of these programs could have been improved because many of the extension programs were not managed well and greatly constrained by the access to resources.

It is clear through the literature presented that there is considerable disagreement in the proper role that extension should play in international agricultural development, the form that it should take, and the impacts that it has made in the past. It is also clear that access to relevant information, new technology, markets, and credit all have the

capacity to reduce poverty and increase agricultural production in the poor rural areas of the world. All of this can be accomplished through a well-funded, well-designed, well-managed agricultural research and extension system.

Agricultural Extension in the Soviet Union

Because much of the Republic of Moldova's history is intertwined with the history of the Soviet Union it is appropriate to present a brief history and illustration of what the agricultural research and extension system looked like during that time. As is the case with many things Soviet, the network linking agricultural research to the farmer is enormous. Shortly after the Bolshevik revolution the All-Union Academy of Agricultural Sciences, referred to as Vaskhnil, was established which laid the foundation for the Soviet Union's extension network. Branches of Vaskhnil were set up in a two-level structure with research institutions on one level and research stations and farms at the second. Towards the end of the Soviet Union, regional branches of Vaskhnil were present in every region of the Union (Morgounov, 2001). According to Stedman (1930), sixty years before the fall of the Soviet Union there were 3,334 extension agents assisted by 2,264 specialists and 1,898 regional experts.

Within the second level of Vaskhnil, trainings were offered to farmers through long courses and short courses. Long courses (lasting 6 months to a year) focused on farmers which had received lower levels of agricultural training. This was in order to increase efficiency in farming methods and disseminate knowledge about different branches of farming in the rural areas of the Soviet Union. On the other hand, short

courses (lasting one week) were offered to farmers on a more specific level, such as raising poultry or bee-keeping (Stedman, 1930).

Extension agents in the Soviet Union were referred to as agronomes and were charged with the supervision of all agricultural instruction in their region as well as the oversight of a regional experiment station. As many as 12 local experiment stations (or demonstration farms) were present in each region. Local experiment stations were managed by one of the agronomes' assistants or experts residing in the local village in which the station was located. Through these stations the local peasant farmers received instruction in a variety of farming practices according to the local needs of farmers. Apart from practical instruction in better farming practices provided to the local farmers, agronome assistants spent much of their times in local schools giving instruction to young peasant farmers (Stedman, 1930).

The Soviet Union's extension network had the capacity to disseminate agricultural research to local farmers throughout the country. However, top-down instruction coming from the Communist Party led to an incredibly politicized system of knowledge dissemination. The Vaskhnil was not an independent entity and reported directly to the Ministry of Agriculture, led by the Communist Party. Although the scientific community was often times consulted on topics of agricultural policy, the priorities were set by the Communist-controlled Ministry of Agriculture (Morgounov, 2001).

Agricultural science and extension in the Soviet Union were average in comparison to the rest of the developed world. The country had an excellent research

network and system of communication. It boasted the Central Scientific Agricultural Library and Institute of Information which contained all of the world's most prestigious agricultural journals. It focused on the youth, giving opportunities to conduct research in foreign countries, contribute to a youth-run publication, and received financial rewards for individual achievements. On the other hand, the system was highly politicized. The system suffered from low levels of technological adoption, was strictly regulated, bureaucratically bloated, had corrupt systems of evaluation, and a lopsided ratio of scientists to research technicians. Many of these problems still persist today (Morgounov, 2001).

Present-day Agricultural Extension in Moldova

After the fall of the Soviet Union in 1991, the countries which were under Soviet control now had to cope with massive losses in funding for agricultural systems. Although the structure of these systems remained rather similar, some institutions were forced to cut staff by up to 70% by 1997. This left the agriculture research and extension systems of the former Soviet Union without the ability to conduct new research in the field and made it nearly impossible for extension agents to introduce new products and practices to rural farmers. As these realities began to set in, many former Soviet satellites began to develop new frameworks focusing on research priorities, research planning, funding sources, management, and new ways of implementing results. Today, countries which had relied on Soviet funding in order to conduct agricultural research now rely on external aid agencies such as those from the United States, European Union, and the World Bank (Duczmal, 2001).

In the Republic of Moldova, extension services are reasonably well-developed and are supported by state institutions, private companies, foreign funded assistant projects and NGOs (The World Bank, 2007). There are three organizations (to the researcher's knowledge) that encompass the agricultural extension network in Moldova: The National Federation of Agricultural Producers from Moldova (AGROinform), The National Agency for Rural Development (ACSA), and NGO BIOS.

AGROinform is a non-governmental, non-political organization which aims to provide agricultural information in technical issues; informal consultation in land management and farm management; and access to credit. The organization works in a decentralized manner in which 15 regional NGOs operate independently reaching farmers and their own targeted needs. Although these NGOs operate independently, they maintain permanent dialog and working relations with 70 staff members employed by the central entity of AGROinform. Most recent numbers suggest the organization has united over 4500 members of AGROinform consisting of rural farmers and entrepreneurs (AGROinform, 2013).

NGO BIOS is a non-profit group which works in a wide array of capacities in order to promote sustainable agriculture, environmental protection, and rural community development throughout Moldova. The organization's main areas of focus are research and development, sustainable development activities, education, and awareness-building. Through their focus on training and education, the organization provides conferences and training courses, develops training materials (consisting of 60 publications, two films, and four audiocassettes in the areas of sustainable agriculture), environmental

protection, and community development. The organization consists of four permanent employees who enlist the help of contractors in order to accomplish activities identified by the organizational leadership (BIOS, 2013).

As mentioned in the introduction to this work, Agentia Nationala de Dezvoltare Rurala (ACSA) is a non-governmental, non-profit, and non-political organization which works to promote sustainable development of the rural communities in Moldova through a professional network of agricultural extension agents. Agents employed by ACSA provide technical information, consultation and training services for agricultural producers and rural entrepreneurs. The organization consists of three main focus areas aimed at positively impacting the rural farmers and entrepreneurs of Moldova: Rural extension series, land re-parceling, and drought adaptation advisory services. ACSA consists of 35 regional advisory centers, 350 local advisory centers and employs about 425 agents. Through the work of ACSA's employees, the organization has been able to impact hundreds of thousands of farmers through thousands of seminars and training programs held annually around the country. In the past, these seminars and training programs have been developed through client suggestion and have most often consisted of programs focusing on modern growing technologies, obtaining farm inputs, and economics and land legislation (ACSA, 2013).

Competency

In 1954 John Flanagan developed a methodology to collect observations of human behavior that have a critical significance in pre-determined criteria, which he called the critical incident technique and would later lead the way for research in human

competencies. The term competency was first used by Robert White (1959) in which he referred to a competency as "an organism's capacity to interact effectively with its environment (pp. 1)." He suggested that the ability to become competent in a task comes from interacting with the environment during lengthy attempts at learning the task. Today, as defined by Stone (1997), competency is, "the application of knowledge, technical skills and personal characteristics leading to outstanding performance (pp. 1)."

McLelland (1973) made a strong case in his work, *Testing for Competence Rather than for 'intelligence',* that assessing a person's competency in performing a task is a much better indicator of success in that task than simply testing a person's general intelligence. Organizations have always placed a high level of importance on their employees' ability to perform successfully in their work (Scheer, Cochran, Harder, & Place, 2001). One way of ensuring that an organization's employees are able to perform their job successfully, is by designing a professional development program based on a competency model (Stone, 1997). Competency modeling is a valuable tool in building the capacity of employees that also work to assure an organization's work continues to be relevant in its market. Moreover, competency modeling allows organizations to identify strengths and weaknesses in its employees which allows them to deliver more effective professional development training (Scheer et al., 2001).

Liles and Mustain (2004) suggest that in the world of agricultural extension, competency modeling has the capacity to ensure that educators continue to be technically competent in a variety of agricultural areas, as well as ensuring that they are proficient educators. They state that by developing a set of organizational competencies

geared towards the strategic goals of the extension organization, agents build personal capacity to successfully perform their jobs as well as develop the capacity of the organization as a whole in its ability to deliver meaningful services to its clients.

Competencies, whether defined in an organization or an academic field have allowed researchers to assess variables such as a person's perceptions, training needs, strengths, and weaknesses. In the field of international agriculture and extension education there is an abundance of literature which focuses on all of the variables listed above and more. One of the most valuable ways to examine competency is through the use of a needs assessment. Needs assessments take many forms and will be examined in the next section.

Models of Needs Assessment

Harder, Lamm, and Strong (2009) cited Boyle's definition of a need as "…the gaps between what exists and what is desired (pp. 11)." These needs motivate people to change their behaviors in order to close the gaps between what exists and what is desired. One of the tasks for extension educators (or those training extension educators) is to assess what exists and what is desired. One tool which allows educators to understand what a client may need is a needs assessment. Kaufman, Rojas, and Mayer (1993) suggest that a needs assessment is a method which allows us to identify the gaps between what exists and what is desired. Needs assessments allow researchers to rank the identified gaps into priority order which ultimately allows trainers to focus on the most important needs that should be addressed. In order for researchers to conduct needs assessments they must be able to collect information that will help identify needs.

Caravella (2006) identified a variety of methods which educators employ to collect data for a needs assessment, such as survey questionnaires, focus groups, or structured interviews. Witkin (1994) suggests a method for distributing a questionnaire followed by structured interviews is the most popular form of a needs assessment.

Needs assessments can be designed in a variety of different ways by employing the use of the tools outlined by Caravella above. However, there are also some tried and true models for needs assessments that lend themselves to a more stringent set of methodologies. For the purposes of this literature review, the researcher outlines some of the most prevalent models used in the area of international agriculture and extension education.

Rapid rural appraisal (RRA) is one of the oldest models of needs assessment. Developed in the late 1970s, it became a popular method to assess needs because it worked to remove biases, moved away from long questionnaires, and reduce costs (Chambers, 1991). Freudenberger (1993) describes this model as a study or series of studies that usually last from 4 to 8 days during which a set of issues that have been defined by the study objectives are examined. The researcher will work with the community in order to collect data with a variety of different tools in order to gather quality information about a community. The model of RRA is typically used as an initial gage of what a community already has or what it may need. There are five essential principals of RRA outlined by Chambers (1991): 1) Optimizing trade-offs between quantity, relevance, accuracy, and timeliness; 2) Offset biases by being relaxed, not rushing, listening, probing, being unimposing, and seeking out the poorest of the

community; 3) Triangulation or using a variety of different data collection tools; 4) learn from and participate in learning with the rural people; and 5) learn rapidly and progressively with great flexibility.

Similar to RRA, the model of Participatory rural appraisal (PRA) is also used when assessing the needs of a client. In this model, Chambers (1991) suggests that there is no defined line between RRA and PRA. In RRA the researchers/outsiders or the "We" are dominant in conducting the assessment. In PRA the emphasis shifts to the "They" or the clients. In contrast to RRA, PRA gives responsibility to the clients to assess themselves. Similar to the process of RRA, the process of PRA should not be rushed, triangulation is very important, and focusing on collecting information that is central to the study is essential (FAO, 2009).

Another needs assessment model developed by Westinghouse Electric Corporation (1997) is the General Employee Training Needs Analysis (GETNA). Conklin et al. (2003) used this model in order to identify training needs of extension personnel working for the Ohio Extension Agents Association. The GETNA model of needs assessment is incredibly simple and consists of one questionnaire distributed to a population or sample of people. The questionnaire is developed by creating a list of tasks and asking the participant to select, on a Likert-type scale, level of difficulty, perceived importance, and frequency of use. All scores for each task are added together for each task and then a mean score for each task is calculated. Through this method a prioritized list of tasks is created (WEC, 1997).

The Farmer Informational Needs Assessment (FINA) was used by Meagy et al. (2013) in order to assess informational needs of farmers in Bangladesh. FINA is a program employed by the Department of Agriculture Extension in Bangladesh in which a meeting is organized between farmers and extension agents to discuss a predetermined topic and listen to the problems that the farmers identify throughout the meeting. After the meeting, extension agents attempt to address the problems which were identified by the farmers.

As stated above, needs assessments are able to be designed in many ways using a variety of tools, such as surveys and interviews. The examples listed above are some of the more frequently used methods that can be tailored to a situation, however there are many more methods which allow people to assess needs.

Borich Model of Needs Assessment

The model of needs assessment which is used in this study is the Borich Model of Needs Assessment. Therefore, the remaining portion of this literature review will focus on the many ways in which this model has been used domestically and internationally to assess inservice training needs.

Since the model was proposed by Gary Borich (1980), it has been used on many occasions, as it is an efficient way to understand training needs of people involved in education. Overwhelmingly, the model has been used to assess the inservice needs of school teachers or agricultural extension agents throughout the United States. Research conducted by Harder, Roberts, Stedman, and Thoron (2009), Layfield and Dobbins (2000), Edwards and Briers (1999), Margret Hale (1993), and Waters and Haskell (1988)

all successfully utilized the Borich model of needs assessment framework to examine various forms of inservice training needs of professionals in their fields.

Harder, Roberts, Thoron and Myers (2009), used the Borich Model in order to evaluate the teaching competencies of agricultural and life sciences faculty at the University of Florida. Their work consisted of a questionnaire that covered teaching competencies and respondent preferences towards delivery of professional development activities. Through this work the researchers were able to provide recommendations for professional development of faculty members which was much more focused on specific areas pinpointed by the research.

Work by Layfield and Dobbins (2000) utilized the Borich Model to assess the inservice training needs of South Carolina teachers during different stages of their teaching career. The researchers conducted this work in order to identify inservice training needs of experienced agriculture teachers in South Carolina, identify the inservice training needs of beginning agriculture teachers, and compare these needs in order to make recommendations. The study was able to produce a list of the ten needs as perceived by agriculture teachers. Furthermore, this list allowed the researchers to make six recommendations for future inservice training.

The work of Edwards and Briers (1999) takes on an interesting approach to the Borich Model in which a second layer of questioning was added. First, asking the respondents to rank each competency based on their perceived level of importance. The second layer of questioning accompanied the first questionnaire which measured competence and expressed need of each competency statement, consistent with the

standard Borich Model. The study attempted to accomplish objectives similar to the two studies above, in which the assessment of inservice education needs were being measured by entry-phase teachers. Apart from the works above, the study assessed the appropriateness of gathering this type of data by comparing discrepancy and direct assessment methods. This research suggested that the most appropriate means of collecting this type of data is through discrepancy scores. The research was able to pinpoint inservice educational needs of agriculture teachers in Texas as well.

Margaret Hale (1993), used a Borich Model to identify staff development needs of extension agents, explore relationships among agents' perceptions of importance; personal knowledge; ability to apply information regarding technical competencies; determine differences among faculty training needs in regard to tenure, degree attainment, and education course work; and understand the agents' preferred methods for receiving training.

In an earlier work by Water and Haskell (1988), the Borich model was used to understand the staff development needs of field faculty in the Nevada Cooperative Extension System. The study also assessed the appropriateness and merit of the Borich Model in general. The researchers also attempted to enhance the model's utility by building upon it based on other research. This research was able to accomplish its main objective: understanding staff needs, as well as present a modified Borich Model which built upon the standard Borich Model and provided researchers with another tool of competency evaluation.

Apart from domestic use of the Borich Model to analyze educational needs of school teachers and extension agents, the model has been used many times in international development. Because the proposed research will take place in the Republic of Moldova, it is important to obtain relative assurance that the Borich Model Needs Assessment is appropriate for capturing the needs of international educators, whether it be in a country's school system or its very fragile agricultural extension system. Through the evaluation of the works by various researchers which have employed this model internationally, it appears that the Borich Model Needs Assessment holds the same utility that it has held within the larger body of literature in the United States. Works by Harder, Ganpat, Moore, Strong, and Lindner (2013), Barrick (2011), Lopokoiyit, Onyango, and Kibette (2013), Mudukuti and Miller (2002), Perez-Dlamini, Mbingo and Dlamini (2003), Hossein, Alibaygi, Ghasemi, and Ghambarali (2012), Alibaygi and Zarafshani (2008) all successfully employed the use of a Borich Model needs assessment in international settings.

Harder et al. (2013) was able to identify areas of extension programs in various Caribbean countries that could benefit from this type of assessment in order to provide more valuable agricultural education services to the countries of the region. Barrick (2011) was able to use the model to assess the perception of Egyptian instructors of their ability to implement student internship experiences based on information learned through workshops designed by the Midwest Universities Consortium for International Activities, Inc. Lopokoiyit et al. (2013) employed the model in order to assess the management competencies required by extension staff throughout the extension system

in Kenya. Mudukuit and Miller (2002) used the Borich Model to identify the perceived educational needs and barriers to extension participation of rural women in Zimbabwe. Mbingo and Blamini (2003) used the Borich Model to determine curriculum content which needed to be incorporated in the Swaziland secondary school system. Hossein et al. (2012) were able to use the model in order to assess the educational needs of fish farmers in Kermanshah province of Iran. Finally, Alibaygi and Zarafshani were able to successfully use the model to assess inservice training needs of agricultural extension agents in West Iran.

CHAPTER III

METHODS

The purpose of this chapter is to describe the process undertaken in order to conduct this study. This chapter will consist of six sections as follows: Research Design, Population, Sample, Instrument, Data Collection, and Data Analysis.

Research Design

This descriptive study was done in support for the National Agency for Rural Development (ACSA) in order to identify inservice training needs of agricultural extension agents employed by the organization. Taking into account Dillman, Smyth and Christian's (2009) Tailored Survey Design methodology, the researcher developed an inservice training questionnaire (consisting of 41 agricultural extension competencies) which could be utilized by the Borich Model of Needs Assessment (Borich, 1980). Dillman et al.'s Tailored Survey Design Method "involves using multiple motivational feature in compatible and mutually supportive ways to encourage high quantity and quality of response to the surveyor's request (pp. 16)." There are three important considerations in this methodology consisting of: developing survey procedures which work to reduce the four sources of survey error, developing survey procedures (pre-notice, invitations, reminders, and thank you letter) that work together and encourage participants to respond, and developing survey procedures that build positive social exchange which encourage participants to respond. The ways in which these three

considerations were addressed will be illustrated throughout the remaining sections of this chapter.

As mentioned above, the Borich (1980) Model of Needs assessment was used in developing the questionnaire. The Borich Model of Needs Assessment is conducted by designing a questionnaire through which participants are able to self-assess gaps between *what is* and *what should be*. Borich describes these gaps as discrepancies. The model is capable of measuring different types of discrepancies by comparing different competency dimensions such as: perceived importance, knowledge of competency, ability to perform competency, and ability to produce pupil learning with competency. Through the comparison of these competency dimensions, three forms of discrepancy may be analyzed: Knowledge discrepancies, performance discrepancies, and consequence discrepancies. Data collected in this study compares the competency dimensions of perceived importance and ability to perform competency which when compared produce a performance discrepancy. Performance discrepancy measures what Borich calls performance competence and is defined as, "Ability accurately to execute the behavior in a real of simulated environment in the presence of an observer (pp.40)."

Population/Sample Selection

The population of this study consisted of every agricultural extension agent employed by ACSA (N=425) in the Republic of Moldova. According to the World Telecommunication Union (2013), 43% of Moldova's population is using the internet. However, 91.4% of the population for this study possessed an email address and has access to the internet in their office or at one of their regional centers located throughout

the entire country. This does leave room for a small amount of coverage error. The size of the sample was 291 agents, randomly selected from the population. This is consistent with Dillman et al.'s (2009) suggested sample size for a 95%, ±3%, 50/50 split confidence level from a population of 400. This sampling method will allow an accurate representation of ACSA agents employed in each district throughout Moldova and will address sampling error.

Instrumentation

The instrument used for data collection (Appendix A) in this study, again followed Dillman et al.'s (2009) tailored survey design methodology. The questionnaire was designed and electronically distributed through the Qualtrics online surveying platform. Ladner, Wingenbach, and Raven (2002) suggest that advantages of online surveying far outweigh its disadvantages because it saves resources and drastically reduces data collection time compared to mail surveys. Moreover, in the experience of the researcher the Moldovan postal system is highly unreliable.

The questionnaire that was developed consisted of two sections. The first section presented 41 competency statements. Based on suggestions by Rossi, Lipsey, and Freeman (2003), competency statements were developed through a review of the literature and past research (Cochran, Harder, & Place, 2011; Ghimire & Martin, 2011; Hale, 1993; Scheer, Liles & Mustain, 2004; Waters & Haskell 1988), questioning the stakeholders (Ojag, 2013) (Appendix B), and personal judgment. The 41 competency statements were broken down into three constructs: organizational knowledge, program development and implementation, and personal development. For each competency

statement the respondent was asked to rate on a 4 anchor scale (1=none, 2=low, 3=medium, 4=high) their ability to complete and their perceived level of importance for each statement. A 4-anchor scale was selected due to its lack of middle option. Moors (2008) suggests that when respondents are given the choice to select a middle option, they do not provide similar results compared to respondents that are forced to select one side of an extreme.

The second section of the questionnaire consisted of three demographic questions measuring age, gender, and level of education. These questions will be used to describe the selected sample and provide additional constructs for further statistical analysis.

Once completed, the instrument was reviewed by experts in the field of international agricultural extension and education in order to assess the content and face validity.

Because this study took place in Moldova the questionnaire was translated to Romanian, the national language of Moldova. For the purposes of this study a back-translate method was used. McGorry (2000) suggests that this method of translation is one of the most valuable ways to translate an instrument because it passes through a number of filters which remove inconsistencies, mistranslations, different meanings for words, cultural gaps, and lost words or phrases. Consistent with this methodology the questionnaire used in this survey was first translated by the researcher (having an intermediate advanced level of Romanian), then passed on to a colleague and citizen of Moldova, who then translated the questionnaire back into English. Once translated back into English the researcher checked the consistency of the initial translation. In the final

step of the translation process, both translators consulted with each other, using the two translated questionnaires in order to finalize the translation of the instrument.

Data Collection

As mentioned above, data were collected electronically using the Qualtrics online platform. The distribution of the questionnaire followed the method outlined by Dillman et al. (2009). Email addresses were obtained through an organizational directory provided by the researcher's contact in ACSA's central office. On January 14, 2014 the first communication was sent as a pre-notice by an ACSA employee working at ACSA's central office. The invitation letter was distributed a day later by the researcher. Reminder emails were then sent to participants every 3-4 days. Table 1 illustrates the distribution timeline. In order to avoid reminders becoming buried in a participant's inbox, measures were taken to send all reminders during the early part of Moldova's work day. Appendix C contains all of the emails sent to participants in this study.

Table 1

E-mail Distribution Timeline

Communication	Date
Pre-notice	14-Jan
Invitation	15-Jan
First Reminder	19-Jan
Second Reminder	22-Jan
Third Reminder	26-Jan
Fourth Reminder	9-Feb

Invitation letter and reminders were drafted using recommendations of Dillman et al. (2009). By using the researcher's contact in ACSA's central office to distribute the pre-notice, a second level of contact was added between respondents and the questionnaire. The invitation letter and reminders were personalized with the "piped text" ability in Qualtrics. This allowed the researcher to add respondent names to the subject line and body of the text for each email. Emails where kept short and to the point, but in a variety of ways urged participants to respond.

In order to prompt higher response rates, the researcher utilized Dillman et al.'s suggestion to enhance social exchange, personalized each email, and strategically distributed all emails to avoid invitation/reminders becoming buried in respondents' inboxes. Furthermore, all bounced or failed email addresses where double checked for mistakes which substantially decreased the amount of bounced emails.

Once the period for data collection ended, nonresponse error was addressed through Lindner, Murphy, and Brier's (2001) first proposed method for handling nonresponse error. Consistent with the method proposed, the early respondents were compared with the late respondents. Late respondents in this study were defined appropriately as the last 30 responses collected in the final waves of responses. If no differences were found between the early and late responders, this method proposes that those "…who responded to the questionnaire late are similar to non-respondents (pp. 51)."

Data Analysis

Once the data collection process was ended, the researcher exported the data set compiled by Qualtrics which automatically strips all identifying information. Data were analyzed using Microsoft Excel 2013 and SPSS predictive analytics software.

Only descriptive statistics were calculated for use in data analysis, apart from an independent t-test used to assess nonresponse error. As described by Borich (1980), a Mean Weighted Discrepancy Score (MWDS) was calculated by first calculating a discrepancy score (DS) by subtracting the indicated importance score from the indicated ability score for each response. Next the mean of importance scores and DSs were calculated which were then multiplied together in order to calculate the MWDS. Because the instrument used a 4-anchor scale the MWDSs had a range of -16 to16. Mean weighted discrepancy scores for each competency statement were calculated and ranked from largest to smallest. A weighted discrepancy score (WDS) was calculated as well by multiplying DS by importance for each response. The WDS was calculated for use in the independent t-test comparing early responders to late responders which addressed nonresponse error.

Mean weighted discrepancy scores were calculated for every competency statement for the entire data set which ranked the overall highest MWDS as indicated by every respondent's answer. Separate MWDSs were also calculated based on demographic constructs which separated responses based on what was being measured (Male – Female, age category, and Master's degree – Bachelor's degree).

Means for ability scores, importance scores, and ages were calculated in an effort to further describe the population of extension agents employed by ACSA. Frequencies were also calculated for the demographical constructs of highest level of education completed and gender.

CHAPTER IV

RESULTS

This chapter will describe the results of the developed questionnaire and present the findings based on the purpose and objectives laid out in the beginning of this work. The chapter begins by discussing the response to the questionnaire, addressing non-response error and describing the sample. The remaining portion of the chapter will identify the extension agents' self-perceived ability to complete each competency, identify the agents' self-perceived level of importance for each of the competency statements, rank each competency statement from most to least important using a MWDS, rank each competency statement based on three constructs consisting of organizational knowledge, program development and implementation, and personal development and, rank each competency statement based on the demographic indicators collected. Finally, the chapter will conclude with a summary of the results.

Sample Response

In an effort to collect the data presented in this study, 291 extension agents where initially contacted. Of those 291 agents, one email failed and 107 emails bounced due to either errors in the address itself or were sent to addresses no longer in existence. Therefore, addresses were further checked for mistakes and a new organizational directory was requested from the central office of ACSA. Using the new organizational directory, 99 of the 107 addresses were found to be updateable. In the second attempt at

contacting participants, 99 emails were sent to those participants found to have different email addresses. This attempt resulted in only 59 bounced emails and no failed emails. Email addresses were once again checked for entry mistakes resulting in no errors, suggesting that the 59 bounced emails were the result of addresses no longer in existence. Of the 291 agents initially selected to participate in the study, the final sample contained 223 participants.

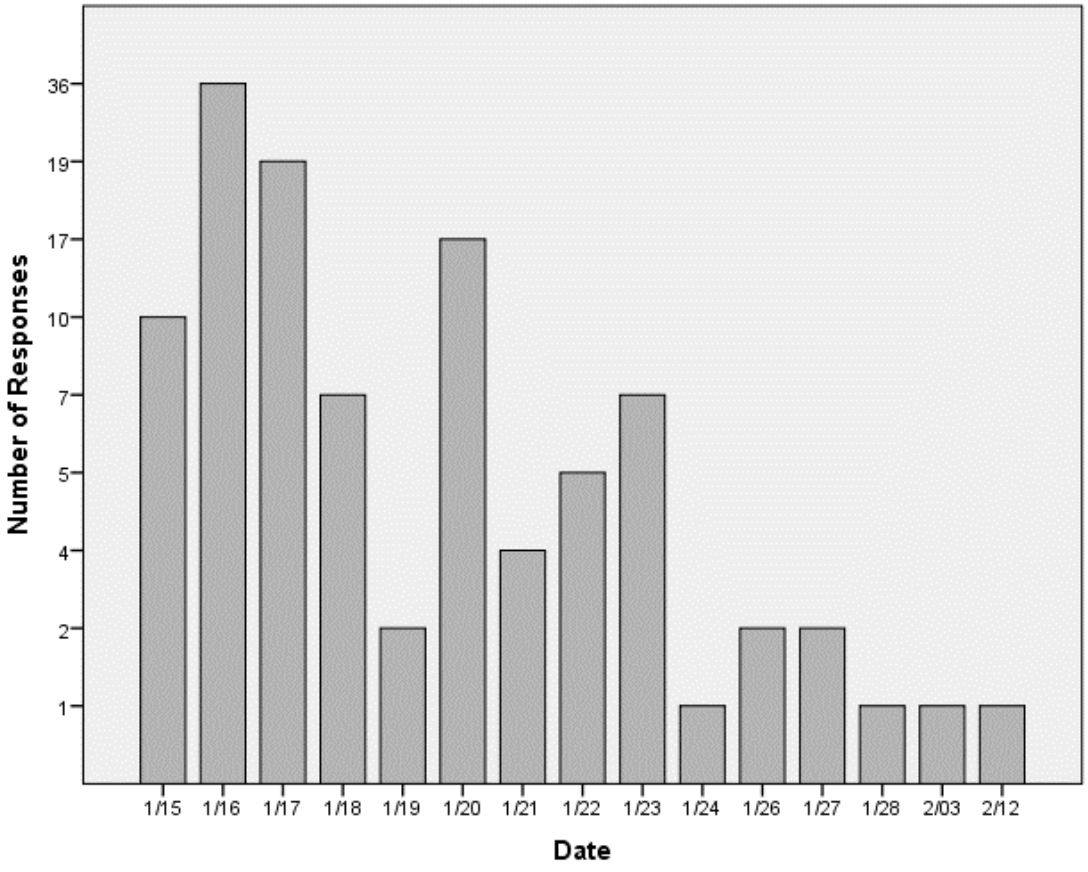

Figure 1. Standard bar graph showing the number of responses by date. Missing dates indicate that 0 responses were received on that day. Characteristics of the graph illustrate distinct waves consistent with invitation and reminder emails.

Illustrated in figure 1, responses were collected from January 15th to February 12th. Reminders to respond were sent out on January 19th, 22nd, 26th, and February 9th which all prompted at least one additional response. Consistent with many survey-based studies, responses arrived in distinct waves with the majority of responses making up the first two waves.

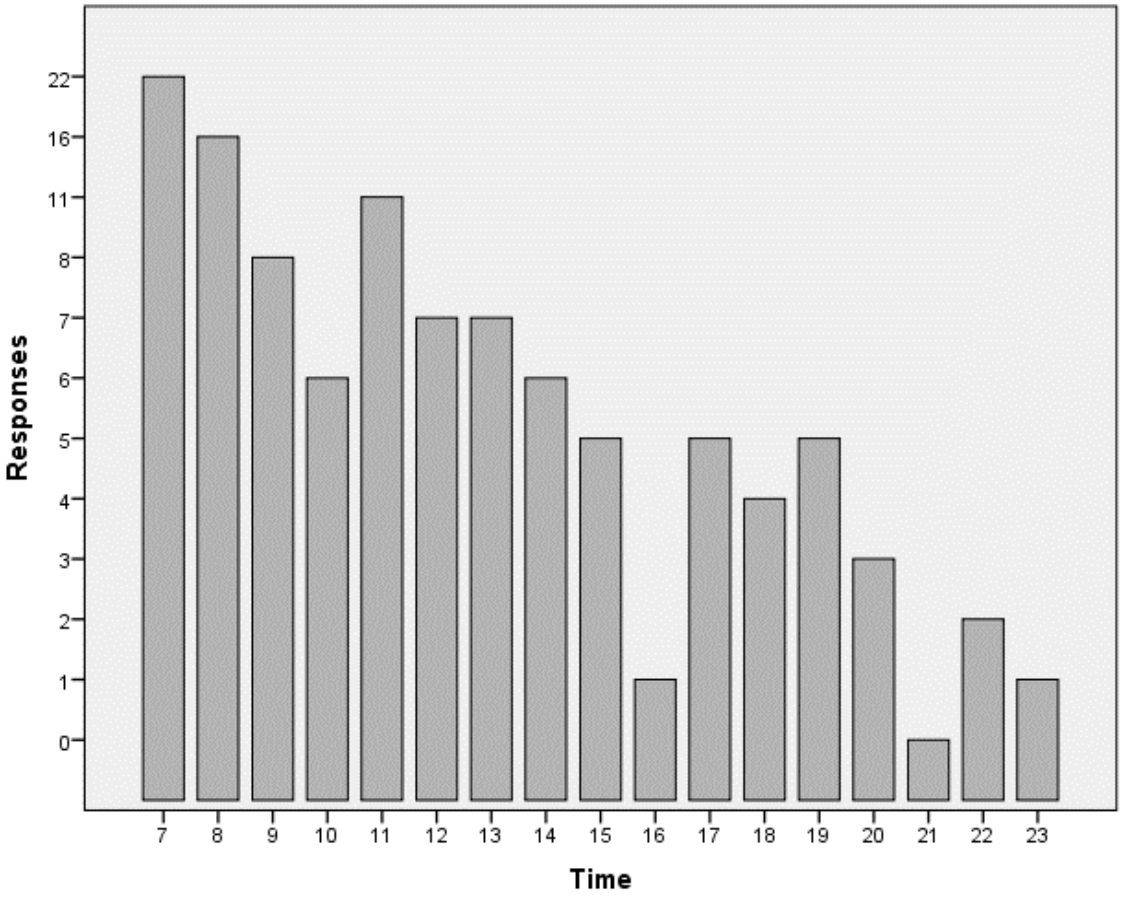

Figure 2. Standard bar graph illustrating the number of responses received from 7:00am to 11:00pm. The 24 hour clock was used for reading purposes.

The invitation and reminder emails, as stated in the previous chapter, were strategically sent at 11:00 pm CT (7:00am EET, Moldova) which allowed reminders to arrive at the top of each extension agent's inbox at the beginning of each work day. In response to strategically sent emails, 54.79% of responses were received before 11:00 am in Moldova (Figure 2).

Questionnaire duration (Figure 3) varied wildly, with the mean time spent on the questionnaire settling at 30 minutes. However, 45 (39.13%) of the responses consisted of a duration greater than 4 hours which greatly skewed the mean. Durations lasting longer than 4 hours suggests that the questionnaire was left open on the extension agent's computer until a more convenient time arose to complete it. The next greatest concentration of response duration ranged from 9-22 minutes and consisted of 37.41% of the responses received.

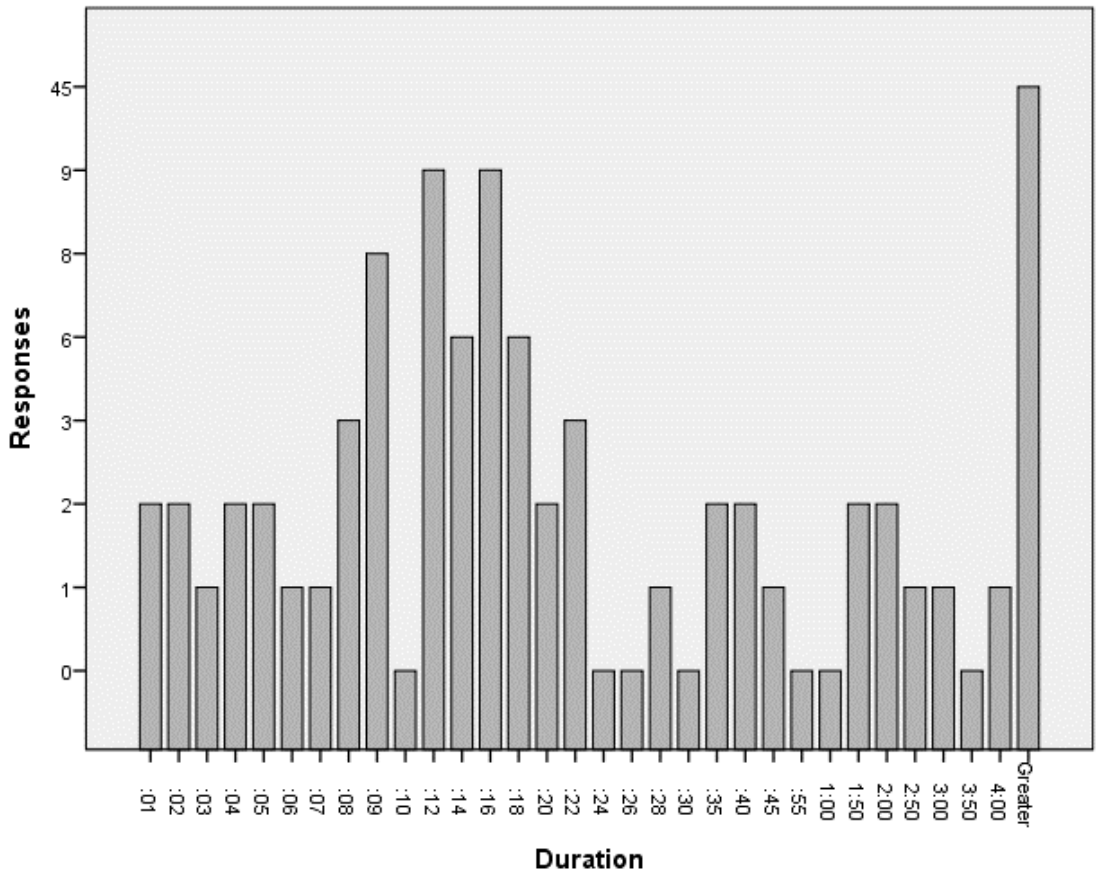

Figure 3. Standard bar graph illustrating number of responses based on duration.

Of the 223 sampled participants, 115 extension agents completed the questionnaire giving the study a response rate of 51.6%. As the researcher analyzed the data it was found that some of the submitted questionnaires were unusable and others were only partially useable, due to skipped questions or participant dropout. Depending on the question being answered, useable results ranged from 81 to 75. As a result of partially useable data the final useable response rate was 36%.

Nonresponse Analysis

As defined by Dillman et al. (2009), "Non-response error occurs when people selected for the survey who do not respond are different from those who do respond in a way that is important to the study (pp. 17)." In an effort to address nonresponse error, early responders were compared to late responders, as suggested by Lindner et al. (2001). This method of nonresponse analysis is referred to as an extrapolation method, which suggests that participants responding late are similar to participants that failed to respond. If no differences are found between early and late responders the results may be generalized to the population selected for the study (Lindner et al., 2001).

In order to assess nonresponse error, an independent t-test was performed. As suggested by Lindner et al. (2001), the results from the all early responders were compared with the last 30 responders. Results of the test were found to show no differences between early and late responders ($p > .05$) on all but one of the competency statement questions. There were significant differences in the scores for early responders ($M = -.13$, $SD = .612$) and later responders ($M = 1.04$, $SD = 1.99$) condition; $t(32.82) = -2.93$, $p = .006$ for the competency statement *Understanding the organizational structure of ACSA*. The results suggest that late responders are similar to those who did not respond. Therefore, the results of the study may be extrapolated to the entire population of extension agents employed by ACSA.

Demographics

In order to describe the population, three questions were added to the instrument in order to assess extension agents' gender, age, and highest level of education

completed (Table 2). As well as describing the population, demographics were used as constructs in order to address objective 5.

The first demographic construct was gender. Of total respondents that reported their gender, 28% (n = 23) were female and 72% (n = 59) were male. For extension agent highest level of education completed, 78.4% (n = 62) of agents reported receiving the Moldovan equivalent of a Bachelor's degree with only 21.5% (n = 17) reported obtaining a Master's degree. Finally, with 82 agents reporting, the mean age of agent was calculated as 51.09 years old.

Table 2
Respondent Demographics

Construct	Category	*f*	%	*M*
Gender	Female	23	28	
	Male	59	72	
Education	Bachelor's Degree	62	78.4	
	Master's Degree	17	21.5	
Age	0-49	26		
	50+	53		51.09

Objective 1

Objective 1 sought to identify the extension agents' self-perceived ability to complete each of the 41 competency statements. As stated in the previous chapter, agents were asked to identify their ability to complete each of the 41 competency statements based on a 4-anchor Likert-type scale (1=none, 2=low, 3=medium, 4=high). Data were then analyzed using SPSS Statistical program version 20. Frequencies, means and standard deviations were calculated and ranked based on their means (Appendix D). Table 3 presents the top 10 competency statements with the highest means in respect to agent ability. Overall, agents seem to have a medium high ability for each competency statement with means ranging from 3.77 to 3.58.

Table 3

Rankings of 10 Highest Means for Extension Agents' Ability to Complete Competency

Rank	Competency Statement	*f*	*M*[a]	*SD*
1	Understand the mission of ACSA	81	3.77	.426
2	Understand the visions of ACSA	81	3.67	.474
3	Understand the organizational structure of ACSA	81	3.65	.479
4	Understand policies of ACSA	80	3.65	.480
5	Share experience between extension agents	78	3.64	.509
6	Understand workgroup dynamics	78	3.63	.512
7	Identify policies specific to your area of responsibility	80	3.63	.513
8	Identify opportunities for professional development	78	3.59	.495
9	Acquire information resources for a variety of subject areas	77	3.58	.496
10	Network with others in your area of work	78	3.58	.523

Note. [a]Scale: 1 = None, 2 = Low, 3 = Medium, 4 High.

Additionally the ten lowest ranking abilities, as perceived by extension agents to complete, are presented in Table 4 (low to high). Overall, the agents reported means ranging from 3.29 to 2.41. The lowest ranking competency statements in terms of agent ability consist of recruiting volunteers and managing volunteers. A possible explanation for this is a low reliance on volunteer work within ACSA programming.

Table 4

Rankings of 10 Lowest Means for Extension Agents' Ability to Complete Competency

Rank	Competency Statement	*f*	*M*[a]	*SD*
1	Recruit Volunteers	75	2.41	.871
2	Manage Volunteers	73	2.42	.956
3	Develop a marketing plan for programs	75	2.99	.557
4	Interpret research findings	75	3.07	.600
5	Develop a program on relevant subject matter	77	3.12	.648
6	Create partnerships	78	3.19	.582
7	Develop a plan for building personal leadership	78	3.22	.573
8	Identify research-based information	76	3.24	.608
9	Write effectively for target audience	76	3.26	.700
10	Manage stress	77	3.29	.607

Note. [a]Scale: 1 = None, 2 = Low, 3 = Medium, 4 High.

Objective 2

Objective 2 sought to identify the consultants' self-perceived level of importance of the 41 competency statements. Consultants were asked to assess how important they felt each competency statement was to the work that they do as agricultural extension agents and rank it on a scale of one through four (1=none, 2=low, 3=medium, 4=high).

Presented in Table 5 are the top 10 most important competencies as perceived by the agents (entire list may be found in appendix E). The top five include, identifying opportunities for professional development, developing professional relationships, understanding the vision of ACSA, understanding the mission of ACSA and making clear and convincing oral presentations. Comparing Table 3 with Table 5, two of the top five important competency statements are present in the top 5 competencies for agent ability.

Table 5
Rankings of the 10 Highest Means for Perceived Importance

Rank	Competency Statement	*f*	*M*[a]	*SD*
1	Identify opportunities for professional development	78	3.82	.386
2	Develop trusting professional relationships	77	3.82	.388
3	Understand the visions of ACSA	81	3.81	.391
4	Understand the mission of ACSA	81	3.81	.391
5	Make clear and convincing oral presentations	77	3.77	.426
6	Understand workgroup dynamics	78	3.74	.468
7	Network with others in your area of work	78	3.74	.439
8	Understand the organizational structure of ACSA	80	3.73	.449
9	Identify policies specific to your area of responsibility	80	3.71	.455
10	Share experience between extension agents	78	3.71	.459

Note. [a]Scale: 1 = None, 2 = Low, 3 = Medium, 4 High.

As in objective one, the bottom ranking competencies are presented (Table 6). The five lowest rankings include managing volunteers, recruiting volunteers, developing programs on relevant subject matter, interpreting research finding,s and developing a

marketing plan for programs. Comparing the lowest ranking competencies in ability (Table 3) with the lowest ranking competencies for importance, the lowest five rankings contain the same statements, however in a different order.

Table 6
Rankings of the 10 Lowest Means for Perceived Importance

Rank	Competency Statement	*f*	*M*[a]	*SD*
1	Manage volunteers	73	2.79	.849
2	Recruit volunteers	75	2.81	.817
3	Develop a program on relevant subject matter	77	3.25	.610
4	Interpret research findings	75	3.29	.632
5	Develop a marketing plan for programs	75	3.31	.615
6	Manage multiple tasks	77	3.38	.650
7	Understand advisory procedures	80	3.40	.587
8	Apply critical thinking skills	77	3.43	.524
9	Create partnerships	76	3.45	.617
10	Develop a plan for building personal leadership	78	3.45	.595

Note. [a]Scale: 1 = None, 2 = Low, 3 = Medium, 4 High.

Objective 3

The purpose of objective 3 was to rank the competency statements in accordance with a mean weighted discrepancy score (MWDS). To reiterate, Borich (1980) suggests that competency statements receiving the highest MWDS indicate the highest priority for revising or developing further training. The entire list of competency statements ranked by MWDS may be seen in Appendix F. The top 10 rankings of competency statements that received the highest MDWS are presented in Table 7, with the top five being: using

professional networks to enhance programs, managing time effectively, recruiting volunteers, developing marketing plans for programs, and developing trusting professional relationship. The top grouping of MWDS were spread over a relatively small range. Only one tenth of a point separated the highest ranking statement from the fifth ranking statement and only 0.26 of a point separated the top ranking statement from the tenth. As was presented in objective 1 and 2 the ability and importance scores seem to be rather high across the board with exception to managing volunteers.

Table 7
Rankings of the 10 Highest MWDS Scores

Rank	Competency Statement	*A*	*I*	[a]*MWDS*
1	Use professional network to enhance programs	3.30	3.62	1.14
2	Manage time effectively	3.39	3.66	1.14
3	Recruit volunteers	2.41	2.81	1.13
4	Develop a marketing plan for programs	2.99	3.31	1.06
5	Develop trusting professional relationships	3.55	3.82	1.04
6	Manage volunteers	2.42	2.79	1.02
7	Manage stress	3.29	3.56	0.97
8	Create partnerships	3.19	3.45	0.88
9	Identify opportunities for professional development	3.59	3.82	0.88
10	Explain relevant subject matter	3.30	3.55	0.87

Note. [a]Recall, MWDS identifies order of prioritized list.

Conversely, Table 8 presents the ten statements receiving the lowest MWDS. The five lowest statements are: interacting with diverse individuals and groups, understanding organizational structure of ACSA, understanding policies of ACSA, acquiring information resources for a variety of subjects, and understanding the mission

of ACSA. Again, the range of MWDS from lowest to tenth lowest is rather small with only 0.29 points separating the lowest from the tenth lowest. Although these statements were ranked at the bottom of the list, the ability and importance seem to be fairly high across the board, as was the case at the top of the rankings list.

Table 8
Rankings of the 10 Lowest MWDS Scores

Rank	Competency Statement	*A*	*I*	[a]*MWDS*
1	Interacting with diverse individuals and groups	3.56	3.58	0.05
2	Understand the organizational structure of ACSA	3.65	3.73	0.09
3	Understand policies of ACSA	3.65	3.69	0.14
4	Acquire information resources for a variety of subject areas	3.58	3.62	0.14
5	Understand the mission of ACSA	3.77	3.81	0.19
6	Manage multiple tasks	3.31	3.38	0.22
7	Share experience between extension agents	3.64	3.71	0.24
8	Understand advisory procedures	3.33	3.40	0.26
9	Identify policy specific to your area of responsibility	3.63	3.71	0.32
10	Evaluate your program	3.42	3.52	0.34

Note. [a]Recall, MWDS identifies order of prioritized list.

Objective 4

Objective 4 sought to Rank the competency statements based on three constructs (Organizational Knowledge, Program Development and Implementation, and Personal Development). The first construct contained competency statements related to knowledge of ACSA (Table 9). The scores calculated for these statements tend to fall

toward the bottom of the overall rankings list. The top ranking competency statement in the organizational knowledge construct was understanding the vision of ACSA (*MWDS* = 0.57) and the lowest was understanding the organizational structure of ACSA (*MWDS* = 0.09).

Table 9
Rankings of Organizational Knowledge Construct

Rank	Competency Statement	[a]*MWDS*
1	Understand the vision of ACSA	0.57
2	Identify policies specific to your area of responsibility	0.32
3	Understand the mission of ACSA	0.19
4	Understand policies of ACSA	0.14
5	Understand the organizational structure of ACSA	0.09

Note. [a]Recall, MWDS identifies order of prioritized list.

The second construct contained competency statements related to program development and implementation (Table 10). This construct contained the most competency statement (n = 20) and tended to consist of higher ranking MWDS. The majority of statements that fell within the top ten in the overall competency statement ranking list also are contained in the construct of program development and implementation. Moreover, the most important competency statement identified by the agents was included in this construct. The top ranking statement was using professional network to enhance programs (*MWDS* = 1.14) and the lowest was acquiring informational resources for a variety of subjects (*MWDS* = 0.14).

Table 10

Rankings of Program Development and Implementation Construct

Rank	Competency Statement	[a]*MWDS*
1	Use professional network to enhance programs	1.14
2	Recruit volunteers	1.13
3	Develop a marketing plan for programs	1.06
4	Develop trusting professional relationships	1.04
5	Manage volunteers	1.02
6	Explain relevant subject matter	0.87
7	Utilize effective teaching methods	0.84
8	Make clear and convincing oral presentations	0.83
9	Identify research-based information	0.82
10	Apply relevant subject matter to real life problems	0.79
11	Prepare an annual plan of work	0.77
12	Interpret research findings	0.75
13	Write effectively for target audience	0.72
14	Understand diversity in extension	0.70
15	Demonstrate technology skills pertinent to the subject	0.64
16	Use latest communications technology	0.62
17	Develop a program on relevant subject matter	0.42
18	Evaluate your program	0.34
19	Understand advisory procedures	0.26
20	Acquire information resources for a variety of subjects	0.14

Note. [a]Recall, MWDS identifies order of prioritized list.

The third construct contained competency statements related to personal development or general professional skills (Table 11). This construct also contained some of the top ranked statements, including the second overall ranked competency as perceived by the agents. In this construct, the top ranked statement was managing time

effectively (*MWDS* = 1.14) and the lowest ranked statement was interacting with diverse individuals and groups (*MWDS* = 0.05), which is the lowest ranked statement in total.

Table 11
Rankings of Personal Development Construct

Rank	Competency Statement	[a]*MWDS*
1	Manage time effectively	1.14
2	Manage stress	0.97
3	Create partnerships	0.88
4	Identify opportunities for professional development	0.88
5	Develop good listening skills	0.83
6	Develop a plan for building personal leadership skills	0.80
7	Manage conflicts	0.79
8	Network with others in your area of work	0.62
9	Nurture leadership skills in others	0.59
10	Apply critical thinking skills	0.45
11	Understand workgroup dynamics	0.43
12	Develop trusting professional relationships	0.41
13	Understand leadership principles	0.37
14	Share experience between extension agents	0.24
15	Manage multiple tasks	0.22
16	Interacting with diverse individuals and groups	0.05

Note. [a]Recall, MWDS identifies order of prioritized list.

Objective 5

The fifth and final objective laid out in the introduction of this study was to rank the competency statements based on the demographics of ACSA consultants (age, gender, and level of Education). This objective required the researcher to recalculate

MWDSs using only responses falling in the measure of demographic being addressed. Gender was broken down into male and female. The level of education was found to contain two groups: those who had obtained a Master's degree and those who had obtained a Bachelor's degree. Finally, the age construct was broken down into two categories: those respondents which were 49 years old and younger and those respondents which were 50 years old or older. Entire lists of rankings based on demographic constructs can be found in Appendix G.

The resulting top 10 MWDS rankings for male and female responses may be found in Table 12 and Table 13 respectively. There are differences seen in the ranking list when broken down in this manner. Where males indicated time management (*MWDS* = 1.17) and developing a marketing plan for programs (*MWDS* =1.14) as their most important training need, females indicated identifying opportunities for professional development (*MWDS* = 1.80) and using professional networks to enhance programs (*MWDS* = 1.80) as theirs. Overall, women respondents recorded a slightly higher MWDS throughout their top ten. Male respondents MWDS ranged from 1.17 to 0.85 where female MWDS ranged from 1.80 to 1.05. However, significantly different numbers of females and males fell within each category. Males (n = 59) accounted for more responses in this construct than females (n = 23). This may be the reason for the differences seen in each categories' MWDS ranges.

Based on the MWDS rankings found in each genders' top ten, male respondents indicated higher MWDSs in the program development and implementation construct (7 out of 10). Female respondents indicated higher MWDSs equally for competency

statements found in the personal development construct (5/10), and program development and implementation (5/10). Apart from the differences seen through the identification of competency statements in the three constructs it is also apparent that males and females identified different priorities for inservice training in general. Between the two genders, only three of the group's top ten ranked competency statements matched. These statements were: recruiting volunteers, using professional networks to enhance programs, and managing volunteers.

Table 12

MWDS Rankings Based on Male Responses

Rank	Competency Statement	[a]*MWDS*
1	Manage time effectively	1.17
2	Develop a marketing plan for programs	1.14
3	Develop trusting professional relationships	1.09
4	Apply relevant subject matter to real life problems	1.00
5	Recruit volunteers	0.99
6	Explain relevant subject matter	0.99
7	Use professional network to enhance programs	0.98
8	Manage volunteers	0.92
9	Utilize effective teaching methods	0.89
10	Identify research-based information	0.85

Note. [a]Recall, MWDS identifies order of prioritized list.

Table 13

MWDS Rankings Based on Female Responses

Rank	[a]Competency Statement	[d]*MWDS*
1	Identify opportunities for professional development	1.80
2	Use professional network to enhance programs	1.59
3	Manage stress	1.38
4	Recruit volunteers	1.36
5	Manage volunteers	1.32
6	Create partnerships	1.26
7	Write effectively for target audience	1.14
8	Develop a plan for building personal leadership skills	1.11
9	Manage time effectively	1.07
10	Demonstrate technology skills pertinent to the subject	1.05

Note. [a]Recall, MWDS identifies order of prioritized list.

The next demographic construct examined was broken down based on the highest level of education obtained by ACSA extension agents. As stated above, as well as in the demographics section of this chapter, there were found to be two categories based on highest level of education obtained by agents, Master's degree and Bachelor's degree.

The top 10 MWDSs calculated for respondents holding a Master's degree as well as for those respondents holding a Bachelor's degree may be found in tables 14 and 15 respectively. Again, differences were found between the two levels of education. The top need for further training, as indicated by both respondents holding a Master's degree and respondents holding a Bachelor's degree, was developing a marketing plan for programs. Although the top ranking competency statement for both levels of education are the same, the MWDS for those holding a Bachelor's degree is much higher (*MWDS* = 2.16),

compared to those holding a Master's degree (*MWDS* = 1.30). The range of MWDS for those holding Master's degree was 1.30 to 0.73. The range of MWDS for those holding a Bachelor's degree was 2.16 to 1.14. Again, the number of respondents falling within each category was significantly different with less agents holding Master's degrees (*n* = 17) and more holding Bachelor's degrees (*n* = 62). This may account for the differences seen between the MWDS ranges of each category.

Based on each categories' MWDS top ten in this construct, those with Master's degree reported a majority (7/10) of their top scoring competency statements within the program development and implementation construct. Respondents holding a Bachelor's degree reported an equal majority (7/10) of competency scores falling within the program development and implementation construct.

Table 14

MWDS Rankings Based on Responses of those Holding a Master's Degree

Rank	Competency Statement	[a]*MWDS*
1	Develop a marketing plan for programs	1.30
2	Use professional network to enhance programs	1.27
3	Develop a program on relevant subject matter	1.22
4	Manage volunteers	1.08
5	Develop good listening skills	0.96
6	Explain relevant subject matter	0.92
7	Recruit volunteers	0.80
8	Develop trusting professional relationships	0.80
9	Understand diversity in extension	0.73
10	Manage time effectively	0.73

Note. [a]Recall, MWDS identifies order of prioritized list.

Table 15

MWDS Rankings Based Responses of those Holding a Bachelor's Degree

Rank	Competency Statement	[a]*MWDS*
1	Develop a marketing plan for programs	2.16
2	Recruit volunteers	2.11
3	Manage volunteers	1.63
4	Use professional network to enhance programs	1.58
5	Identify research-based information	1.50
6	Demonstrate technology skills pertinent to the subject	1.50
7	Identify opportunities for professional development	1.45
8	Create partnerships	1.44
9	Write effectively for target audience	1.42
10	Manage time effectively	1.41

Note. [a]Recall, MWDS identifies order of prioritized list.

The final demographic construct was broken up into two age categories. The first category included respondents ages 49 years of age or younger (Table 16) and the second included those 50 years or older (Table 17). Again, there were differences in the two categories' top ten rankings. The younger age category reported their top three MWDSs as, applying relevant subject matter to real life problems, understanding leadership principles, and understanding diversity in extension. The older category reported their top three as managing time effectively, using professional networks to enhance programs, and recruiting volunteers.

Apart from the first two demographical constructs, the MWDSs of the age construct produced similar ranges of scores, however, vastly different competency statements in their top ten rankings were reported. The younger category of agents reported scores ranging from 1.45 to 0.89 in their top ten, where the older category of

agents reported scores ranging from 1.38 to 0.94. In this case the younger age category held less respondents (n =26), but produced overall higher MWDSs, whereas the older category held more respondents (n = 53), but produced lower overall MWDSs. This suggests that number of responses in each category may not come into play as much as in the two previous constructs.

Competency statements receiving high MWDSs in the top ten of the 0-49 age category included a majority (8/10) falling within the program development and implementation construct. On the other hand, respondents in the older age category reported and equal amount of competency statements within the program development and implementation, and personal development constructs (5/10).

Table 16

MWDS Rankings Based on Responses of those 49 Years of Age or Younger

Rank	Competency Statement	[a]*MWDS*
1	Apply relevant subject matter to real life problems	1.45
2	Understand leadership principles	1.36
3	Understand diversity in extension	1.35
4	Recruit volunteers	1.33
5	Explain relevant subject matter	1.24
6	Identify research-based information	1.20
7	Manage volunteers	1.08
8	Utilize effective teaching methods	1.03
9	Develop a marketing plan for programs	0.91
10	Manage time effectively	0.89

Note. [a]Recall, MWDS identifies order of prioritized list.

Table 17

MWDS Rankings Based on Responses of those 50+ Years Old

Rank	Competency Statement	[a]*MWDS*
1	Manage time effectively	1.38
2	Use professional network to enhance programs	1.37
3	Recruit volunteers	1.25
4	Manage stress	1.23
5	Develop trusting professional relationships	1.12
6	Create partnerships	0.97
7	Use latest communications technology	0.96
8	Interpret research findings	0.95
9	Develop a marketing plan for programs	0.94
10	Manage volunteers	0.93

Note. [a]Recall, MWDS identifies order of prioritized list.

Summary of Results

Survey methodology utilized in this study resulted in a 51.6% response rate with a useable response rate of 36%. Nonresponse error was address by comparing early responders to late responders which found no significant differences. This allowed the researcher to extrapolate the results found in the data to entire population of extension agents employed by ACSA.

For each competency statement, the mean Ability response and the mean Importance response were described. Overall, understanding the mission of ACSA (*Ability Mean* = 3.77), Understand the Vision of ACSA (*Ability Mean* = 3.67), and understand the organizational structure of ACSA (*Ability Mean* = 3.65) had the highest reported means for ability. Calculated means for Importance received similarly high

means. The three highest being, identifying opportunities for personal development (*Importance Mean* = 3.82), develop trusting professional relationships (*Importance Mean* = 3.82), and understand the vision of ACSA (*Importance Mean* = 3.81).

Overall rankings of MWDSs resulted in the top five competency statements being: using professional networks to enhance programs (*MWDS* = 1.14), managing time effectively (*MWDS* = 1.14), recruiting volunteers (*MWDS* = 1.13), and developing a marketing plan for programs (*MWDS* = 1.06).

Competency statements were broken down into three constructs: organizational knowledge, program development and implementation, and personal development. Over all, understanding the vision of ACSA (*MWDS* = 0.57) for the organizational knowledge construct, using professional networks to enhance programs (*MWDS* = 1.14) for the program development and implementation construct and managing time effectively (*MWDS* = 1.14) for the personal development construct were the top ranking competency statements for each construct.

Mean Weighted Discrepancy Scores were then recalculated in terms of the demographical constructs. The Gender construct resulted in male respondents reported effective time management (*MWDS* = 1.17) as their highest MWDS, while female respondents reported identifying opportunities for professional development (*MWDS* = 1.80) as their highest MWDS. The construct of highest level of education achieved resulted in those with only Bachelor's degrees reporting developing a marketing plan for programs (*MWDS* = 1.30) as their highest MWDS and those with Master's degree's reporting the same (*MWDS* = 2.13). Finally, the Age construct resulted in the younger

category of respondents (0-49 years) reporting applying relevant subject matter to real life problems (*MWDS* = 1.45) as their highest MWDS while the older category (50+ years) reported effective time management (*MWDS* = 1.38) as their highest MWDS.

CHAPTER V

CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

Chapter V presents a summary of the entire research process undertaken by the researcher. Beginning with the purpose and objectives of the study, the chapter will then move on to present the study's conceptual basis. Next, a reiteration and critique of the findings in reference to data collection, including response rate, will be presented. The conclusions, interpretations, and recommendations of findings for each objective will then be presented, finishing with recommendations for future research.

Purpose of the Study and Objectives

The main purpose of this study was to examine the self-assessed inservice training needs of extension agents employed by ACSA. The study consisted of five objectives as follows:

1. Identify the agents' self-perceived ability to complete each competency of 41 developed competency statements.
2. Identify the agents' self-perceived level of importance of the 41 developed competency statements.
3. Rank the competency statements in accordance with a mean weighted discrepancy score (MWDS).
4. Rank the competency statements based on three constructs (Organizational Knowledge, Program Development and Implementation, and Personal Development).

5. Rank the competency statements based on demographics of ACSA agents (Age, Gender, and Level of Education).

Conceptual Basis for the Study

The conceptual basis for this study was based on Merriam, Caffarella, and Baumgartner's (2007) suggestion that the need for lifelong education in world today is at an accelerated state of change. This accelerated state of change is being driven by changing demographics, globalization, and technology. With all three of these characteristics acting upon one another, the education that we receive in our youth is no longer sufficient in equipping adults to be continually successful in the modern world. Education must be a lifelong activity which continually builds upon an adult's prior education, allowing them to keep up with the rapid state of change seen in the world today.

Through the continual training of adults, in order to keep them relevant in throughout rapid change, Edwards and Briers (1999) suggest that sparse resources drive a great need for effective needs assessments in order to identify and prioritize the most valuable areas for inservice training.

Data Collection and Critique

Data collection for this study was consistent with Dillman et al.'s (2009) Tailored Survey Design methodology in an attempt to address survey error, implement correct survey procedure, and promote participant response. The sample consisted of 291 randomly selected extension agents. Questionnaires were developed consistent with the Borich Model of Needs Assessment and distributed electronically through the use of the

Qualtrics online survey platform. As this study took place in Moldova the questionnaire was translated using the back-translate method. Questionnaire pre-notices, invitations and reminders were distributed strategically worded and timed in order to promote a better response rate, consistent with Dillman et al.'s suggestions.

Although survey methodology was used to promote response rate, address survey error, ensure correct survey procedure, the response rate for this study was 51.6%. Due to participant dropout and partially completed questionnaires, useable response rate was found to be 36%.

There are various explanations for a response rate of only 51.6%. Online questionnaires consistently receive low response rates. Research by Archer (2008), which assessed average response rates, revealed an expected response rate to online distributed needs assessment questionnaire, to only be around 39.7%. In an examination of 26 studies that distributed online questionnaires, Fraze, Hardin, Bashers, Haygood, and Smith (2003) identified an expected response rate of only 29.5%. As mentioned in Chapter 3, another explanation may be a low rate of internet use in the county which poses a risk for coverage error, however, 91% of agents employed by ACSA possess email addresses and had personal access to internet or had access at their local ACSA offices.

The researcher did attempt to address a low response rate through handling non-response error. In order to do this the researcher compared early respondents to late respondents as suggested by Lindner, Murphy & Briers (2001). Using an independent t-

test to compare early and later responders, no significant differences were found and therefore the results of this study may be generalized to the target population.

Conclusions, Implication, and Recommendations for Objective 1

Objective one was to identify extension agents' self-perceived ability to complete each competency. In order to assess this, the mean for each statement was ranked. By ranking the means for each statement, agents seemed to report a high ability in understanding the mission, vision, structure, and policies of ACSA. This suggests that the agents working in the field understand their responsibility to the public and the organizational goals. This finding is very encouraging for the future of ACSA. McDonald (2007) suggests an organization's clarity in expressing its mission, vision, and structure helps to build and sustain employee commitment, as well as provides a clear direction for the organization to move in. A non-profit's ability to express a clear mission helps to drive innovation and further its ability to develop and implement successful projects, as well. Employees' high reported ability to understand the mission, vision, structure, and policies within the organization lends itself to a very promising future of ACSA, as long as its management can continue motivating its employees through clarity of these organizational aspects.

On the other end of the scale, recruitment and management of volunteers reported the lowest means for ability. This is most likely due to a low reliance on volunteers in ACSA's rural extension programs. As stated in the literature review, ACSA's main programs are agricultural advisory services, land re-parceling, and drought adaption advisory services. These three program areas do not require a reliance

on volunteers. These scores do, however, identify an opportunity to expand ACSA's impact into volunteer central programing. The United States' extension program heavily relies on volunteer work through its programs such as 4-H (Boyd, 2004). It is crucial for agricultural extension educators to understand the value of volunteers. Dwindling budgets, competition for funds, changing agricultural environments, and a need to expand impact across a broad demographic of clientele drives a very important need for volunteer recruitment in extension (Mustain, 2001). The lack of ACSA agents' ability to recruit and manage volunteers suggests that the organization is not meeting its potential impact that may be made in the communities which they serve.

Conclusions, Implication, and Recommendations for Objective 2

Objective 2 was to identify the self-perceived level of importance attributed to each competency statement by ACSA agents. The researcher ranked the means for the reported level of importance for each statement, similar to Objective 1. The highest reported means for importance suggest that agents find identifying opportunities for professional development and developing trusting professional relationships to be the most important competencies for inservice training related to their work in extension. This finding helps to justify the entire conceptual framework of this study. Throughout this work the researcher made the case that continual life-long learning is vital to keep up with the rapidly changing nature of the world. Extension agents employed by ACSA have identified this fact on their own and strongly reported it as something which they think is important to the work conducted in their communities. Much of the theory of adult education repeatedly makes this case (Merriam, Caffarella, & Baumgartner, 2007),

which was justified by reports of ACSA agents. This finding has identified the need for ACSA's management to continually strive towards consistent and regular professional development trainings across the entire organization.

Turning to the other end of the spectrum, agents reported recruitment and management of volunteers to be the least important competency statements. This helps to confirm that the organization does not rely on volunteer support in their work, but again may identify an opportunity to expand ACSA's future impact through programs similar the 4-H or Junior Master Gardner in the United States. The value of volunteers is something that the organization should look to take advantage of, as suggested in the section above. This opportunity will be expanded upon in the coming sections of this work.

Conclusions, Implication, and Recommendations for Objective 3

Objective 3 begins to flush out the overall purpose of this study in identifying ACSA agents need for inservice training. By calculating the MWDS for each competency statement and ranking them from greatest to smallest the self-perceived need for inservice training as reported by ACSA agents may be identified. Once ranked, competency statements such as, using professional network to enhance programs, managing time effectively, managing stress, and recruiting/managing volunteers fell towards the top. This suggests that inservice training which is most needed by agents may be in the realm of personal development. Recruiting volunteers, again, suggests that agents may be open to expanding their impact into programs that rely on volunteer work.

The top ranking competency statement was, using professional network to enhance programs. Professional networks are critical in an organization's ability to produce knowledge, access resources, and assume positions of influence (Ynalvez and Shrum, 2009). The role of professional networks in ACSA may play a huge part of the organization's continued success in the country. There are a variety of ways that ACSA can capitalize on strong personal networks of their agents. Internet penetration may be low in the country, but the use of social networking sites by agents may strengthen professional networks. Professional social network platforms, such as LinkedIn, are not widely used in Moldova, with only about 55,000 visitors every 30 days to the site (Quantcast, 2014). Many of these sites are available in both Romanian and Russian, however, and could be utilized by those agents which have daily access to the internet. In the United States, extension agents utilize Facebook, county websites, email, phone, and blogs to both disseminate information about their programs and network with professionals in other industries and fellow extension agents around the country (TAMU AgriLife Extension Service, 2014). There are other ways that the organization can work to strengthen its employee's professional networks, apart from internet based social networking platforms, as well. Consistent and regular professional development trainings in which all agents are able to participate or regional think-tanks consisting of a variety of professionals in agriculture, focusing on work that is currently being done in the country, could work to strengthen professional networks of ACSA agents. Using professional networks is a topic that is consistently popular among professionals throughout the world. There is an enormous amount of information that could be utilized

by ACSA management to design cheap and efficient trainings which focus on using professional networks. A simple Google search resulted in millions of resources focused on using professional networks.

Conclusions, Implication, and Recommendations for Objective 4

Objective 4 examined the MWDS rankings within the constructs of organizational knowledge, program development and implementation, and personal development. Overall, program development and implementation along with personal development consisted of the highest ranked MWDSs.

Each of the three constructs contain competency statements that could easily be combined within one training. The organizational knowledge construct consisted of rather low ranking statements and therefore likely do not require extra effort on the part of ACSA. The highest ranking statement within this construct was the agents need for inservice training related to understanding the visions of ACSA. This could easily be address through a concerted effort by the regional managers to drive home what the visions of the organization are and how they relate to the work that the agents conduct in their communities.

The program development and implementation construct consisted of 20 of the competency statements and held the majority of those which were high ranking. Statements in this construct, again could be combined into a few trainings, eliminating the need to stage multiple trainings. Of the high ranking statements in this construct the recruitment and managing of volunteers, again is seen as a top ranked priority for agent inservice training. The two statements both represent statements receiving a MWDS

over 1.00 and could easily be combined into one training geared toward the roles of volunteers in agricultural extension. Another two top ranking statements in this construct were using professional networks to enhance programs and developing trusting professional relationships. These two statements could be easily combined into one training as well.

Developing marketing plans for programs is another statement that fell toward the top of this construct. Developing marketing plans could be hugely successful in raising awareness of ACSA's programs. Successful marketing of the organization would raise awareness of issues which the organization is targeting, including drought adaption, land re-parceling, and overall consulting products. A highly visible ACSA throughout the country would not only impact the organizational goals, but attract further funding by outside donors as well.

Having highly competent agents in the development of marketing plans could also directly impact the success of the Moldovan farmer. The soon to be signed Association Agreement between Moldova and the European Union will open free trade between the two areas (European Union, 2014). Competition in Moldova is likely to be driven to levels in which the country has never seen before due to the absence of trade barriers. The country is likely to enter into a stage of rapid development requiring all business owners to understand all aspects of western business practices. Moldovan farmers will be no exception. With the help of highly and consistently trained agents, ACSA can work at the forefront of organizations preparing the Moldovan agricultural industry for its future.

Conclusions, Implication, and Recommendations for Objective 5

The final objective was to examine the MWDS for each competency statement recalculated for the three constructs of demographics. The first demographical construct was gender. Mean Weighted Discrepancy scores between female and male respondents resulted in different competency statement rankings and an overall higher average scores for female respondents. Female respondents reported an even need for inservice training based on competency statements within program development and implementation, and personal development constructs. Males' top rankings reported a need for inservice training in the program development and implementation construct. Data suggests an overall higher need for inservice training reported by female respondents, however, there were significantly different numbers between male and female respondents which may have prompted these results. In the future, a point biserial correlation should be conducted in order to assess the statistical relationship between gender and need for inservice training.

Within the level of education construct, respondents were broken down into two groups. The first group was made of participants holding Master's degrees and the second holding only a Bachelor's degree as their highest level of education completed. The amount of respondents holding a Master's degree was much lower than those holding a Bachelor's degree, but the data shows an average MWDS much higher for those holding only a Bachelor's degree. This suggests a possible need for more inservice training directed at agents holding a Bachelor's degree as their highest level of education. Statement rankings between the two categories differed as well. The

composition of statements within the two categories differed, however, competency statements in each category's top ten rankings showed an equal need for inservice training based on competency statements within the program development and implementation construct.

Both those holding a Bachelor's degree as well as those holding a Master's degree reported a top need for inservice training in the development of marketing plans for programs. This finding helps to justify the suggestions laid out in the implications for objective 4. This result identifies another opportunity to deepen the impact of ACSA's work throughout the country. Marketing should take place at both the administrative level of an extension organization as well as the county (in Moldova's case Raionul). The administrative level should provide an overall direction for the program, while the county level should be able to develop specific details for the implementation of the overall marketing plan for each program (Chappell, 1994). Extension agents which are knowledgeable in marketing can increase the visibility of an organization as well as its attractiveness to potential donors.

Extension agents which are competent in developing marketing plans also have the capacity to pass this ability on to local farmers. Farmer-to-consumer direct marketing may be appropriate in Moldova because much of the produce sold in the country is done so in farmers' markets and roadside stands. A study by Govindasamy and Rodolfo (1996) found that, farmer-to-consumer direct marketing eliminates the middle man and helps to increase the net returns to the farmer. Extension agents can work with local farmers to identify more strategic location to sell their produce, expand the types of

produce offered by the farmer, and help them to identify consumer needs, such as what kinds of produce is demanded throughout the year.

The final demographical construct examined was age. Ages were broken down into two groups, 0-49 years old and 50+ years old. The range of MWDS between the two categories were found to be similar, however, the competency statements reported in each age category were vastly different. Respondents in the younger category identified statements in their top ten mostly within the program development and implementation construct and the older group reported an equal need for inservice training focused on statements within the program development and implementation construct, and the personal development construct.

The top ranking statements for the two age categories resulted in interesting results. The younger group reported a need to receive more inservice training in the application of subject matter to solve problems, improve their leadership skills, working with diverse clientele, and recruiting volunteers. The older group identified needs for training in time management, using professional networks, recruiting volunteers, and managing stress. The statements identified by the younger group seems to suggest a stronger priority in personal development related to their career. The younger group ranked the ability to apply subject matter to solve problems and understanding leadership priorities as their top ranked needs, however, the older group ranked these competencies at 33 and 15 respectively. The discrepancies seen in the two age categories may suggest that younger and older agents bring a completely different skill set to the table in the approaches to their work. The older group is likely to consist of agents

toward the end of their career, are used to employing leadership principals on a daily basis and have had more time to apply relevant subject matter to solve problems in their work. While designing different inservice trainings, ACSA management should understand the substantial differences in the needs of their agents based on age. Agents under the age of 50 have identified needs indicative of early career professionals, while those 50 years of age and older have ranked these needs much farther down on their list. Furthermore, management may consider developing a mentorship program which matches young agents with older agents. A program such as this may allow the skill sets that each category brings to the table to be disseminated more evenly throughout the population.

Additional Implications Based on Research

Apart from identifying inservice training needs of extension agents employed by ACSA, an opportunity for future programing presented itself. The competency statement *Recruit Volunteers* reported a MWDS in the top three overall ranking. The competency statement's mean ability suggests that agents have not received sufficient training on how to recruit volunteers, but its importance mean suggests that agents think they should understand how. Extension programing in the United States provides services to youth through the work of volunteers in programs such as 4-H and Junior Master Gardner. Through the researcher's experience in Moldova it was often apparent that there were very few opportunities for extracurricular activities offered in the realm of agriculture. Moreover there are very few opportunities for youth or adults to volunteer in their communities. Through inservice training on the recruitment and management of

volunteers, and the development of a program similar to 4-H it would allow ACSA to extend the impact it makes in rural communities.

Developing marketing plans for programs also was identified as a need for inservice training. This identified an opportunity as well. Reporting a need for training in the development of marketing plans suggests that ACSA may be operating at a level under its potential. Marketing plans assure that the product being sold is available in the right place and at the correct time, in order to assure that the customer is aware of its presence (Westwood, 2014). Visibility of ACSA's programs is essential for its future funding and overall impact that could be made in the country.

Ability to create a marketing plan is not only essential to the visibility of ACSA programs, but the extension agent's ability to teach a farmer how to develop a business plan as well. Marketing plans are vital to the creation of business plans and help to identify opportunities to penetrate and capture positions in markets (Westwood, 2014). In the near future there will likely be a growing need for farmers competent in developing marketing plans. This is due to a rapidly changing economic landscape of Moldovan markets through the country's seemingly rapid integration of Western policies. This opportunity not only lends itself to enhancing ACSA's attractiveness to donors, but identifies an opportunity to create a more successful and sustainable Moldovan farmer.

This study has determined many areas that ACSA extension agents have identified as a need for further inservice training. The rapidly changing world that drives a strong need for lifelong training, which this study is based upon, will likely be even

more vital in Moldova. Life is going to change for many Moldovan farmers with the country's further integration into a more western economy. Standards for their products are going to be under much higher scrutiny and will require the implementation of more complicated and advanced farming practices. The ability for Moldovan farmers to reap the benefits of Western markets is possible, but will heavily rely on their ability to adapt their practices to meet the rapidly changing landscape of the country. ACSA can play a vital role in the country's changing landscape through well trained, fully competent extension agents. The organization may be much more likely to play this role in Moldova's future by taking into consideration the recommendations identified in this study.

Recommendations for Additional Research

This study pertains to the training needs of agricultural extension agents needs for inservice training. Recommendations for additional researcher include:

1. It would be advisable to extend this study across all extension organizations of Moldova. This would allow policy makers in each organization to better understand the training needs of Moldovan extension agents in general. This study can easily be replicated throughout Moldova extension and should be repeated on a consistent basis in order to assess the changing training needs of extension agents.

2. A Delphi study identifying core organizational competencies. This would help create a list of the most important competencies, as perceived by the extension agents themselves. Competency statements in this study were based strictly on literature in the field of study, input from organizational management, and the researcher's personal

judgment. A Delphi study will assist the decision makers of ACSA in the creation of a list of core competencies within the organizational framework and continue the longitudinal development of its extension agents.

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APPENDIX A

Titlul Proiectului: Percepțiile agenţilor în Extensiune Agricolă - Necesităţile de instruire în cadrul Agenţiei Naţionale de Dezvoltare Rurală.

Sunteți invitați să luaţi parte la un studiu de cercetare condus de Matt Black, cercetător al Universităţii Texas A&M care conlucrează cu Agenţia Naţională de Dezvoltare Rurală (ACSA). Informațiile din acest formular Vă sunt oferite pentru a Vă ajuta să decideți dacă doriţi să luaţi parte în această cercetare. Dacă decideți să nu participați, nu veţi fi penalizaţi în nici-un mod, şi nu veţi pierde nici un beneficiu care l-aţi avea în mod normal.

De ce este făcut acest studiu?

Scopul acestui studiu este de a evalua necesităţile de instruire pentru perfecţionarea profesională a consultanţilor agricoli, lucrători ai Agenţiei Naţionale de Dezvoltare Rurală (ACSA).

De ce mi se cere să particip în acest studiu?

Vi se cere să participaţi în acest studiu, deoarece sunteţi angajatul Agenţiei Naţionale de Dezvoltare Rurală (ACSA).

Câţi oameni vor fi rugaţi să participe în acest studiu?

302 persoane (participanți) vor fi invitați să participe la acest studiu, de pe întregul teritoriu al Republicii Moldova.

Care sunt alternativele de a participa în acest studiu?

Nu există alternative de a participa în acest studiu, cu toate acestea nu sunteţi obligat să participaţi.

Ce mi se va cere să fac în acest studiu?

Vi se va cere să completaţi un chestionar. Participarea Dumneavoastră la acest studiu va dura până la 15 minute și include o completare a chestionarului.

Există riscuri în participare?

Lucrurile pe care le veţi face nu sunt mai riscante decât lucrurile care le faceţi de zi cu zi.

Deşi cercetătorii au încercat să evite riscurile, există un risc de încălcare a confidențialităţii.

Vor exista costuri pentru mine?

În afară de timp, nu există costuri pentru a lua parte la acest studiu.

Voi fi plătit pentru a participa în acest studiu? Nu veţi fi plătit pentru a participa în acest studiu.

Vor fi informaţiile din acest studiu păstrate privat?

(dacă se aplică) Înregistrările acestui studiu vor fi păstrate privat . Nici un fel de identificatori ai Dumneavoastră din acest studiu nu vor fi incluşi în orice fel de raport care ar putea fi publicat. Înregistrările de cercetare vor fi stocate în siguranță și numai Matt Black si Dr. James Lindner va avea acces la ele.

Informații despre Dumneavoastră vor fi stocate în fișiere de calculator protejate cu o parolă.

Informații despre Dumneavoastră vor fi păstrate confidențial în măsura în care este permis sau cerut de lege. Persoanele care au acces la informațiile Dumneavoastră include: Cercetătorul principal și personalul de studiu de cercetare. Reprezentanții agențiilor de reglementare, cum ar fi Office of Human Research Protections (Oficiul de Protecției a cercetării Omului) și entitățile , cum ar fi Texas A&M University Human Subjects Protection Program (Universitatea Texas A&M Program de protecție a subiecților umani) pot avea acces la înregistrările pentru a Vă asigura că studiul este administrat corect și că informațiile sunt colectate în mod corespunzător .

Informații despre Dumneavoastră vor fi păstrate confidențial în măsura în care este permis sau cerut de lege.

Pe cine pot contacta pentru mai multe informaţii?

Puteți contacta Cercetătorul principal, Dr. James Lindner, referitor la întrebări, sugestii şi

reclamaţii ce ţin de această cerere, la numărul de telefon: +01(979) 458-2701
sau la adresa de e-mail: j-lindner@tamu.edu.

Puteți contacta, de asemenea, directorul de protocol, Matt Black la numărul de telefon: +01(435) 659-0496 sau la adresa de e-mail: mattbl09@neo.tamu.edu.

Pentru întrebări despre drepturile Dumneavoastră în calitate de participant la cercetare, de asemenea întrebări, sugestii şi reclamaţii puteți suna la oficiul Universităţii Texas A&M Program de Protecție a Subiecților Umani) la numărul de telefon +01(979) 458-4067 sau contactaţi-ne la adresa de e-mail: irb@tamu.edu.

TAMU IRB#2013-0789 Approved: 01/14/2014 Expiration Date: 01/01/2015

Ce se întâmplă dacă mă răzgândesc să particip?

Aceasta cercetare este voluntară și aveți posibilitatea de a alege să participaţi sau nu la acest studiu. Puteţi decide să nu participaţi la acest studiu sau să Vă deziceţi în orice moment. Dacă alegeți să nu participaţi în acest studiu sau Vă deziceţi, nu vor fi urmări asupra statului Dumneavoastră de angajat al Agenției Naționale de Dezvoltare Rurală. Orice informații noi descoperite cu privire la cercetare Vă vor fi puse la dispoziție. Aceste informații ar putea afecta dorința dumneavoastră de a continua participarea.

Prin completarea sondajului, aveţi permisiunea de la investigator să utilizaţi informațiile Dumneavoastră în scopuri de cercetare.

sînteți de acord?

- ○ Da
- ○ Nu

Vă rugăm să ne acordați câteva minute pentru a completa chestionarul de mai jos, în care vă rugăm să indicați abilitatea Dvs de a îndeplini sarcinile menționate și importanța acestora

pentru succesul lucrului Dvs. Chestionarul nu ar trebui să dureze mai mult de 5-10 minute și ne-ar ajuta să culegem date importante pentru succesul ACSA-ei pe teritoriul Moldovei.

Vă mulțumim anticipat pentru participare și așteptăm răspunsurile Dvs.

Vă rugăm să indicaţi aptitudinea Dvs (cât de bine completaţi o sarcină) în coloana din partea stângă şi nivelul de importanţă (cât de importantă este această sarcină pentru a avea succes în lucrul Dvs) în partea dreaptă. Selectaţi Deloc (nicio aptitudine/importanţă), Jos, Mediu, Înalt.

	Abilitatea de a îndeplini sarcina				Importanţa			
	Deloc	Jos	Mediu	Înal	Deloc	Jos	Mediu	Înalt
Înţeleg viziunea ACSA	○	○	○	○	○	○	○	○
Înţeleg misiunea ACSA	○	○	○	○	○	○	○	○
Înţeleg structura organizaţională a ACSA-ei	○	○	○	○	○	○	○	○
Pot să identific politica specifică ariei mele de responsabilitate.	○	○	○	○	○	○	○	○
Înţeleg politica ACSA-ei	○	○	○	○	○	○	○	○
Înţeleg procedurile de consiliere								

Vă rugăm să indicaţi aptitudinea Dvs (cât de bine completaţi o sarcină) în coloana din partea stângă şi nivelul de importanţă (cât de importantă este această sarcină pentru a avea succes în lucrul Dvs) în partea dreaptă. Selectaţi Deloc (nicio aptitudine/importanţă), Jos, Mediu, Înalt.

	Abilitatea de a îndeplini sarcina				Importanţa			
	Deloc	Jos	Mediu	Înal	Deloc	Jos	Mediu	Înalt

Aplic subiecte relevante în viaţa de zi cu zi.	○	○	○	○	○	○	○	○
Explic subiecte relevante	○	○	○	○	○	○	○	○
Identific informaţie în baza cercetărilor	○	○	○	○	○	○	○	○
Interpretez concluziile cercetărilor	○	○	○	○	○	○	○	○
Dezvolt un program pentru subiectele relevante	○	○	○	○	○	○	○	○
Demonstrez aptitudini tehnologice legate de subiectul cercetat	○	○	○	○	○	○	○	○
Utilizez mijloace efective de predare	○	○	○	○	○	○	○	○
Culeg resurse informative pentru o varietate de domenii	○	○	○	○	○	○	○	○
Fac prezentări orale convingătoare şi clare								

Vă rugăm să indicaţi aptitudinea Dvs (cât de bine completaţi o sarcină) în coloana din partea stângă şi nivelul de importanţă (cât de importantă este această sarcină pentru a avea succes în lucrul Dvs) în partea dreaptă. Selectaţi Deloc (nicio aptitudine/importanţă), Jos, Mediu, Înalt.

	Abilitatea de a îndeplini sarcina				Importanţa			
	Deloc	Jos	Mediu	Înalt	Deloc	Jos	Mediu	Înalt
Pregătesc un plan de lucru anual	○	○	○	○	○	○	○	○
Recrutez voluntari	○	○	○	○	○	○	○	○
Supraveghez voluntarii	○	○	○	○	○	○	○	○
Evaluez programul propriu	○	○	○	○	○	○	○	○
Dezvolt un plan de marketing pentru programe	○	○	○	○	○	○	○	○
Creez un mediu deschis pentru comunicare	○	○	○	○	○	○	○	○
Scriu efectiv pentru auditoriul ţintă	○	○	○	○	○	○	○	○

Vă rugăm să indicaţi aptitudinea Dvs (cât de bine completaţi o sarcină) în coloana din partea stângă şi nivelul de importanţă (cât de importantă este această sarcină pentru a avea succes în lucrul Dvs) în partea dreaptă. Selectaţi Deloc (nicio aptitudine/importanţă), Jos, Mediu, Înalt.

	Abilitatea de a îndeplini sarcina	Importanţa

	Deloc	Jos	Mediu	Înal	Deloc	Jos	Mediu	Înalt
Folosesc cele mai recente tehnologii în domeniul comunicației	○	○	○	○	○	○	○	○
Stabilesc relații cu specialiști în domeniu	○	○	○	○	○	○	○	○
Utilizez rețele profesioniste pentru a îmbunătăți programe	○	○	○	○	○	○	○	○
Înțeleg diversitatea în extensie	○	○	○	○	○	○	○	○
Gestionez timpul eficient	○	○	○	○	○	○	○	○
Stăpânesc situațiile stresante	○	○	○	○	○	○	○	○
Stapânesc conflictele	○	○	○	○	○	○	○	○
Pun în practică elementele gândirii critice	○	○	○	○	○	○	○	○
Dezvolt relații profesionale bazate pe încredere	○	○	○	○	○	○	○	○
Gestionez mai multe sarcini								

Vă rugăm să indicaţi aptitudinea Dvs (cât de bine completaţi o sarcină) în coloana din partea stângă şi nivelul de importanţă (cât de importantă este această sarcină pentru a avea succes în lucrul Dvs) în partea dreaptă. Selectaţi Deloc (nicio aptitudine/importanţă), Jos, Mediu, Înalt.

	Abilitatea de a îndeplini sarcina				Importanţa			
	Deloc	Jos	Mediu	Înal	Deloc	Jos	Mediu	Înalt
Dezvolt abilități de audiere a informației	○	○	○	○	○	○	○	○
Înțeleg principiile de conducere	○	○	○	○	○	○	○	○
Înțeleg dinamica lucrului în grup	○	○	○	○	○	○	○	○
Inspir aptitudini de leader în alte persoane	○	○	○	○	○	○	○	○
Creez un plan pentru a-mi îmbunătăți aptitudinile de leader	○	○	○	○	○	○	○	○
Interacționez cu diferiți oameni și grupuri	○	○	○	○	○	○	○	○
Stabilesc parteneriate	○	○	○	○	○	○	○	○
Stabilesc relații cu alții din domeniul meu de lucru	○	○	○	○	○	○	○	○
Împărtășesc experiențele mele cu alți agenți	○	○	○	○	○	○	○	○
Identific posibilități pentru dezvoltarea profesională								

Sunteți bărbat sau femeie?

- Barbat
- Femeie

Ce vârstă aveți?

Care este cel mai înalt grad de învățământ pe care îl deținești? (diplomă bachelor's, masterat, doctorat).

APPENDIX B

Extension Competency

Administration:

- Manage time effectively
- Write realistic goals for the extension program

Communication:

- Establish communication among the extension staff.
- The ability to transfer and receive information effectively

Program planning:

- Determine objectives and goals for the extension work
- Setting further goals when achieving the previous
- Prepare an annual program of work

Subject Matter Expertise:

- Professional knowledge and skills
- Technical proficiency

Maintaining Professionalism:

- Identify opportunities for professional improvement
- Attend regional/local training and seminars

Human Relations:

- Successful interaction with diverse individuals and groups creating partnerships, networks, and dynamic human systems
- Sharing the experience between extension agents

Technological development:

- Basic knowledge of computer
- Basic knowledge of internet surfing

Professionalism:

- Work ethic/image
- Balance between work and personal life

Action Orientation:

- Taking the initiative, valuing the role of positive change
- Creating a vision for the future and working diligently towards the goal

Evaluation:

- Identify problems requiring additional research
- Evaluate effectiveness and personal work performance
- Analyze reports

APPENDIX C

DATE

NAME

I am writing to ask for your participation in a survey that I am conducting with in the Agriculture, Leadership, Education, and Communication department at Texas A&M University. I am asking ACSA consultants like you, to assess your ability to perform a variety of tasks as well as how important you perceive each one of these tasks toward the success of your work.

Your responses to the survey are very important and may help in developing further training opportunities for yourself as well as other ACSA consultants.

This is a short survey and should take you no more than ten minutes to complete. Please click on the link below to go to the survey website (or copy and paste the survey link into your Internet browser).

Survey Link:

Your participation in this survey is entirely voluntary and all of your responses will be kept confidential. No personally identifiable information will be associated with your responses in any reports of this data. Should you have any further questions or comments please feel free to contact myself at Mattbl09@neo.tamu.edu or Laura Dehtear at laura101@mail.ru

I appreciate your time and consideration in completing the survey. Through participation in this study, ACSA may be able to provide impactful inservice training to you and your fellow ACSA consultants.

Thank you,

Matt Black

Graduate student at Texas A&M University

Former Moldova Peace Corps Volunteer, ACSA Leova

DATE

NAME

I recently sent you an email asking you to respond to a brief survey assessing your ability to perform a variety of tasks in your work as an ACSA consultant. I am hoping that you may be able to give a few moments of your time to help me collect important information that may help improve ACSA's ability to provide beneficial inservice training to yourself and your counterparts.

If you have already completed the survey, I really appreciate your participation. If you have not yet responded, I would like to urge you to complete the survey. I plan to end this study next week, so I wanted to email everyone who has not responded to make sure you have a chance to participate.

Please click on the link below to go to the survey website (or copy and paste the survey link into your Internet browser.

Survey Link:

Thank you in advance for completing this survey. Your responses are important!

Sincerely,

Matt Black

Graduate student at Texas A&M University

Former Moldova Peace Corps Volunteer, ACSA Leova

DATE

NAME

I understand that you are a very valued member of your organization and how valuable your spare time is throughout the year. I am hoping you may be able to give a few minutes of your time to help me collect important information that may help improve ACSA's ability to provide beneficial inservice training to yourself and your counterparts.

If you have already completed the survey, I really appreciate your participation. If you have not yet responded, I would like to urge you to complete the survey. I plan to end this study next week, so I wanted to email everyone who has not responded to make sure you have a chance to participate.

Please click on the link below to go to the survey website (or copy and paste the survey link into your Internet browser.

Survey Link:

If you would like to opt-out of the survey please click on the link below and you will be removed from the participants of this very important survey.

Thank you in advance for completing this survey. Your responses are important!

Sincerely,

Matt Black

Graduate student at Texas A&M University

Former Moldova Peace Corps Volunteer, ACSA Leova

APPENDIX D

Rankings of highest means for extension agents' ability to complete competency

Rank	Competency Statement	*f*	*M*	*SD*
1	Understand the mission of ACSA	81	3.77	.426
2	Understand the visions of ACSA	81	3.67	.474
3	Understand the organizational structure of ACSA	81	3.65	.479
4	Understand policies of ACSA	80	3.65	.480
5	Share experience between extension agents	78	3.64	.509
6	Understand workgroup dynamics	78	3.63	.512
7	Identify policies specific to your area of responsibility	80	3.63	.513
8	Identify opportunities for professional development	78	3.59	.495
9	Acquire information resources for a variety of subject areas	77	3.58	.469
10	Network with others in your area of work	78	3.58	.523
11	Interacting with diverse individuals and groups	78	3.56	.524
12	Make clear and convincing oral presentations	77	3.55	.501
13	Develop trusting professional relationships	77	3.55	.501
14	Understand leadership principles	33	3.53	.528
15	Use latest communications technology	77	3.48	.620
16	Prepare an annual plan of work	76	3.45	.661
17	Evaluate your program	73	3.42	.525
18	Understand diversity in extension	77	3.42	.522
19	Develop trusting professional relationships	77	3.40	.568
20	Manage time effectively	76	3.39	.591
21	Utilize effective teaching methods	77	3.38	.563
22	Manage conflicts	76	3.36	.647
23	Apply relevant subject matter to real life problems	77	3.35	.507
24	Nurture leadership skills in others	77	3.35	.556
25	Develop good listening skills	78	3.35	.505
26	Understand advisory procedures	80	3.33	.569
27	Manage multiple tasks	77	3.31	.645
28	Use professional network to enhance programs	76	3.30	.654
29	Explain relevant subject matter	28	3.30	.540
30	Apply critical thinking skills	77	3.30	.540
31	Demonstrate technology skills pertinent to the subject matter	76	3.29	.607
32	Manage stress	77	3.29	.604

33	Write effectively for target audience	21	3.26	.700
34	Identify research-based information	76	3.24	.608
35	Develop a plan for building personal leadership skills	78	3.22	.573
36	Create partnerships	78	3.19	.582
37	Develop a program on relevant subject matter	77	3.12	.684
38	Interpret research findings	75	3.07	.600
39	Develop a marketing plan for programs	75	2.99	.557
40	Manage Volunteers	73	2.42	.956
41	Recruit Volunteers	75	2.41	.871

APPENDIX E

Rankings of the highest means for perceived importance

Rank	Competency Statement	*f*	*M*	*SD*
1	Identify opportunities for professional development	78	3.82	.386
2	Develop trusting professional relationships	77	3.82	.388
3	Understand the visions of ACSA	81	3.81	.391
4	Understand the mission of ACSA	81	3.81	.391
5	Make clear and convincing oral presentations	77	3.77	.426
6	Understand workgroup dynamics	78	3.74	.468
7	Network with others in your area of work	78	3.74	.439
8	Understand the organizational structure of ACSA	80	3.73	.449
9	Identify policies specific to your area of responsibility	80	3.71	.455
10	Share experience between extension agents	78	3.71	.459
11	Understand policies of ACSA	80	3.69	.466
12	Manage time effectively	77	3.66	.503
13	Prepare an annual plan of work	76	3.66	.505
14	Use latest communications technology	77	3.65	.507
15	Understand leadership principles	78	3.63	.512
16	Acquire information resources for a variety of subject areas	77	3.62	.491
17	Use professional network to enhance programs	77	3.62	.565
18	Utilize effective teaching methods	77	3.61	.491
19	Understand diversity in extension	77	3.61	.491
20	Manage conflicts	76	3.58	.548
21	Develop good listening skills	78	3.58	.512
22	Interacting with diverse individuals and groups	78	3.58	.570
23	Apply relevant subject matter to real life problems	77	3.57	.498
24	Manage stress	77	3.56	.525
25	Explain relevant subject matter	77	3.55	.501
26	Evaluate your program	73	3.52	.556
27	Develop trusting professional relationships	77	3.52	.620
28	Nurture leadership skills in others	77	3.52	.553
29	Identify research-based information	76	3.47	.557
30	Demonstrate technology skills pertinent to the subject matter	76	3.47	.599
31	Write effectively for target audience	76	3.47	.577
32	Develop a plan for building personal leadership skills	78	3.45	.595

33	Create partnerships	78	3.45	.617
34	Apply critical thinking skills	77	3.43	.524
35	Understand advisory procedures	80	3.40	.587
36	Manage multiple tasks	77	3.38	.650
37	Develop a marketing plan for programs	75	3.31	.615
38	Interpret research findings	75	3.29	.632
39	Develop a program on relevant subject matter	77	3.25	.610
40	Recruit Volunteers	75	2.81	.817
41	Manage Volunteers	73	2.79	.849

APPENDIX F

Rankings of the 10 highest MWDS scores

Rank	Competency Statement	[a]*MWDS*
1	Use professional network to enhance programs	1.14
2	Manage time effectively	1.14
3	Recruit Volunteers	1.13
4	Develop a marketing plan for programs	1.06
5	Develop trusting professional relationships	1.04
6	Manage Volunteers	1.02
7	Manage stress	0.97
8	Create partnerships	0.88
9	Identify opportunities for professional development	0.88
10	Explain relevant subject matter	0.87
11	Utilize effective teaching methods	0.84
12	Make clear and convincing oral presentations	0.83
13	Develop good listening skills	0.83
14	Identify research-based information	0.82
15	Develop a plan for building personal leadership	0.80
16	Manage conflicts	0.79
17	Apply relevant subject matter to real life problems	0.79
18	Prepare an annual plan of work	0.77
19	Interpret research findings	0.75
20	Write effectively for target audience	0.72
21	Understand diversity in extension	0.70
22	Demonstrate technology skills pertinent to the	0.64
23	Network with others in your area of work	0.62
24	Use latest communications technology	0.62
25	Nurture leadership skills in others	0.59
26	Understand the visions of ACSA	0.57
27	Apply critical thinking skills	0.45
28	Understand workgroup dynamics	0.43
29	Develop a program on relevant subject matter	0.42
30	Develop trusting professional relationships	0.41
31	Understand leadership principles	0.37
32	Evaluate your program	0.34
33	Identify policies specific to your area of	0.32
34	Understand advisory procedures	0.26

35	Share experience between extension agents	0.24
36	Manage multiple tasks	0.22
37	Understand the mission of ACSA	0.19
38	Acquire information resources for a variety of	0.14
39	Understand policies of ACSA	0.14
40	Understand the organizational structure of ACSA	0.09
41	Interacting with diverse individuals and groups	0.05

Note. [a]Recall, MWDS identifies order of prioritized list.

APPENDIX G

MWDS rankings base on male responses

Rank	Competency Statement	[a]*MWDS*
1	Manage time effectively	1.17
2	Develop a marketing plan for programs	1.14
3	Develop trusting professional relationships	1.09
4	Apply relevant subject matter to real life problems	1.00
5	Recruit Volunteers	0.99
6	Explain relevant subject matter	0.99
7	Use professional network to enhance programs	0.98
8	Manage Volunteers	0.92
9	Utilize effective teaching methods	0.89
10	Identify research-based information	0.85
11	Make clear and convincing oral presentations	0.85
12	Interpret research findings	0.84
13	Manage stress	0.82
14	Prepare an annual plan of work	0.80
15	Develop good listening skills	0.77
16	Manage conflicts	0.76
17	Create partnerships	0.74
18	Develop a plan for building personal leadership	0.67
19	Understand the visions of ACSA	0.65
20	Use latest communications technology	0.59
21	Write effectively for target audience	0.58
22	Understand diversity in extension	0.58
23	Identify opportunities for professional development	0.54
24	Understand workgroup dynamics	0.53
25	Network with others in your area of work	0.53
26	Demonstrate technology skills pertinent to the	0.52
27	Nurture leadership skills in others	0.52
28	Evaluate your program	0.49
29	Develop a program on relevant subject matter	0.47
30	Understand leadership principles	0.46
31	Develop trusting professional relationships	0.44
32	Identify policies specific to your area of	0.42
33	Apply critical thinking skills	0.30
34	Understand the mission of ACSA	0.30

35	Understand advisory procedures	0.19
36	Understand the organizational structure of ACSA	0.14
37	Share experience between extension agents	0.13
38	Manage multiple tasks	0.12
39	Acquire information resources for a variety of	0.07
40	Interacting with diverse individuals and groups	0.06
41	Understand policies of ACSA	-0.07

Note. [a]Recall, MWDS identifies order of prioritized list.

MWDS rankings base on female responses

Rank	Competency Statement	[a]*MWDS*
1	Identify opportunities for professional development	1.80
2	Use professional network to enhance programs	1.59
3	Manage stress	1.38
4	Recruit Volunteers	1.36
5	Manage Volunteers	1.32
6	Create partnerships	1.26
7	Write effectively for target audience	1.14
8	Develop a plan for building personal leadership	1.11
9	Manage time effectively	1.07
10	Demonstrate technology skills pertinent to the	1.05
11	Understand diversity in extension	1.03
12	Develop good listening skills	0.97
13	Make clear and convincing oral presentations	0.93
14	Develop trusting professional relationships	0.91
15	Develop a marketing plan for programs	0.90
16	Utilize effective teaching methods	0.88
17	Manage conflicts	0.86
18	Network with others in your area of work	0.86
19	Apply critical thinking skills	0.84
20	Nurture leadership skills in others	0.79
21	Understand policies of ACSA	0.72
22	Prepare an annual plan of work	0.72
23	Identify research-based information	0.69
24	Use latest communications technology	0.69
25	Interpret research findings	0.64
26	Understand the organizational structure of ACSA	0.55

27	Explain relevant subject matter	0.53
28	Manage multiple tasks	0.52
29	Develop a program on relevant subject matter	0.51
30	Understand advisory procedures	0.50
31	Share experience between extension agents	0.50
32	Acquire information resources for a variety of	0.37
33	Understand the visions of ACSA	0.36
34	Apply relevant subject matter to real life problems	0.36
35	Develop trusting professional relationships	0.34
36	Understand workgroup dynamics	0.17
37	Understand leadership principles	0.16
38	Understand the mission of ACSA	0.00
39	Identify policies specific to your area of	0.00
40	Evaluate your program	0.00
41	Interacting with diverse individuals and groups	0.00

Note. [a]Recall, MWDS identifies order of prioritized list.

MWDS rankings based on responses from agents only holding a Bachelor's degree

Rank	Competency Statement	[a]*MWDS*
1	Develop a marketing plan for programs	2.16
2	Recruit Volunteers	2.11
3	Manage Volunteers	1.63
4	Use professional network to enhance programs	1.58
5	Identify research-based information	1.50
6	Demonstrate technology skills pertinent to the	1.50
7	Identify opportunities for professional development	1.45
8	Create partnerships	1.44
9	Write effectively for target audience	1.42
10	Manage time effectively	1.41
11	Apply relevant subject matter to real life problems	1.33
12	Nurture leadership skills in others	1.14
13	Utilize effective teaching methods	0.87
14	Manage conflicts	0.82
15	Develop trusting professional relationships	0.82
16	Understand diversity in extension	0.80
17	Manage stress	0.77
18	Develop trusting professional relationships	0.75

19	Develop a program on relevant subject matter	0.71
20	Apply critical thinking skills	0.68
21	Develop a plan for building personal leadership	0.60
22	Develop good listening skills	0.58
23	Prepare an annual plan of work	0.55
24	Use latest communications technology	0.54
25	Interacting with diverse individuals and groups	0.46
26	Interpret research findings	0.43
27	Make clear and convincing oral presentations	0.39
28	Network with others in your area of work	0.37
29	Manage multiple tasks	0.30
30	Understand the mission of ACSA	0.30
31	Identify policies specific to your area of	0.28
32	Share experience between extension agents	0.25
33	Understand workgroup dynamics	0.24
34	Acquire information resources for a variety of	0.18
35	Understand the visions of ACSA	0.18
36	Understand leadership principles	0.17
37	Understand policies of ACSA	0.13
38	Explain relevant subject matter	0.09
39	Understand advisory procedures	0.04
40	Understand the organizational structure of ACSA	0.00
41	Evaluate your program	-0.46

Note. [a]Recall, MWDS identifies order of prioritized list.

MWDS rankings based on responses from agents holding a Master's degree

Rank	Competency Statement	[a]*MWDS*
1	Develop a marketing plan for programs	1.30
2	Use professional network to enhance programs	1.27
3	Develop a program on relevant subject matter	1.22
4	Manage Volunteers	1.08
5	Develop good listening skills	0.96
6	Explain relevant subject matter	0.92
7	Recruit Volunteers	0.80

8	Develop trusting professional relationships	0.80
9	Understand diversity in extension	0.73
10	Manage time effectively	0.73
11	Apply critical thinking skills	0.72
12	Manage stress	0.71
13	Make clear and convincing oral presentations	0.65
14	Evaluate your program	0.64
15	Demonstrate technology skills pertinent to the	0.63
16	Acquire information resources for a variety of	0.63
17	Apply relevant subject matter to real life problems	0.58
18	Understand advisory procedures	0.57
19	Network with others in your area of work	0.52
20	Use latest communications technology	0.50
21	Develop a plan for building personal leadership	0.47
22	Utilize effective teaching methods	0.31
23	Understand the visions of ACSA	0.30
24	Prepare an annual plan of work	0.30
25	Identify research-based information	0.29
26	Interpret research findings	0.29
27	Write effectively for target audience	0.29
28	Create partnerships	0.25
29	Manage conflicts	0.24
30	Nurture leadership skills in others	0.24
31	Understand the mission of ACSA	0.00
32	Understand policies of ACSA	0.00
33	Develop trusting professional relationships	0.00
34	Manage multiple tasks	0.00
35	Understand leadership principles	0.00
36	Share experience between extension agents	0.00
37	Identify opportunities for professional development	0.00
38	Interacting with diverse individuals and groups	-0.24
39	Understand workgroup dynamics	-0.25
40	Understand the organizational structure of ACSA	-0.30
41	Identify policies specific to your area of	-0.30

Note. [a]Recall, MWDS identifies order of prioritized list.

MWDS rankings based on responses from agents ages 0-49

Rank	Competency Statement	[a]*MWDS*
1	Apply relevant subject matter to real life problems	1.45
2	Understand leadership principles	1.36
3	Understand diversity in extension	1.35
4	Recruit Volunteers	1.33
5	Explain relevant subject matter	1.24
6	Identify research-based information	1.20
7	Manage Volunteers	1.08
8	Utilize effective teaching methods	1.03
9	Develop a marketing plan for programs	0.91
10	Manage time effectively	0.89
11	Use professional network to enhance programs	0.87
12	Manage conflicts	0.81
13	Manage stress	0.65
14	Interacting with diverse individuals and groups	0.65
15	Make clear and convincing oral presentations	0.64
16	Prepare an annual plan of work	0.63
17	Share experience between extension agents	0.63
18	Understand the visions of ACSA	0.62
19	Acquire information resources for a variety of	0.62
20	Demonstrate technology skills pertinent to the	0.60
21	Understand advisory procedures	0.59
22	Understand workgroup dynamics	0.56
23	Develop a program on relevant subject matter	0.55
24	Develop trusting professional relationships	0.44
25	Create partnerships	0.44
26	Nurture leadership skills in others	0.43
27	Identify policies specific to your area of	0.43
28	Evaluate your program	0.41
29	Develop good listening skills	0.40
30	Write effectively for target audience	0.39
31	Apply critical thinking skills	0.39
32	Use latest communications technology	0.22
33	Understand the mission of ACSA	0.20
34	Understand policies of ACSA	0.20
35	Identify opportunities for professional development	0.20
36	Interpret research findings	0.19
37	Develop a plan for building personal leadership	0.19

38	Develop trusting professional relationships	0.00
39	Manage multiple tasks	0.00
40	Network with others in your area of work	-0.21
41	Understand the organizational structure of ACSA	-0.39

Note. [a]Recall, MWDS identifies order of prioritized list.

MWDS rankings based on responses from agents ages 50+

Rank	Competency Statement	[a]*MWDS*
1	Manage time effectively	1.38
2	Use professional network to enhance programs	1.37
3	Recruit Volunteers	1.25
4	Manage stress	1.23
5	Develop trusting professional relationships	1.12
6	Create partnerships	0.97
7	Use latest communications technology	0.96
8	Interpret research findings	0.95
9	Develop a marketing plan for programs	0.94
10	Manage Volunteers	0.93
11	Write effectively for target audience	0.92
12	Prepare an annual plan of work	0.90
13	Understand leadership principles	0.86
14	Understand workgroup dynamics	0.85
15	Make clear and convincing oral presentations	0.83
16	Interacting with diverse individuals and groups	0.83
17	Utilize effective teaching methods	0.78
18	Develop good listening skills	0.57
19	Demonstrate technology skills pertinent to the	0.57
20	Understand diversity in extension	0.57
21	Explain relevant subject matter	0.56
22	Share experience between extension agents	0.51
23	Nurture leadership skills in others	0.51
24	Apply critical thinking skills	0.50
25	Understand the visions of ACSA	0.50
26	Network with others in your area of work	0.49
27	Manage conflicts	0.48
28	Identify research-based information	0.48

29	Identify opportunities for professional development	0.47
30	Identify policies specific to your area of	0.39
31	Apply relevant subject matter to real life problems	0.39
32	Develop a program on relevant subject matter	0.35
33	Develop trusting professional relationships	0.29
34	Understand the organizational structure of ACSA	0.29
35	Evaluate your program	0.20
36	Manage multiple tasks	0.20
37	Understand the mission of ACSA	0.10
38	Understand policies of ACSA	-0.10
39	Understand advisory procedures	-0.17
40	Develop a plan for building personal leadership	-0.18
41	Acquire information resources for a variety of	-0.19

Note. [a]Recall, MWDS identifies order of prioritized list.