

Examining the Evaluation Capacity, Evaluation Behaviors, and the Culture of Evaluation
in Cooperative Extension

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Abstract

Evaluation is a burgeoning field and remains fairly young by most standards. Within Cooperative Extension, evaluation practices have been implemented at a variety of levels given that evaluation is mandatory for much of the funding Cooperative Extension receives. With evaluation in high demand, it is expected that most Extension educators are performing some levels of evaluation as a routine part of their jobs. In order to perform the required evaluations, an Extension educator must exhibit some level of knowledge and skill regarding evaluation. While much research to date has been done on the level of evaluation within the organization, there is a lack of understanding regarding the evaluation competencies that Extension educators must possess and the culture of evaluation within the organization. This study set out to examine the evaluation competencies, culture, and evaluation behaviors within Cooperative Extension. Utilizing an online survey format and quantitative methodology, a widely accepted set of evaluation competencies were examined for their importance within Cooperative Extension. A panel of 13 experts was selected to examine the competencies and it was determined that all competencies in the list were necessary for Extension educators to exhibit in their jobs. The list of competencies was then combined with a subscale regarding culture and a subscale based on the Theory of Planned Behavior (Ajzen, 1991). A total of 419 Extension educators in four Extension systems participated in the study, with 222 generating usable data for a response rate of 13%. The highest and lowest skill level for the competencies were determined by Extension educators self-reporting. Perception of importance of each competency was examined and the highest and lowest importance rankings were determined. These were compared to the rankings of importance by the expert panel. A path analysis was conducted by modifying the Theory of Planned Behavior model and multiple regression analysis. Mean weighted discrepancy scores were calculated to determine the differences in skill level and perception for each of the competencies. The subscale of culture was examined for potential areas of Evaluation Capacity Building (ECB) within the organization. Results show that while there was much agreement between the expert panel and Extension educators regarding the importance of competencies, experts ranked all competencies as important while Extension educators did not. The results of the path analysis determined intention and perceived behavioral control explained 3.9% of the variance in the evaluation behavior exhibited by skill. Subjective norm and attitude explained 11.8% of the variance within intention. Perceived behavioral control, attitude and culture accounted for 13.1% of the variance in subjective norm. Culture and perception accounted for 7.1% of the variance in attitude. Perception, program area, college major, location, training in evaluation, degree level and years of experience explained 28% of the variance within evaluation culture. Finally, recommendations for practice and future research were made based on these findings.

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Chapter 1: Introduction

Brief History of Evaluation

In the last fifty years, the field of evaluation has developed and experienced a great deal of recognition and growth (Fitzpatrick, Sanders, & Worthen, 2010; M. Patton, 2008; Tyler, 2000). This growth first began in the field of program planning (Caffarella, 2002; Merriam & Caffarella, 1999). Beginning with traditional educational planning, a need arose for more than just a test or exam to assess learning goals. A move towards tying educational objectives into assessment began in the 1930's when Ralph Tyler created a new niche within program planning, using the term "evaluation" in regards to educational assessment (Tyler, 1949, 2000). Over time the definition of evaluation broadened and expanded, leading to the development of evaluation as a field unto itself (Caffarella, 2002; Rubin, 1991; Tyler, 1949, 2000).

While fifty years may seem like a long time, evaluation as a discipline is still comparatively young by most academic standards. Evaluation is an integral part in many professions, especially those that work with grants and funding agencies, which are now requiring evidence in order to determine how funding is being utilized or evidence of change planned within the program. In order for evaluation work to be effective, individuals need to have a clear understanding and positive attitude toward the field of evaluation (Lekies & Bennett, 2011; Neuman, Shahor, Shina, Sarid, & Saar, 2013; Parkinson, 2009; Radhakrishna & Martin, 1999). Often individuals see evaluation as negative and are resistant to completing or undergoing evaluation. These attitudes can cause issues for both evaluators and the agencies requiring the evaluation. Evaluation efforts in the United States have been somewhat behind those of other countries

(Buchanan & Kuji-Shikatani, 2014; King & Stevahn, 2015; Melkers & Roessner, 1997; Seidling, 2015). For example, Canada has far exceeded the United States by forming a branch of government specifically dedicated to evaluative work.

Evaluation in Cooperative Extension

The first mandates for Cooperative Extension to engage in evaluation and assessment came from some of the earliest legislation governing the organization, the 1914 Smith-Lever act (SeEVERS, Graham, Gamon, & Conklin, 1997). Throughout the next century the organization would be compelled to engage in a variety of accountability measures, proving it's worth to the federal government, stakeholders and the communities it serves (Baughman, Boyd, & Kelsey, 2012; GPRA, 1993, 2010; SeEVERS et al., 1997).

Cooperative Extension utilizes an objective-based evaluation approach to examine the impact of it's programs, mirroring Tyler's educational objective-based approach (Rubin, 1991; SeEVERS et al., 1997; Tyler, 1949). These objectives provide direction for the program's instruction and communicate expectations for both the participants and stakeholders (SeEVERS et al., 1997; Tyler, 1949). Traditionally, Extension utilizes Bennett's Hierarchy of Evidence in order to evaluate program objectives, utilizing questions at each level of the hierarchy in order to tie objectives to the desired level of impact (Bennett, 1975; Radhakrishna & Bowen, 2010; SeEVERS et al., 1997). Additionally, Extension utilizes a variety of data collection methods including questionnaires, focus groups, surveys, and many research-based assessment practices in order to collect programmatic data (McClure, Fuhrman, & Morgan, 2012; Radhakrishna & Martin, 1999; SeEVERS et al., 1997).

Cooperative Extension faces unique challenges in that accountability requirements place emphasis on looking back and judging rather than formative assessment purposes (A. Lamm, Israel, & Harder, 2011). These high-stake evaluations can be perceived negatively if judgment is being placed on an individual's performance in their respective role within the organization. Often in the field of Cooperative Extension, it is the extension educators themselves that are conducting this evaluation and then reporting the results to stakeholders (Baughman, Boyd, & Franz, 2012; A. Lamm et al., 2011; McClure et al., 2012).

Currently, within the field of Cooperative Extension there is an increasing demand for evaluation of programs and activities (Baughman, Boyd, & Kelsey, 2012; Duttweiler, 2008; McClure et al., 2012; Radhakrishna & Martin, 1999; Workman & Scheer, 2012). This demand is caused by a number of things including budget and administration related requests (Radhakrishna & Martin, 1999). Given that Cooperative Extension serves the public, there is a clear need for the programs to be of good quality and meet the needs of those they serve. The use of evaluation in any organization can serve to enhance program results and benefit both the stakeholders and participants of the programs.

Cooperative Extension lists evaluation as a competency that is necessary for programmatic improvement (Harder, Place, & Scheer, 2010; Seevers et al., 1997). Extension educators need to be able to not only conduct evaluation, but they must also put these evaluation results to use within their programs and provide evaluation reports to funding agencies and administration (Lamm & Israel, 2013; Lekies & Bennett, 2011; Radhakrishna & Martin, 1999). Currently, Extension educators are utilizing evaluation,

but are doing so at a low level of rigor and are only utilizing results in minimal ways (Baughman, Boyd, & Franz, 2012; Morford, Kozak, Suvedi, & Innes, 2006a; Workman & Scheer, 2012). Extension educators often report that they are unsure how their superiors were utilizing these evaluation results (Lamm & Israel, 2013; Morford et al., 2006a; Workman & Scheer, 2012). Often Extension educators were simply conducting evaluations to satisfy organizational accountability requirements (Lamm, Israel, & Harder, 2011). This lack of a connection to the value of evaluation can be detrimental to the culture and subjective norms regarding evaluation.

Several studies have examined the level at which Extension educators are utilizing evaluation and the majority have found that while evaluation is being conducted, it is only at the most basic level (Lamm et al., 2011). Extension educators are engaging in evaluative activities, but many of these are basic demographic collection and surveys after the completion of the program (Lamm et al., 2011). Extension educators have expressed a clear need for more training within the field of evaluation (Lamm et al., 2011; Radhakrishna & Martin, 1999). However, the question remains of how evaluation is defined within Cooperative Extension. Specifically, investigation is needed to determine which parts of evaluation are lacking in the field of Cooperative Extension.

The Contradiction of Evaluation Competencies

At the present time, evaluation is listed as a competency that Extension educators should possess but it is not clearly defined as to what evaluation behaviors Extension educators should exhibit (Harder et al., 2010). It appears that many Extension educators are conducting evaluations, but evidence is lacking as to exactly which evaluative skills Extension educators are expected to have (Lamm, Israel, & Harder, 2011). Evaluation

itself is a broad category and there is a need for Cooperative Extension to define which evaluation skills are needed by individuals conducting evaluations of extension programs. While evaluation is just one part of an Extension educator's job, there are a wide range of competencies for those within the profession of evaluation (King, Stevahn, Ghare, & Minnema, 2001; Stevahn, 2005). Currently, there is a set of evaluator competencies as well as a set of competencies for extension educators (Buchanan & Kuji-Shikatani, 2014; Harder et al., 2010; King et al., 2001; Stevahn, 2005). Extension educators need to be able to not only conduct evaluation, but must also put these evaluation results to use within their programs (Radhakrishna & Martin, 1999).

Competency Based Disciplines

Evaluation is not alone in acquiring a unified set of competencies for the field. By having an agreed upon set of skills and knowledge for professionals, those in need of the services can be assured that each professional will meet these standards. Many disciplines utilize competencies in order to demonstrate the abilities of their professionals. Competencies provide guidance for professional behavior, skills demonstrated, and in some cases the level at which these behaviors should be demonstrated (Dietitians of Canada, 1999; Nethery, 1981; Paquette, Mariño, Rogozan, & Léonard, 2015).

In the field of dietetics, competencies in the United States exist for practitioners governed by the Academy of Nutrition and Dietetics, whereas Canada utilizes the competencies set out by the Dietitians of Canada (Accreditation Council for Education in Nutrition and Dietetics, 2013; Dietitians of Canada, 1999). As with many fields, these competencies are similar, reflecting standards across the profession.

Competencies can help to ensure a standard within an organization, set out goals for professionals to attain, and increase the rigor of training within the profession (Accreditation Council for Education in Nutrition and Dietetics, 2013; Council on Linkages Between Academia and Public Health Practice, 2014; King et al., 2001; Nethery, 1981). Competency based professional standards can ensure quality, consistency, and promote professional development within a profession.

The Issue of Culture

Given that evaluation is still a relatively new and growing field, often misunderstandings and misgivings can occur by those unfamiliar with evaluation work. Evaluation is a critical part to many fields, especially those working with government agencies or granting organizations. For the field of Cooperative Extension, evaluating effectiveness is critical for program improvement (McClure et al., 2012; Seevers et al., 1997). As possibly the worlds largest non-formal educational enterprise, Cooperative Extension is deeply involved in educational program planning for both adult learners and youth (Seevers et al., 1997).

In addition to being capable of performing higher-level evaluations, this knowledge of evaluation can contribute to the culture of evaluation within Extension (Radhakrishna & Martin, 1999). Promoting evaluation within an organization can lead to enhanced accountability and programmatic changes (Baughman, Boyd, & Franz, 2012; Hallie Preskill & Torres, 1999; Preskill & Boyle, 2008). It is possible that by enhancing the Extension educator competencies could in turn enhance the culture of evaluation within extension, possibly leading to more robust and thorough evaluation reporting system.

Theory

According to the theory of planned behavior, a large factor in completing a behavior is perceived behavioral control (Ajzen, 1985, 1991; Madden, Ellen, & Ajzen, 1992). This perceived control depends in part on whether or not a person has, or feels that they have, the skills or competencies necessary to carry out the behavior. Examining the evaluation competencies Extension educators possess helps to unpack one layer of perceived behavioral control as it relates to evaluation behaviors of Extension educators. By better understanding the perceived behavioral control that Extension educators hold in relation to evaluation behaviors, it is possible to examine if this is a factor in the low levels of evaluation currently evident in Cooperative Extension.

While not a predominate factor in predicting future behavior, prior evaluation behavior and years of experience within the organization can shed light on evaluation skills of an Extension educator (Ajzen, 1991, 2002; Conner & Armitage, 1998; Norman & Smith, 1995). In part, some educators lack experience and expertise to carry out a more thorough or rigorous evaluation of the programs (Lamm et al., 2011; Radhakrishna & Martin, 1999). Extension educators exhibit a need for skill development in the area of evaluation and additional studies need to be done in other states to determine the need for professional development (McClure et al., 2012). In particular, educators with less than five years of experience are in need of professional development and additional training in the area of evaluation (McClure et al., 2012). Evaluation has been suggested as a major competency for extension educators of all experience levels (Harder et al., 2010). While evaluation is just one part of an extension educator's job, there are a wide range of competencies for an individual performing an evaluation, creating a challenge for both

new and experienced Extension educators (Buchanan & Kuji-Shikatani, 2014; King et al., 2001). Understanding an individual's previous experiences with evaluation can explain a portion of perceived behavioral control.

The higher levels of competencies extension educators possess also relates to their self-efficacy regarding evaluation. Self-efficacy is one's perceived belief that they are able to complete a task (Bandura, 1977, 1991). This self-efficacy stemming from skill level also relates to the perceived behavioral control regarding evaluation (Armitage & Conner, 2001). Skill level impacts self-efficacy, which in turn impacts perceived behavioral control and ultimately the behavior (Ajzen, 1985, 1991; Ajzen & Fishbein, 2005). Gaining a better understanding of the competencies and current evaluation behaviors of extension educators allows for recommendations to improve these factors. If an extension educator is asked to perform evaluation at a level above their current skill set, they most likely will have low self-efficacy regarding this task and be less likely to complete the behavior (Bandura, 1977, 1991; Kelsey, 2008). Additionally, if they do not possess the skills necessary to carry out the behavior requested, it's possible the behavior will be attempted improperly and the evaluation data could be negatively impacted (H. H. Boyd, 2009a; Guion, Boyd, & Rennekamp, 2007; Kelsey, 2008).

The skill level and competencies of extension educators contribute to the overall subjective norm regarding evaluation within the organization. Subjective norms determine how an individual perceives the behavior to be viewed by others (Ajzen, 1991; Armitage & Conner, 2001; Conner & Armitage, 1998). In this context, we examine the subjective norms of evaluation behaviors within Cooperative Extension. Currently, within Cooperative Extension there does not appear to be a high level of rigor within

evaluation (Braverman & Engle, 2009; McClure et al., 2012). Cooperative Extension administration provides the primary support for evaluation practices (McClure et al., 2012; Morford et al., 2006a; Workman & Scheer, 2012). Examining these factors more closely provides a better understanding of the general expectations and collective social expectations regarding evaluation. For example, if individuals perceive evaluation to be socially promoted by other members of the organization, then this may influence their desire and intention to complete evaluations either for their own use or in addition to those mandated by administration. This investigation of the subjective norms regarding evaluation can shed light on the culture of evaluation within Cooperative Extension.

Evaluation culture is a much-contested “buzzword” in the field of evaluation (Patton, 2010). For the purposes of this study, evaluation is defined as “the collective values, attitudes, goals, and practices that can support or hinder organizational change as related to evaluation” (Labin, Duffy, Meyers, Wandersman, & Lesesne, 2012). This cultural component ties into the theory of planned behavior since attitudes and goals related to evaluation can impact culture and in turn this culture can impact the behavior of organizational members (Ajzen & Fishbein, 2005; Fazio, 1990; Labin et al., 2012). By increasing the culture of evaluation, meaning the attitudes, goals and practices, the subjective norm should be expected to increase in proportion. These factors relating to evaluation culture can impact the subjective norms and attitude that in turn impact an individual’s likelihood of performing a behavior.

Motivation is a significant factor in behavior. Individuals that are more motivated, either for internal or external reasons, tend to be more likely to complete a behavior (Ajzen & Fishbein, 2005; Fazio, 1990; Morford, Kozak, Suvedi, & Innes,

2006b). Within Cooperative Extension, motivation to perform evaluation behaviors appears to mainly be top-down, coming from administration and federal requirements (Baughman, Boyd, & Kelsey, 2012; GPRA, 1993, 2010; Morford et al., 2006a). This motivational factor can contribute to an individual's intention to complete a behavior. Motivation for much of Cooperative Extension stems from the need to prove programmatic value to external funding sources (Baughman, Boyd, & Franz, 2012; Baughman, Boyd, & Kelsey, 2012; Lamm et al., 2011; Lamm, Israel, & Diehl, 2013; McClure et al., 2012; Morford et al., 2006a). These external motivators greatly impact the drive for increased evaluation behaviors within the organization.

Attitude regarding a particular behavior can impact the subjective norm, perceived behavioral control and intention to complete a behavior (Conner & Armitage, 1998; Daigle, Hrubes, & Ajzen, 2002). An individual's attitude towards evaluation behaviors is a critical component in understanding intention and the resulting behavior (Ajzen, 1991, 2003; Ajzen & Fishbein, 1969). As individuals, we are unlikely to engage in activities when we have a negative attitude regarding the activities. Examination of the overall attitude towards evaluation within Cooperative Extension must to be conducted in order to increase the evaluation behaviors within the organization.

Beliefs can play a role in an individual's attitude, perceived control, and how an individual views the social desirability of a behavior (Ajzen, 2006; Ajzen & Fishbein, 2005; Conner & Armitage, 1998). An individual's belief about the task of evaluation or how the evaluation results will be utilized can determine the likelihood of behavioral performance (Ajzen & Fishbein, 2005; Ajzen & Madden, 1986; Whitehall, Hill, & Koehler, 2011). Beliefs regarding the behavior can impact ones attitude toward the

behavior (Ajzen, 1991; Daigle et al., 2002; Whitehall et al., 2011). If an individual believes a behavior will provide a desirable outcome, they may have a more positive attitude toward the behavior. Similarly, individuals that view a behavior as easy for them to complete due to certain skills they possess or past experience they have had, may be more likely to feel they are capable of carrying out the behavior in question. These beliefs of capability can influence an individual's control beliefs regarding the behavior (Ajzen, 2006; Ajzen & Fishbein, 2005). These beliefs can also influence one's attitude regarding the behavior as well as the subjective norm and perceived behavioral control (Ajzen & Fishbein, 2005; Conner & Armitage, 1998). If an individual believes the behavior has value, can increase their social status, or can in some way benefit them, then this belief can increase the intention to perform the behavior (Ajzen & Fishbein, 2005; Ajzen & Madden, 1986; Conner & Armitage, 1998).

Attitude, perceived behavioral control, and subjective norms play a role in intention to perform a behavior (Ajzen, 1991; Ajzen & Fishbein, 2005; Conner & Armitage, 1998; Orbeil, Hodgkins, & Sheeran, 1997). This intention can be a critical component in completion of a behavior. Some research suggests that setting implementation intentions can enhance the likelihood of completing a behavior (Conner & Armitage, 1998; Gollwitzer, 1999; Gollwitzer & Sheeran, 2006; Orbeil et al., 1997). Implementation intentions involve setting and time and place to complete the behavior (Orbeil et al., 1997). Often within Cooperative Extension, evaluations are mandatory and this time and place to complete the evaluation will be externally imposed by administration or governmental powers (Baughman, Boyd, & Kelsey, 2012; GPRA, 1993, 2010; McClure et al., 2012). If an individual has an intention to perform the

behavior as well as some form of deadline, either internally or externally imposed, the behavior will be more likely to occur (Gollwitzer & Sheeran, 2006; Orbeil et al., 1997).

Utilizing the theory of planned behavior, it is possible to examine and explain the existing evaluation behaviors and evaluation culture within Cooperative Extension. These behaviors are impacted by the competencies of extension educators as competencies impact self-efficacy and perceived behavioral control (Ajzen, 1991; Bandura, 1977; Morford et al., 2006a). The motivational factors, both internal and external, impact perceived behavioral control (Ajzen & Fishbein, 2005). Attitude and subjective norm are intertwined with the concept of evaluation culture and impact the overall behavioral process (Armitage & Conner, 2001; Conner & Armitage, 1998). By enhancing understanding of this baseline of evaluation behavior and culture within Cooperative Extension as well as the competencies and culture, recommendations were made to enhance the evaluation processes of the organization, thereby benefiting stakeholders, funding agencies, and the communities served by Cooperative Extension. It is for these reasons, that establishing a baseline of evaluation behaviors within Cooperative Extension is critical to the task of enhancing evaluation within the organization.

Purpose and Objectives

The primary purpose of this study was to examine the evaluator competencies based on the Canadian Evaluation Society Competencies for Canadian Evaluation Practice and determine which evaluation competencies extension educators should possess (Buchanan & Kuji-Shikatani, 2014). The Canadian competencies were chosen, as these are the most current and widely accepted in the field of evaluation in North

America, given that the United States does not have a national list of agreed-upon competencies (King et al., 2001; Melkers & Roessner, 1997; Seidling, 2015). The second part of the study was to determine which competencies the educators do possess and for which competencies were there perceived needs for training or improvement. Finally, the study examined the overall behavior and culture of evaluation within Cooperative Extension and created recommendations for improving the evaluation culture and practices within Extension.

The objectives of this study are as follows:

1. Identify the accepted evaluation competencies Cooperative Extension educators should be able to demonstrate in their professional work.
2. Identify which evaluation competencies Cooperative Extension educators currently recognize that they practice in their professional work.
3. Identify the evaluation competencies that are perceived as important within the Extension organization.
4. Identify those factors of the Theory of Planned Behavior that influence evaluation behavior and culture within Cooperative Extension.
5. Propose Evaluation Capacity Building recommendations within Cooperative Extension to increase evaluation competencies, behaviors and culture.

Researcher Stance

In the field of evaluation, I must be cognizant of my predisposition to think along empirical lines and realize that not all will follow my logic. This is especially important when working with stakeholders and program participants. In my role as an evaluator or a researcher in the field of evaluation, I must consider the background, lived experiences,

and realities of the individuals involved with the program and how these contrast with my own. This sometimes may be seen as a simple difference of opinion, but can also take shape as a major roadblock in the evaluation process. I understand that I tend to take a more cut and dry approach which is somewhat atypical in social sciences. It is imperative that I keep in mind how my epistemology and ontology impacts my work in research and in evaluation.

Within the field of evaluation, understanding the epistemology of stakeholders, organization members, and clients is critical to accurate evaluation and communication (Greene, 2006; M. Patton, 2008). The reasoning behind evaluation's value, use, and design can be impacted by the epistemology of the stakeholders and other organizational members involved with the evaluation process (Greene, 2006; Patton, 2008; Teddlie & Tashakkori, 2009). An individual's epistemology can also impact the way in which an individual carries out or interprets the results of an evaluation (Greene, 2006; Patton, 2008; Teddlie & Tashakkori, 2009).

The methodology of research as well as evaluation must be determined by the question asked, not be guided by the researcher's preference (Teddlie & Tashakkori, 2009). With evaluations, the needs and questions of the program directors and stakeholders must be considered (O'Sullivan, 2012; Patton, 2008). If the stakeholders see a different need for the evaluation than the evaluator, this could cause conflict in the evaluation process. The role of the evaluator is somewhat more complex as compared to the researcher, as they must both perform a quality evaluation, and meet the demands of a second "voice" in the process.

For this study, the researcher followed guidelines set forth on creating scales based on the Theory of Planned Behavior (Ajzen, 2011; Francis, 2004). In utilizing these guidelines when creating a scale, the researcher must attempt to be objective in deciding the type and context of questions. Additionally, in analyzing the data for outliers and inconsistencies the researcher must make judgment calls that ultimately reflect their epistemology.

Need for Study

Evaluators and agencies that require evaluation can better convey the need for these evaluative practices by increasing their understanding of evaluation competencies within the organization, evaluation behaviors of the individuals involved, and the overall culture of evaluation. Gaining insight into these factors can help an organization convey the need for evaluation to staff and subsequently promote higher quality and more accurate evaluations. The results from this study can be used to train employees and extension agencies and make recommendations for individuals carrying out evaluations so that a better understanding of the work can be achieved and therefore individuals engaging in evaluation are able to do so at a higher level.

Definition of Terms

For the purpose of this study the following terms are defined.

Evaluation Competencies: Competencies accepted in the field of evaluation set out by Buchanan, H., & Kuji-Shikatani (2014).

Evaluation Culture: The collective values, attitudes, goals, and practices that can support or hinder organizational change as related to evaluation (Labin et al., 2012).

Extension Educator: Any member of Cooperative Extension working to carry out programs and evaluations of these programs.

Subjective Norm: Social factors relating to how an individual perceives the social desirability of the behavior within the context that the behavior is expected to be exhibited (Ajzen, 1991).

Competencies: Any set of skills or qualifications set forth by an organization as a standard for all practitioners.

Administrator: Any individual within Cooperative Extension that supervises more than one other Extension Educator

Evaluation Capacity Building (ECB): An intentional process utilized by an organization to increase individual motivation, knowledge, and skills and to enhance the ability to conduct or use evaluation (Labin et al., 2012).

Summary

The field of evaluation has developed out of its roots in educational program planning (Caffarella, 2002; Rubin, 1991; Tyler, 1949). Evaluation is a necessary part of many professions, often mandated by administration or funding agencies (Buchanan & Kuji-Shikatani, 2014; Dietitians of Canada, 1999; GPRA, 1993, 2010; Paquette et al., 2015). This can result in evaluation being viewed as an added responsibility, rather than a tool for improvement (Baughman, Boyd, & Franz, 2012; Lamm & Israel, 2013; Neuman et al., 2013; M. Patton, 2008). Within Cooperative Extension, evaluation is an integral part of funding justification and is required for most Extension educators working with program planning (Baughman, Boyd, & Kelsey, 2012; Morford et al., 2006b). While evaluation is a requirement for those working within the organization, the

precise evaluation skills or competencies are not yet fully specified (Boyd, 2009b; Braverman & Engle, 2009; M. Q. Patton, 2008). Evaluation competencies do exist, with the Canadian Evaluation Society competencies being the most widely accepted in North America (Kuji-Shikatani, McDavid, Cousins, & Buchanan, 2012). Examining the intersection of these competencies within Cooperative Extension provides insight for the needs of today's Extension educators as well as the culture of evaluation within the organization. Evaluation culture takes it to consideration the attitudes and beliefs regarding evaluation within the organization (Labin et al., 2012). Utilizing the Theory of Planned Behavior, evaluation competencies, culture, attitude, subjective norms, behavioral intentions and perceived behavioral control were examined along with Extension variables including years of experience and prior training in evaluation (Ajzen, 1991; Ajzen & Madden, 1986; Beck & Ajzen, 1991).

Chapter 2: Review of Literature

Evaluation Defined

In the context of Cooperative Extension, evaluation can be simply defined as a “systematic process of determining the worth of a person, product or program” (Seevers et al., 1997). Traditionally the field of evaluation has its roots in educational program planning (Caffarella, 2002; Rubin, 1991; Tyler, 1949). Tyler’s use of the term “evaluation” brought a new light to traditional educational assessment, moving from basic questioning of students to tying assessment to learning objectives (Tyler, 1949; Tyler, 2000). Today’s program evaluation utilizes inquiry, provides judgment methods, determines criteria, collects relevant information and assists with determining value, quality and significance (Fitzpatrick et al., 2010).

Evaluation Competencies

The United States does not currently have a national set of standardized competencies for evaluators, however the Canadian Evaluation Society has developed a set of standards that are widely accepted and researched within the field (Buchanan & Kuji-Shikatani, 2014; Ghore, 2006; King et al., 2001; Kuji-Shikatani et al., 2012; Melkers & Roessner, 1997; Stevahn, 2005). This set of evaluation competencies outlines the basic skills and abilities an individual taking on the task of evaluation work should be able to demonstrate (Buchanan & Kuji-Shikatani, 2014; King et al., 2001; Kuji-Shikatani, 2015; Stevahn, 2005).

Although the United States does not have an agreed-upon list of competencies there has been much discussion as of late regarding the formalization of such a list (Altschuld & Engle, 2015; King & Stevahn, 2015; LaVelle & Donaldson, 2015; Seidling,

2015). The need to define the competencies or qualifications of an evaluator stems from educational programs that can contribute to the future of the field (LaVelle & Donaldson, 2015). Evaluation is often referred to as a trans-discipline, with some individuals operating solely as evaluators and others that conduct evaluation as a portion of their role within their specific field (LaVelle & Donaldson, 2015). A more formalized and accepted set of competencies can provide a basis for education of evaluators as well as those who do evaluative work within their given field (King & Stevahn, 2015; King et al., 2001; LaVelle & Donaldson, 2015; Seidling, 2015). While many countries do have a formalized set of evaluator competencies, the United States is still weighing the options (Altschuld & Engle, 2015; King & Stevahn, 2015; LaVelle & Donaldson, 2015; Seidling, 2015).

Within the United States, the Cooperative Extension system lists evaluation as a competency that is critical for programmatic improvement (Harder et al., 2010). Evaluation is an important skill for Extension educators to demonstrate and has been a recognized piece of conducting programmatic work in Extension for over 15 years (Boyd, 2009a; Lamm, Israel, & Diehl, 2013; Seevers et al., 1997; Tyler, 1949). Extension educators need to be able to not only conduct evaluation but then they must also put these evaluation results to use within their programs (Radhakrishna & Martin, 1999).

These separate competency lists clearly demonstrate that Extension educators need to demonstrate some capacity for evaluation. However, simply listing evaluation as a competency does not address which facets of evaluation behavior are lacking, which Extension educators currently excel in, or how these skills are impacting their current

work. There is a clear need to determine what competencies within evaluation are necessary for Extension educators, which skills are present, which are perceived as important, and which evaluation skills may not be necessary for Extension educators.

Evaluation Behaviors in Cooperative Extension

Much has been discussed of late regarding the evaluation behaviors of Cooperative Extension educators (Lamm, Israel, & Harder, 2011; Lamm & Israel, 2013; Lamm et al., 2013; McClure, Fuhrman, & Morgan, 2012; Morford, Kozak, Suvedi, & Innes, 2006; Radhakrishna & Martin, 1999; Workman & Scheer, 2012). Much of this research reports that while Extension educators are performing evaluations, they are often only doing enough to get by and their evaluation behaviors remain at a low level of complexity. These basic evaluation activities are not enough to meet the ever increasing demands of stakeholders and governmental agencies that provide support and funding for Cooperative Extension (Baughman, Boyd, & Kelsey, 2012, 2012; GPRA, 1993, 2010). This study proposes the utilization of the theory of planned behavior to examine these desired evaluation behaviors within Cooperative Extension by examining the competencies needed to conduct these evaluations as well as the culture of evaluation in Cooperative Extension.

Currently, Extension educators are utilizing evaluation, but are doing so at a very low level of rigor and are only utilizing results in minimal ways, typically collecting demographic or other basic participant information (Harder et al., 2010; Lamm et al., 2011; Lamm et al., 2013). Extension educators have often reported that they are unsure how their superiors were utilizing these evaluation results (Lekies & Bennett, 2011). Often Extension educators are simply conducting evaluations to satisfy organizational

accountability requirements (Lamm et al., 2011). It has been reported that training is needed in evaluation, but there is not a clear definition of which evaluation skills all Extension educators should be trained on (Guion et al., 2007; Kelsey, 2008; Rodgers, Hillaker, Haas, & Peters, 2012).

In part, some educators lack experience and expertise to carry out a more thorough or rigorous evaluation of the programs (Lamm et al., 2011; Radhakrishna & Martin, 1999). Extension educators exhibit a need for skill development in the area of evaluation and additional studies need to be done in other states to determine the need for professional development (McClure et al., 2012). In particular, educators with less than five years of experience are in need of professional development and additional training in the area of evaluation (McClure et al., 2012). Evaluation has been suggested as a major competency for Extension educators (Harder et al., 2010). While evaluation is just one part of an Extension educator's job, there are a wide range of competencies for an individual performing an evaluation (King et al., 2001). How do Extension educators measure up on these competencies? Additional research is needed on these competencies and the study needs to be broadened to include a more representative sample of all types of evaluative work (King et al., 2001).

Competencies Across Disciplines

Many fields have developed and embraced a unified set of competencies for their relative needs. Having this agreed upon set of skills and knowledge for professionals, those in need of the services can be assured that each professional meets these standards. Many disciplines utilize competencies in order to demonstrate the abilities of their professionals. The utilization of competencies provides guidance for professional

behavior, skills and abilities, and in some cases the level at which these behaviors should be performed (Dietitians of Canada, 1999; Nethery, 1981; Paquette et al., 2015).

For example, the field of dietetics utilizes competencies for practitioners governed by the Academy of Nutrition and Dietetics based in the United States (Accreditation Council for Education in Nutrition and Dietetics, 2013). In the same field of dietetics, Canada utilizes the competencies set out by the Dietitians of Canada (Dietitians of Canada, 1999). Public Health professionals in the United States are governed by a set of competencies as well (Council on Linkages Between Academia and Public Health Practice, 2014). These competencies are set forth to provide standards of skill for professionals in the field. Additionally, they provide guidance for professional development and serve as a reference for the development of educational materials (Council on Linkages Between Academia and Public Health Practice, 2014). These competencies undergo periodic review in order to remain current with practices and technological advancements (Council on Linkages Between Academia and Public Health Practice, 2014). As with many fields, these competencies are similar, reflecting standards across the profession although nuanced differences can be found between the two countries.

Competencies such as these can help to ensure a standard within an organization, set out goals for professionals to attain, and increase the rigor of training within the profession (Accreditation Council for Education in Nutrition and Dietetics, 2013; Council on Linkages Between Academia and Public Health Practice, 2014; King et al., 2001; Nethery, 1981). Competency based professional standards can ensure quality, consistency, and promote professional development within a profession. By setting forth

an accepted standard, fields such as evaluation, public health, and others can ensure that their professionals are representing the discipline equally across the country.

Evaluation Culture

A key part of increasing an organization's capacity for evaluation lies with the evaluative culture of that organization (Bourgeois & Cousins, 2013). The existing structure and characteristics of the organization such as attitudes towards evaluation, leadership, and communications greatly impact the ability and level at which individuals will perform evaluations, thereby driving the evaluative culture of the organization (Labin et al., 2012; Preskill & Boyle, 2008). There has not yet been significant research on the culture of evaluation within Cooperative Extension. Thus far, research has focused on the amount of evaluation the organization engages in and at what level (Braverman & Engle., 2009; Lamm et al., 2013; McClure et al., 2012). The leaders within Cooperative Extension, in particular, can work to impact this culture and create an environment more supportive of evaluation (Arnold, 2006; Lamm & Israel, 2011).

While the concept of "evaluation culture" is used throughout evaluation literature, as Patton suggests, it is in danger of becoming a meaningless phrase (Patton, 2010). By focusing on both defining and researching the culture of evaluation within Cooperative Extension this study strives to add value and credibility to this area of research. Without closely examining this construct, it will continue to lack importance and credibility in the profession (Patton, 2010). Having a culture of evaluation is akin to Preskill's "social epidemic" of evaluation in that if developed, it will spread throughout the organization and further evaluation capacity and practices in each branch or department.

For the purposes of this study, the researchers utilized the definition written by Labin et al. which defines evaluation culture as “the collective values, attitudes, goals, and practices that can support or hinder organizational change as related to evaluation” (Labin et al., 2012). This definition reminds us to take a critical look at not just evaluation behaviors within an organization, but the factors that support and motivate those behaviors, both positive and negative. If individuals within the organization do not value evaluation or have a positive attitude toward evaluation, it is highly likely that evaluative work will be met with resistance. Attitude, past experiences, shared beliefs, leadership, subjective norm, communication and individual self-efficacy play a role in the culture of evaluation within an organization by impacting the practices and goals of the organization (H. Boyd, 2009; Lamm et al., 2011; Lekies & Bennett, 2011; McClure et al., 2012; Morford et al., 2006a; Preskill & Boyle, 2008; Taylor-Ritzler, Suarez-Balcazar, Garcia-Iriarte, Henry, & Balcazar, 2013).

Attitude of both organizational members and organizational leadership can greatly impact the culture of evaluation. Within Cooperative Extension, Lekies and Bennett (2011) found while experiences with evaluation were mixed, 14% still stated their experiences were negative. Morford and colleagues (2006) found that 27% of Extension practitioners “prefer to ignore” or “dread” evaluation. These negative experiences need to be investigated as they have the potential to negatively impact the culture of evaluation within the organization. This study posits that if an organization’s members have a negative view of evaluation and negative experiences with evaluation these individuals certainly will not be motivated to do in-depth evaluations or participate in evaluation

capacity building exercises, thereby impacting the progress of evaluation within the organization.

Past experiences and prior behavior of individuals regarding evaluation can shape the attitude as well as the culture of evaluation. If individuals have no experience or only negative experience with evaluation it is unlikely they will be motivated to participate in evaluative work in the future (Lekies & Bennett, 2011). Without individuals willing to participate in evaluation work, there can be no evaluation culture. Providing positive and accessible experiences with evaluation has the potential to shape individuals attitudes toward evaluation. Basic steps must first be taken, accompanied by some marked success before we try to take on the advanced tasks.

Organization members that share the belief that evaluation has value, have the ability to drive the practice of evaluation (Preskill & Boyle, 2008). Evaluation is a step in the direction of the organizational goals and sharing the belief that evaluation has value can increase motivation and promote evaluation among all organizational members. Buy-in to the value of the organization's goals and having those goals supported and driven by evaluation practices has the potential to positively impact the culture of evaluation within an organization.

Organizational leadership can motivate members to participate in evaluation as often individuals are more motivated by external rather than internal factors (Morford et al., 2006a). Having leadership that values evaluation and shares information related to evaluative practices in a transparent manner will help to sustain evaluation practices and therefore increase the subjective norm regarding evaluation culture within the organization (Preskill & Boyle, 2008; Taylor-Ritzler et al., 2013). Increasing

stakeholders knowledge and awareness of evaluation can increase the culture of evaluation as well (Preskill & Boyle, 2008). If stakeholders are able to see value in evaluation, this positive attitude can help to externally motivate other organization members to participate in the evaluation process.

Clear and open communication plays a role in the culture of evaluation. Providing a dialogue about the evaluative process and results can enhance the evaluation capacity by making the process less confusing and mystic for organizational members (Boyd, 2009). When processes are not transparent, organizational members may be unsure of what the process is, and how the results of the process are used (Lekies & Bennett, 2011). This can lead to negative attitudes toward evaluation, as we tend to fear the unknown. Making organizational members aware of how their own evaluation results are used in the decision making process can increase motivation to perform evaluation and drive the culture of evaluation forward within the organization (Morford et al., 2006a). If evaluation is simply conducted for accountability it loses value for the organization and it's members (Morford et al., 2006a).

One final portion of evaluation culture is the self-efficacy of individuals conducting evaluations. If members of the organization conduct their own evaluations and utilize the data to inform programmatic changes they are also more likely to conduct more in-depth evaluations, thereby strengthening the evaluation culture by setting an example for others but also increasing the evaluation capacity of the organization they serve (Lamm et al., 2011; McClure et al., 2012). If individuals believe that they are capable of performing useful evaluations and see the positive results of doing so they will be motivated to continue this behavior (Kelsey, 2008).

Evaluation capacity building has the potential to increase the evaluation culture of an organization by allowing and encouraging organization members to share their knowledge and skills with others, thereby creating an open dialogue regarding evaluation (Labin et al., 2012; Preskill, 2008; Preskill & Boyle, 2008). Continuing to drive the evaluation capacity of an organization to a higher level can have widespread effects and the potential to create a culture that supports and values evaluation (Labin et al., 2012). Utilizing capacity building efforts can transform the evaluation activities of individuals, increase dialogue and bring valuable data to the organization (Labin et al., 2012; Preskill & Boyle, 2008; Taylor-Powell & Boyd, 2008; Taylor-Ritzler et al., 2013). By increasing the evaluation capacity of an organization we can, in turn, increase the evaluation culture.

In order to increase the evaluation culture within an organization, members must be supported and educated on evaluation (Preskill & Boyle, 2008). A culture of evaluation includes having organizational members with evaluation experience, positive attitudes towards evaluation, motivation to engage in evaluation, transparent evaluation practices, evidence of evaluation's value and ongoing evaluation training to further the evaluation capacity of the organization. Utilizing training, incentives, and recognition can increase enthusiasm for evaluation (Lekies & Bennett, 2011; Patton, 2008). Once there is enthusiasm for evaluation, the next step is to sustain the enthusiasm and the evaluation practices, which can create a culture of evaluation.

Allowing individuals to develop skills and knowledge in evaluation that in turn increase evaluation rigor within the organization can enhance a culture of evaluation. It means increasing the visibility of evaluation within an organization. An organization that has a culture of evaluation is one that openly shares evaluation results, discusses

evaluation on a regular basis, and views evaluation as a positive experience to improve programmatic practices and inform individuals performance, not to judge or make harsh criticism. This study proposes that in order to create a culture of evaluation, we seek to make evaluation viewed not as a judgment call, but as a tool to continue the mission of an organization or individual. Once a culture of evaluation is established within an organization, that organization will see great benefit from the open dialogue, increased skill sets, and programmatic impact that evaluation and evaluation capacity building can have.

Barriers to Evaluation

Barriers in implementation can be created due to perception of many facets of the actual evaluation process. Often human factors can be a major issue within evaluation (Taut, 2003). Examples of human factors are trust in the evaluator, competence of the evaluator and social skills of the evaluator (Taut, 2003). If participants in the evaluation have concerns regarding the process, the evaluation report may be discarded and it's impact never realized. Evaluation perception can have a direct impact on its use as well as on the actual behavior of evaluators or those being evaluated (Patton, 2008; Taut, 2003).

Barriers can impede the evaluation process, hinder evaluation capacity building and possibly deter positive outcomes regarding the evaluation process (Labin et al., 2012). Barriers to evaluation and evaluation capacity building can be found on an individual level or at the organizational level (Labin et al., 2012). Additionally some barriers such as time and external evaluations can exist and deter the evaluation process

(Labin et al., 2012; Taut, 2003). Overcoming these barriers is critical in building the evaluation capacity of an organization.

Evaluation Capacity Building

Evaluation of programs, individuals, and departments is becoming an increasingly vital part of organizational structure (Baughman, Boyd, & Franz, 2012; Baughman, Boyd, & Kelsey, 2012; Patton, 2008; Preskill & Boyle, 2008; Workman & Scheer, 2012). Having quality evaluations can give employers, granting organizations, and non-profits valuable information on their work and how best to inform their future practices. Results from these evaluations are needed to improve programmatic practices, develop new initiatives, and report to funding agencies (Braverman & Engle, 2009; Preskill & Boyle, 2008; Rodgers et al., 2012; Workman & Scheer, 2012). In today's budget restrictive economy, data driven decisions are increasingly common and all the more important. Evaluation provides a variety of data to make critical organizational decisions. With this, there comes a need to increase the evaluation knowledge and ability of the organization as a whole, or it's "evaluation capacity".

Increasing an organization's evaluation capacity leads us to a discipline known as evaluation capacity building (ECB). While there is much discussion on how best to describe ECB, this study employed the definition from Labin and colleagues (2012) that states, "evaluation capacity building is an intentional process to increase individual motivation, knowledge, and skills and to enhance a group or organization's ability to conduct or use evaluation". This definition considers what needs to be incorporated into developing a plan to enhance an organizations capacity. It is also important to note that ECB is separate from conducting evaluations (Labin et al., 2012). While it is possible for

an organization to conduct evaluations without the organization or its members engaging in any type of ECB practices, building their evaluation repertoire can help to enhance an organization's ability to conduct evaluations and utilize their results, thereby better informing the organizational practices (Labin et al., 2012; Taylor-Powell & Boyd, 2008).

There are a variety of benefits to an organization for increasing their evaluation capacity. Organizations can experience a range of both individual and organization-wide impacts such as improved attitudes, knowledge, and skills of individuals and increased programmatic data for decision making (Bourgeois & Cousins, 2013; Cousins & Bourgeois, 2014; Labin et al., 2012; Patton, 2008; Preskill & Boyle, 2008; Taylor-Powell & Boyd, 2008). With increased skills and knowledge, employees can go on to further the goals of the organization and meet the expectations and needs of both the community and stakeholders. Additional benefits of ECB include giving the organization a competitive edge when applying for funding since they will be able to provide evidence of the impact of their programs (Braverman & Engle, 2009; Coryn, Noakes, Westine, & Schroter, 2010; Labin et al., 2012). By understanding the baseline of evaluation competencies, a directed plan can be formed to build the evaluation capacity of an organization.

Motivations for engaging in ECB can vary from organization to organization. Organizations may see value in enhancing accountability or be motivated by stakeholders, either internal or external, or to increase their programmatic funding (Boyd, 2009b; Labin et al., 2012; Preskill & Boyle, 2008). Whatever the reason, organizations must be able to devote time and resources to ECB to meet their evaluation capacity needs and examine critical issues beforehand. The organization's goals for undertaking ECB must be examined and how can the organization support these goals long-term should be

addressed. Determining the current evaluation experiences of the organization's members is another critical step. Organizations must consider issues such as these and many others pertaining to the reasons behind the purpose for engaging in ECB before the real work begins.

While there are a variety of strategies and designs for engaging in ECB, each organization will require a different method based on their structure and needs (Labin et al., 2012; Preskill, 2008; Preskill & Boyle, 2008). Preskill and Boyle (2008) identify ten possible strategies for ECB. Creating a community of practice, undergoing training, utilizing coaching or mentoring and the use of written materials are just a few examples of strategies an organization could use to increase evaluation capacity (Preskill & Boyle, 2008). Multiple strategies can also be used, as the organizational structure dictates (Labin et al., 2012). Utilizing a design that works best for each particular organization can greatly impact the retention of the new skills (Preskill, 2008). In order to best serve each individual organization, the needs and current structure must be considered.

Before any change is implemented, organizations must focus on the collective parts of the organization as well as individual members. The organization must have buy-in and support from leaders within all groups that will be involved in ECB (Gruidl & Hustedde, 2003; Patton, 2008). These individuals within the organization will be critical in supporting the evaluation goals of the organization long-term (Braverman & Engle, 2009; Lamm et al., 2013). Evaluation capacity building should be considered as a broad-spectrum change impacting individuals throughout the organization.

In order for ECB to be successfully implemented, organizations should also take stock of their resources. Considerations such as technology, leadership, and the overall

organizational factors must be addressed prior to beginning to create change within the organization (Preskill & Boyle, 2008; Taylor-Powell & Boyd, 2008; Volkov, 2011).

Time is a critical resource to consider prior to engaging in ECB initiatives. Organizations must decide how much time to devote not only to undergoing training, but long-term time considerations of continuing evaluative practices must be built into the organizational structure. Organizational factors to be aware of include the external environment, organizational culture and organizational structure (Preskill & Boyle, 2008; Taylor-Ritzler et al., 2013). Once an organization knows its goals, strategy and resources, the work of ECB can begin.

Implementation of ECB should begin with communicating the need for an increased evaluation capacity to organization members, leaders, and stakeholders (H Preskill & Boyle, 2008). In some cases this will also include dissecting what evaluation means to that particular organization. Next, strategies for evaluation can be taught, data collection techniques should be discussed, and how to utilize the results of an evaluation needs to be emphasized. Activities such as developing an evaluation framework, developing a strategic plan for evaluation, and developing a schedule of evaluation and reporting can occur within the ECB process (Baughman, Boyd, & Kelsey, 2012; Preskill & Boyle, 2008). Depending on each organization's needs, appropriate tools and resources such as logic models and data collection systems can be demonstrated and implemented with organizational employees. Each organization will have its own specific structure and goals that will drive the implementation process.

Once an organization has undergone an ECB effort, the results of the change can be observed on both the organizational and individual levels (Labin et al., 2012). ECB

efforts can provide an organization with the infrastructure to support evaluation activities (Preskill & Boyle, 2008). Organizations that have engaged in ECB will have a better overall understanding of evaluation process as well as evaluation results and in turn these results have the potential to have a greater impact on the organization and improve practices (Bourgeois & Cousins, 2013a). Outcomes from ECB initiatives include both behavioral and knowledge based changes (Labin et al., 2012). Individuals within the organization will gain the necessary skills to conduct quality evaluations and the organization will in turn gain quality data to inform programmatic practices. Individual's attitudes and knowledge can also be impacted and can lead to slow, but measureable organizational change (Labin et al., 2012).

Engaging in ECB also requires the commitment of organizational support for the effort (Cousins & Bourgeois, 2014; Lambur, 2008). Enhancing evaluation efforts must be met with support from the organization as well as support for the efforts from an employee level (Taylor-Powell & Boyd, 2008). Making a commitment to developing the evaluation capacity of the organization must be addressed and promoted organization-wide in order for the efforts to be successful and have a long-term impact (Arnold, 2006).

Barriers to ECB, both internal and external, do exist within organizations, but can be overcome (Labin et al., 2012; Preskill & Boyle, 2008). Organizations can face limited buy-in from individuals or departments, high employee turnover, limited resources, limited funding, and geographical issues (Cousins & Bourgeois, 2014; Labin et al., 2012; Preskill & Boyle, 2008). Barriers will vary from organization to organization and must be considered when planning ECB efforts (Cousins & Bourgeois, 2014; Labin et al.,

2012; Preskill & Boyle, 2008). These barriers should not deter an organization from enacting a capacity building plan.

Evaluation capacity building efforts should not be viewed as a one-time change application. The results must be understood, shared and valued throughout the organization in order to gain long-term results. Support from administration within the organization is integral in promoting the necessary behavioral and organizational changes to sustain long-term evaluative work within an organization (Cousins & Bourgeois, 2014; Labin et al., 2012; Lambur, 2008). Evaluation should be viewed as a constant, ongoing process that not only produces data, but that produces meaningful data that shapes the future of the organization, its programs and its members. It is critical for organizations to continue to support evaluative behaviors and a culture of evaluation within each level of the organizational structure (Labin et al., 2012). Evaluation cannot exist in a vacuum.

Evaluation Capacity Building in Cooperative Extension

Cooperative Extension is one of the most wide-reaching organizations in the country. It is thought to be the largest non-formal educational program in the world (Seever et al., 1997). Enhancing the evaluative capacity of this broad organization can serve both the organization and the communities across the country that benefit from its educational work. Cooperative Extension offers a wide variety of programs, many with governmental ties, increasing the urgency for quality evaluations within the organization (Radhakrishna & Martin, 1999). Cooperative Extension has been called upon to increase its evaluation practices in order to meet governmental regulations such as the Government Performance and Results Act (GPRA, 1993, 2010). Extension is continually

being requested to provide evidence of public value through its evaluation data and results (Lamm & Israel, 2013).

Current research indicates that Extension educators are evaluating their programs but only at the most basic levels (Lamm et al., 2011). Many Extension educators were simply conducting evaluations to satisfy organizational accountability requirements although they were unsure how superiors utilize these results (Lamm et al., 2011). This indicates a need for ECB approaches to be implemented within Cooperative Extension in order to increase the level of evaluation within the organization as well as the utilization of evaluation data. As budgetary issues continue to impact Cooperative Extension, data collected through evaluation will be utilized to provide evidence for funding agencies that these programs depend upon (Lamm & Israel, 2013).

Cooperative Extension experiences a unique challenge in that the emphasis of accountability is typically on looking back and judging rather than for summative assessment purposes that help to shape future programmatic decisions (Lambur, 2008; Lamm et al., 2011). Often in Cooperative Extension, it is the extension educators themselves that are conducting a program, then also conducting its evaluation and in turn, reporting the results to stakeholders (Harder et al., 2010; A. Lamm et al., 2011; A. J. Lamm et al., 2013; McClure et al., 2012). Increasing evaluation capacity within the organization and the evaluation skills of Extension educators is even more important given these circumstances.

Extension educators typically rely on survey data collected after a program for the bulk of their evaluation activities (Lamm & Israel, 2013). While quality data can be attained in this manner, survey data should be only one piece of the overall evaluative

evaluation report, to provide a more well-rounded and thorough assessment of the program. Survey data and demographics alone are inadequate to report programmatic value (Lamm & Israel, 2013). Extension educators do often employ the use of logic models in relation to their programs, however the majority did not use them on a regular basis (Arnold, 2006; Lamm et al., 2013; Lekies & Bennett, 2011; McClure et al., 2012). While these evaluative behaviors are a start, they are still only basic level measures within a very complex organization.

In part some Extension educators lack experience and expertise to carry out a more thorough or rigorous evaluation of the programs (Lamm et al., 2011; Radhakrishna & Martin, 1999). Extension educators exhibit a need for skill development in the area of evaluation and qualitative analysis (McClure et al., 2012). In particular educators with less than five years of experience are in need of professional development and additional training in the area of evaluation (McClure et al., 2012). Extension educators show a lack of evaluation skills related to medium and long-term change and dissemination of findings (Lamm & Israel, 2013; McClure et al., 2012). Many Extension educators report just “going through the motions” or just doing enough to get by when discussing evaluation behaviors (Lamm et al., 2011). These issues in addition to the need for data to provide to funding agencies drive the need for ECB within Cooperative Extension.

Motivation for conducting evaluations can also be problematic within Cooperative Extension. Educators report not knowing how their evaluations are being utilized, having a negative perception of evaluation, or low motivation to conduct program evaluations (Boyd, 2009; Duttweiler, 2008; Kelsey, 2008; Lamm et al., 2011; Lamm & Israel, 2013). To increase motivation, organizational support for evaluation

must also be addressed (Lambur, 2008; Rennekamp & Arnold, 2009). Extension educators must value their evaluation results as much, if not more than administration, and discover how they themselves can use the results to inform their future program implementation (Rennekamp & Arnold, 2009). Age, experience, and consideration of job performance also impact motivation to conduct evaluation and thereby impact capacity building efforts (Morford et al., 2006a). Support systems, incentives and a culture that shares and celebrates evaluation will help to increase the motivation and the evaluation capacity of cooperative extension (Morford et al., 2006a). The lack of evaluation rigor and motivation indicates a clear need within Cooperative Extension to continue to build the evaluation capacity within the organization as a whole.

Each department, region, and office within Cooperative Extension has different evaluation needs and therefore different ECB needs (Lambur, 2008; Patton, 2008). The priorities and desired outcomes for each program need to be addressed in the evaluation planning (Patton, 2008; Rennekamp & Arnold, 2009). This vast need also results in limited resources, with each location having their own unique budget and own unique challenges (Lambur, 2008). These individualized differences must be taken into account when planning ECB for Cooperative Extension. Planning for the organization as a whole is likely not the best approach.

Cooperative Extension has undergone some efforts to increase their current evaluation capacity. A community or practice focused on evaluation has been developed by eXtension, which is the innovative online branch of the organization (eXtension, 2015; McClure et al., 2012; Morford et al., 2006a). A variety of trainings and professional developments are available, and there are currently state-level evaluation

specialists in place (McClure et al., 2012; Morford et al., 2006a). Now with the development of the evaluation champions, Cooperative Extension is demonstrating its continued commitment to integrating evaluation in to all levels of the organization (Boyd, 2009; Taylor-Powell & Boyd, 2008). The current forms of logic models were developed in part by Cooperative Extension's need for evaluation (H Preskill & Boyle, 2008; Rennekamp & Arnold, 2009; University of Wisconsin, 2013; Workman & Scheer, 2012). While these efforts are steps toward more robust evaluations, Cooperative Extension is still being asked to do more.

A driving factor behind ECB within Cooperative Extension has been the Governmental Performance and Reporting Act (GPRA) and the requests from granting authorities for evidence of program impact (GPRA, 1993, 2010). This need to provide evidence for funding is ever-increasing and continuing to put pressure on Extension programming. Often this external motivation is what drives evaluation within Extension, however utilizing ECB would provide Extension with an opportunity to internalize this motivation (Lambur, 2008). Additionally several recent articles have been published discussing evaluative behaviors of Cooperative Extension and providing recommendations for furthering the ECB efforts within the organization (Baughman, Boyd, & Kelsey, 2012; Boyd, 2009b; Braverman & Engle, 2009; Kelsey, 2008; Lamm et al., 2011; Lamm & Israel, 2013; McClure et al., 2012). It is clear that although Cooperative Extension is engaging in evaluation, there is still much capacity building work to be done.

Theory of Planned Behavior

In its first inception, the theory of planned behavior (TPB) attempts to not only explain human behavior, but also predict future behaviors by utilizing factors that influence behavior (Ajzen, 1985, 1991). Initially, Ajzen and Fishbein began with the theory of reasoned action (Ajzen & Fishbein, 1969). This model was accepted in scenarios in which individuals had complete volitional control regarding the behavior (Ajzen, 1985, 1991; Madden et al., 1992). The theory of planned behavior was developed to overcome this limitation and take into account situations where individuals do not have complete control (Ajzen, 1991, 2003; Madden et al., 1992). In situations where there are externally imposed restrictions on an individual's actions, the theory of planned behavior is the superior model.

The theory of planned behavior examines behavior-specific factors and how they relate to the prediction of behavior (Ajzen, 1991). This theory takes into account several factors, including intention, perceived behavioral control, subjective norms, and attitude toward the behavior. More recent inceptions also add implementation intent as a factor in predicting behavior and suggest consideration of additional variables (Armitage & Conner, 2001; Beck & Ajzen, 1991; Conner & Armitage, 1998; Gollwitzer, 1999; Gollwitzer & Sheeran, 2006; Orbeil et al., 1997). Motivational factors and beliefs have also been examined and included in the use of the theory of planned behavior (Ajzen & Fishbein, 2005; Armitage & Conner, 2001; Fazio, 1990).

Perceived behavioral control is a central concept in the theory of planned behavior, as this was previously lacking in the theory of reasoned action (Ajzen, 1991; Madden et al., 1992). This perceived behavioral control relates to an individual's attitude

regarding the behavior, the subjective norm regarding the behavior, and intention to perform the behavior (Ajzen, 1991; Armitage & Conner, 2001; Conner & Armitage, 1998). Perceived behavioral control is how much control an individual believes that they have over the behavior at hand (Ajzen, 1991). This differs from actual behavioral control. This perception of control can shift with each behavior and scenario. Additionally, Ajzen and colleagues describe a direct link between perceived behavioral control and the behavior itself (Madden et al., 1992). Perceived behavioral, subjective norm, and attitude combined to influence an individual's intention regarding a behavior (Ajzen, 1991).

Intention has a direct influence on the performance of a behavior; it is therefore a vital component to understanding human behavior. An individual's intention to perform a behavior must be present before behaviors that are not automatic responses are to occur. Intention involves an individual's motivation, both internal and external, to perform the behavior in question (Ajzen, 1991). Internal motivational factors involved in intention include the desire to perform the behavior or obtain its outcome (Ajzen, 1991; Ajzen & Fishbein, 2005; Choi, 2012). External motivational factors include resources such as time, skills, and factors outside of the individual's control such as cooperation with others (Ajzen, 1991; Choi, 2012). These motivational factors can greatly impact intention. If an individual feels the behavior in question will not be worth the outcome, or that others will not cooperate with them in order to complete the behavior, it is unlikely that they will attempt to achieve the behavior (Ajzen, 1991; Ajzen & Fishbein, 1969; Conner & Armitage, 1998; Madden et al., 1992). If an individual has no major obstacles in controlling the behavior, intention can be utilized to predict the behavior with significant

accuracy (Ajzen, 1991). Intention to perform a behavior takes into account how willing a person is to perform the behavior at a particular time or place. This intention is only present if a person has control over when to perform or when not to perform the behavior (Ajzen, 1991). Intention can be both positively and negatively impacted by the aforementioned factors.

Attitude is a key factor in the theory of planned behavior and is reflected in intention (Ajzen, 1991, 2003; Conner & Armitage, 1998). As with motivation, if an individual does not have a positive attitude toward the behavior it is unlikely they will have any intention to perform the behavior (Ajzen, 2006; Conner & Armitage, 1998; Fazio, 1990). External motivating factors, such as demands from leadership will impact motivation and intention to perform a task that an individual does not find desirable. Attitude to perform a behavior can be overcome by other factors and the behavior can still be carried out when these external motivators exist.

Perceived behavioral control is the ability, resources, and control that an individual believes that they have over a particular behavior (Ajzen, 1991; Ajzen & Fishbein, 2005; Armitage & Conner, 2001). This takes into account an individual's self efficacy related to the behavior (Bandura, 1977, 1991). Additionally this perception of control is dependent on beliefs, attitudes, and intentions. Perceived behavioral control can be utilized with intention to predict behavior. If intention is held constant, the effort an individual puts forth to complete a behavior increases with the perceived control over this behavior (Ajzen, 1991). Additionally if this perceived control is fairly accurate, it can be used as a substitute measure for actual control if necessary (Ajzen, 1991). Perceived behavioral control can also be impacted by information gathered from others

that have experience regarding the behavior (Ajzen, 1991). This can shape how an individual views the behavior and their self-efficacy regarding the behavior. If an individual feels that they have a considerable amount of knowledge and resources related to the behavior, then they will most likely feel that they are more able to complete the behavior, thus increasing their perceived behavioral control.

Subjective norms are a social factor related to how an individual perceives the social desirability of the behavior. This can generate external pressure, either real or imagined, to perform the behavior. Subjective norms may be the least influential factor in behavior prediction, as an individual's attitude regarding the behavior can overshadow the social pressures (Ajzen, 1991; Armitage & Conner, 2001). However, these factors can still play a role in the intention and completion of behavior. If an individual perceives a behavior as socially desirable, they may be influenced to perform this behavior or in the opposite case, to not perform a socially undesirable behavior.

In order to predict behavior utilizing the theory of planned behavior, several conditions must be met. Perceived behavior control must correspond to the behavior that is to be predicted, intentions and perception must remain stable in between the time of assessment and observation of the behavior, and perceived behavioral control must be accurately reported or predicted (Ajzen, 1991). Depending on the behavior at hand, these factors can vary in their ability to predict behavior. Intention and perceived behavioral control interact in the prediction of behavior (Ajzen, 1991).

Predicting intentions within the theory of planned behavior relies on an individual's attitude, subjective norm, and the degree of perceived behavioral control (Ajzen, 1991). Intention should increase in direct proportion to these three factors. As

with predicting behaviors, the impact of these factors on the predictability of intention vary in intensity with each situation. Intention alone is not enough to cause a behavior to occur (Conner & Armitage, 1998). Intentions that are coupled with implementation plans, however, can have an impact on the likelihood of a behavior occurring (Conner & Armitage, 1998; Gollwitzer & Brandstätter, 1997; Gollwitzer & Sheeran, 2006).

The theory of planned behavior also considers how one's beliefs impact the explanation and subsequent prediction of behavior. Behavioral beliefs consider what individual believes about the behavior and how this attitude can determine what they think they are able to do (Ajzen, 1991). Belief that a behavior has desirable consequences can increase the likelihood of performing the behavior. Normative beliefs take into account social pressure or acceptance of the behavior (Ajzen, 1991). If an individual believes that a behavior is socially desirable, this can increase the motivation and intention to complete the behavior. Finally, beliefs regarding control of the behavior can impact the likelihood of the completion of the behavior (Ajzen, 1991). Whether or not an individual thinks that they have the necessary skills and resources to complete the behavior falls into this aspect of control. Believing that one is in control and capable of carrying out the behavior will increase the probability of the behavior's realization.

Ajzen found that the factors of attitude, subjective norms and perceived behavioral control can impact one's intention to complete the behavior (1991). Intentions, along with perceived behavioral control can account for variance in the behavior and assist in predicting the achievement of the behavior (Ajzen, 1985; Armitage & Conner, 2001; Orbeil et al., 1997). Each of these factors plays a significant role in explaining and predicting behaviors. By better understanding these factors, this theory

posits that explanation and prediction of the behavior will be possible (Ajzen, 1991, 2002, 2003). In some situations, utilizing the theory of planned behavior can help to design interventions to change or stimulate behavior (Daigle et al., 2002; Greaves, Zibarras, & Stride, 2013; Lin, Chan, & Wei, 2006; Meng, Othman, D'Silva, & Omar, 2014). In order to create behavioral changes, understanding each component of behavior is a critical first step.

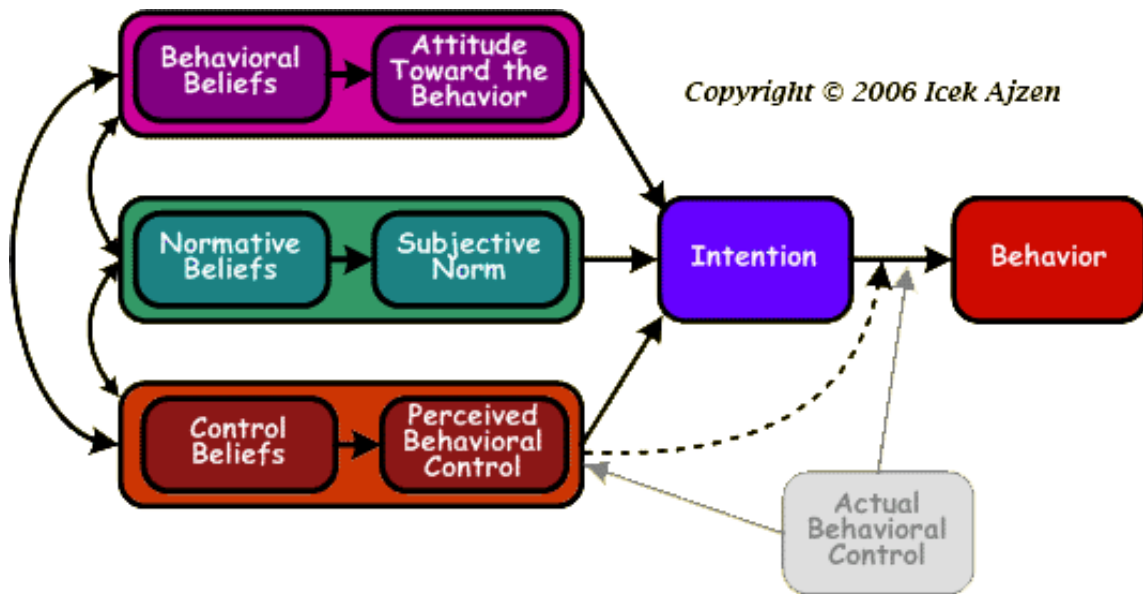
More recent variations of the theory of planned behavior add a specific belief component into each of the initial behavioral factors (Ajzen, 2011b; Ajzen & Fishbein, 2005; Armitage & Conner, 2001; Greaves et al., 2013). Behavioral beliefs can impact an individual's attitude towards the behavior. Normative beliefs are tied to the subjective norm regarding the behavior. Control beliefs, meaning factors an individual believes they are or are not in control of, relate to perceived behavioral control. These factors are also impacted by background factors such as personality, intelligence, socioeconomics, culture and others (Ajzen & Fishbein, 2005). The theory of planned behavior can provide many levels of detail that will help us to explain and predict human behavior.

One complimentary counterpart to the theory of planned behavior is the MODE model (Fazio, 1990). This model takes into account the factor of general attitudes and how they may impact performance of behaviors. This model considers how these attitudes are first activated via motivation, opportunity, and processing modes and then how the behavior relates to this attitude (Ajzen & Fishbein, 2005; Fazio, 1990). These general attitudes can help guide prediction of behaviors (Ajzen & Fishbein, 2005).

The theory of planned behavior closely relates to both evaluation culture and evaluation competencies. By utilizing a path model based off of Ajzen's design, culture,

competencies, administration support within Cooperative Extension, and prior behavior can be examined (1991). This modification of the original model allows for incorporation of variables that are specific to both evaluative work and Cooperative Extension. The Theory of Planned Behavior model as developed by Ajzen (2006) can be seen below.

Figure 2-1: Theory of Planned Behavior Model developed by Ajzen (2006)



The Theory of Planned Behavior is now widely accepted and utilized in a variety of fields to examine, explain, and predict behaviors (Conner & Armitage, 1998). Several empirical studies have been made regarding this theory and its components (Ajzen, 2003; Conner & Armitage, 1998; Daigle et al., 2002; Gollwitzer, 1999; Gollwitzer & Sheeran, 2006; Madden et al., 1992; Meng et al., 2014; Orbeil et al., 1997). These studies provide a foundation for utilizing the theory of planned behavior in the context of examining evaluation within Cooperative Extension.

The Intersection of Theory of Planned Behavior and Evaluation Capacity Building

The theory of planned behavior has been utilized in a variety of contexts. Disciplines such as education, medicine, economics and many others have utilized this theory in order to explain and predict behaviors. The theory of planned behavior examines behavior-specific factors and how they relate to the prediction of behavior (Ajzen, 1991). This theory takes into account several factors, including intention, perceived behavioral control, subjective norms, and attitude toward the behavior (Ajzen, 1991, 2006; Ajzen & Fishbein, 2005; Armitage & Conner, 2001; Madden et al., 1992). Here, we examine how these factors are reflected in concepts such as evaluation capacity building and the culture of evaluation.

First, examining Labin's definition of evaluation capacity building we see that "evaluation capacity building is an intentional process to increase individual motivation, knowledge, and skills and to enhance a group or organization's ability to conduct or use evaluation" (2012). Motivation plays a role in an individual's intention to complete a behavior as well as an individual's attitude and perceived behavioral control regarding the behavior (Ajzen & Fishbein, 2005). Factors such as skill level and knowledge of evaluation are key components in one's perceived behavioral control (Ajzen, 1991; Armitage & Conner, 2001). If an individual does not have the necessary evaluative skills and knowledge, they most likely perceive a lower level of control as well as a lower level of motivation to complete the behavior.

Considering the component of evaluation culture, we turn to another definition by Labin and colleagues, which states "the collective values, attitudes, goals, and practices that can support or hinder organizational change as related to evaluation" (Labin et al.,

2012). Culture, as defined here also connects to the theory of planned behavior, in that attitudes are a component defined in the theory of planned behavior (Ajzen, 2003, 2011b; Ajzen & Madden, 1986; Lambur, 2008). These attitudes can be examined utilizing this theory, thereby contributing to the body of knowledge surrounding the culture of evaluation. Furthermore, values, goals and practices can contribute to the subjective norms related to evaluation. The subjective norms can be considered the way that an individual believes that particular behavior to be perceived by others within the social structure related to that behavior (Ajzen, 1991; Ajzen & Fishbein, 2005; Armitage & Conner, 2001). Values and goals of the organization are reflected by this subjective norm. If an organization does not value the evaluation process and subsequent evaluation results, then the subjective norm will be to downplay evaluation, thereby creating a negative culture of evaluation.

Summary

Evaluation creates a means by which information is collected, significance is determined and programmatic decisions are made (Labin et al., 2012; Lambur, 2008; Patton, 2008). Those who conduct evaluation must have certain skills or competencies by which they conduct their work. Within North America, the standards set by the Canadian Evaluation Society are the most widely accepted (King et al., 2001; Kuji-Shikatani et al., 2012; LaVelle & Donaldson, 2015). These competencies allow for a set of standards within evaluation practices and for organizations conducting evaluations, such as Cooperative Extension.

Much examination has been done on the rigor and level of evaluative practices within Cooperative Extension, however more attention must be paid to how Extension

educators are trained to conduct evaluations and which evaluation competencies Extension educators need to possess (Lamm et al., 2013; Morford et al., 2006b; Rennekamp & Arnold, 2009; Rodgers et al., 2012). The evaluative practices and evaluation competencies within Cooperative Extension are also part a culture of evaluation within the organization. Evaluation culture includes attitudes, values and support systems regarding evaluation within an organization or program (Bourgeois & Cousins, 2013a; Labin et al., 2012). These factors can be impacted by organizational leadership, communications within the organization, prior training and the use of evaluations within the organization (Labin et al., 2012; Morford et al., 2006b). Efforts to enhance these factors are known as evaluation capacity building. ECB practices include intentional processes designed to increase evaluation within an organization, reducing barriers and creating dialogue about evaluation (Bourgeois & Cousins, 2013b; Boyd, 2009; Gruidl & Hustedde, 2003; Taylor-Powell & Boyd, 2008).

The Theory of Planned Behavior, developed by Ajzen (1991), provides a means for examining evaluation behavior within Cooperative Extension. By utilizing the factors of this theory, attitudes, behavioral intentions, subjective norms, and perceived behavioral control regarding evaluation can be examined (Ajzen, 1991, 2011b; Beck & Ajzen, 1991). As attitude plays a role in culture, this theory lends itself to modification for including factors of culture to the examination (Ajzen & Madden, 1986; Labin et al., 2012). Utilizing the Theory of Planned Behavior along with factors of culture and competency, evaluation practices within Cooperative Extension can be thoroughly examined.

Chapter 3: Methodology

Research Objectives

The primary purpose of this study was to examine the evaluator competencies based on the Canadian Evaluation Society Competencies for Canadian Evaluation Practice and determine which evaluation competencies extension educators should possess (Buchanan & Kuji-Shikatani, 2014). The Canadian competencies were chosen, as these are the most current and widely accepted in the field of evaluation in North America, given that the United States does not have a national list of agreed-upon competencies (King et al., 2001; Melkers & Roessner, 1997; Seidling, 2015). The second part of the study was to determine which competencies the educators do possess and for which competencies there perceived needs for training or improvement. Finally, the study examined the overall behavior and culture of evaluation within Cooperative Extension and created recommendations for improving the evaluation culture and practices within Extension. The objectives of this study were as follows:

1. Identify the accepted evaluation competencies Cooperative Extension educators should be able to demonstrate in their professional work.
2. Identify which evaluation competencies Cooperative Extension educators currently recognize that they practice in their professional work.
3. Identify the evaluation competencies that are perceived as important within the Extension organization.
4. Identify those factors of the Theory of Planned Behavior that influence evaluation behavior and culture within Cooperative Extension.

5. Propose Evaluation Capacity Building recommendations within Cooperative Extension to increase evaluation competencies, behaviors and culture.

Rational for Design

This study used a quantitative approach in order to examine the evaluation competencies, culture and planned behaviors of Cooperative Extension educators. By utilizing quantitative analysis, the three subscales of competencies, culture, and behavior were examined and compared. Descriptive statistics provided information on the skill level, and importance of each competency. The use of multiple regression to compare multiple independent variables is a common practice and has been utilized in other studies in conjunction with the theory of planned behavior (Ajzen & Madden, 1986; Greaves et al., 2013; Keith, 2006). The Borich model was utilized to compare the means of skill level and competency to determine any areas that have a significant difference (Borich, 1980; McKim & Saucier, 2011). The scale regarding culture was analyzed in order to make recommendations for improving the culture of evaluation within Cooperative Extension.

Due to the intended large geographic area of this study, spanning multiple states, utilizing an online survey design and quantitative methodology allows access to these widely dispersed populations. In order to increase generalizability this large sample size can make the findings applicable and useful for a sizeable section of Cooperative Extension in the United States (Howell, 2006; Pedhazur & Schmelkin, 1991).

There is a lack of research in the field that speaks to the evaluation culture and evaluation competencies of Extension Educators (Baughman, Boyd, & Franz, 2012; Duttweiler, 2008; Lamm et al., 2013; Rennekamp & Arnold, 2009). For this reason

collecting this initial quantitative sample from multiple states provides a baseline for evaluation practices in the field. From this baseline further research will be able to be conducted to better understand the evaluation practices, skills, behavior, and culture within Cooperative Extension.

Variables Relating to Evaluation in Cooperative Extension

The following independent variables have been selected to examine the dependent variable of evaluation behaviors as measured by skill; culture of evaluation within Cooperative Extension, attitude, perceived behavioral control, perception of evaluation competencies, training regarding evaluation, implementation intentions, subjective norm regarding evaluation, and the Extension variables of location, college major, program area, degree level, and years of experience in Extension (Ajzen, 1991; Ajzen & Fishbein, 2005; Braverman & Engle, 2009; Conner & Armitage, 1998; Guion et al., 2007; Harder et al., 2010; Lambur, 2008; A. J. Lamm & Israel, 2013; McClure et al., 2012; Morford et al., 2006a; Workman & Scheer, 2012). Many of these variables also interact with each other, showing linkages to increase understanding of evaluation behaviors (Ajzen, 1991, 2006; Ajzen & Fishbein, 2005; Armitage & Conner, 2001). Training, subjective norm and experience play a role in perceived behavioral control. Attitude, subjective norm, and perceived behavioral control are all a part of intention to enact a behavior (Ajzen, 1991, 2011b; Ajzen & Madden, 1986; Armitage & Conner, 2001; Conner & Armitage, 1998). The culture of evaluation is related to subjective norms, attitude, location, educational background, and training in evaluation (Ajzen, 1991; Armitage & Conner, 2001; Bourgeois & Cousins, 2013b; Labin et al., 2012).

Three instruments were utilized in combination to examine these factors of evaluation behavior within Cooperative Extension. The Canadian Evaluation Competencies examine knowledge and training in evaluation as well as the additional competencies an individual may hold that are related to evaluation (Buchanan & Kuji-Shikatani, 2014). The culture subscale within the readiness for organizational learning and evaluation (ROLE) survey was utilized to examine administration support and subjective norms (Preskill & Torres, 1999b). A survey instrument based on the theory of planned behavior was designed by the researcher, following guidelines on the theory in order to examine behaviors that directly relate to Cooperative Extension (Ajzen, 2011a). This instrument examined the remaining variables as well as subjective norm (Ajzen, 2011a; Francis, 2004). See the table in Appendix A for details regarding these variables and their relation to evaluation behaviors.

Examining these variables delivers a more detailed picture of evaluation behaviors and culture within Cooperative Extension. The current knowledge base surrounding evaluation behaviors in Cooperative Extension does not take into account culture or a specific set of competencies. Determining how these factors influence evaluation behaviors provides information that can then be utilized to increase the evaluation behaviors within Cooperative Extension. Once data collection was completed, these factors were analyzed and recommendations were made as to how Cooperative Extension can increase the evaluation behaviors of Extension educators as well as the culture of evaluation within the organization. Evaluation is a broad discipline and requiring Extension educators to complete evaluation tasks at a high level for governmental reporting requires a great deal of training (Baughman, Boyd, & Kelsey,

2012; Duttweiler, 2008; Lamm et al., 2013; M. Q. Patton, 2008; Rodgers et al., 2012).

Utilizing this research in order to direct training efforts can benefit the field of evaluation as well as Cooperative Extension and the communities that it serves.

Protection of Human Subjects

Virginia Tech Institutional Review Board (IRB) policies and procedures were followed throughout the duration of this study. Approval was sought prior to the initiation of the expert review and the final survey instrument was then resubmitted to the IRB for approval. Appendix B Includes the IRB approval letter (IRB#15-526).

Preliminary Work

This study began with a expert panel review based on the Canadian Evaluation Competencies, as these are the most widely accepted in North America (Buchanan & Kuji-Shikatani, 2014) Given that an Extension educator is not trained as an evaluator and only has evaluation as a subset of their overall responsibilities, it is possible that there are some evaluation competencies that Extension educators do not need to demonstrate. The expert panel was designed to determine if all competencies regarding evaluation were relevant for Cooperative Extension. Additionally, competencies from Lamm, Israel, & Diehl (2013) were crosschecked to determine the most accurate competencies for Extension educators.

The use of the expert panel review was implemented in determining priority competencies for training of current and future Extension professionals. Using an expert panel of 15 individuals representative of the population of interest developed through researching individuals doing evaluation work within Cooperative Extension, the list of evaluation competencies was examined to ensure the focus on those competencies

necessary for a Cooperative Extension educator. The panel was first individually presented with the Canadian Evaluation Competencies in their entirety. The panel was asked to rate those most critical for Cooperative Extension educators on a Likert scale.

After the first round of the expert panel review the researcher examined the level of agreement on each competency. Based on literature the researcher intended to drop any competences with less than 50% agreement, however it was found that all competencies had greater than 50% agreement regarding their importance for Cooperative Extension educators (Somers, Baker, & Isbell, 1984). Based on this agreement within the expert panel, the Canadian Evaluation Competencies were used in their entirety for the final instrument.

Within this study, the subscales being utilized vary in the number of items. The portion of the survey relating to competencies underwent an expert review, and no eliminations were made, therefore the scale has 49 items. The scale regarding culture has 27 Likert-scaled items. For behaviors related to evaluation, a subscale was developed following guidelines set out by Ajzen (2011a). This subscale has 16 items in the four subsections of attitude towards evaluation, behavioral intentions, subjective norm and perceived behavioral control. Having an adequate number of items relating to these constructs enhances reliability. A pilot test of the developed survey items was completed after the expert review and reliability analysis was performed to determine if these scales are adequately measuring the constructs.

Instrumentation

The portion of the survey instrument regarding evaluation competencies was developed utilizing the expert review and administered online via Qualtrics. Expert

panelists were asked to select the competencies from the Canadian Evaluation Competencies that are pertinent to the role of an Extension educator on a Likert scale for agreement. Likert scaling of instruments can be utilized in order for participants to choose an option that best represents their views for use in quantitative analysis (Johnson & Dixon, 1984). Once the expert review was completed, the items were scaled in two forms; the first determining the skill level of Extension educators utilizing the scale of 1 being *not very skilled*, 2 being *somewhat unskilled*, 3 being *somewhat skilled*, and 4 being *very skilled*. The second portion of the competency subscale addresses perception of these same competencies with 1 being *strongly disagree*, 2 being *disagree*, 3 being *agree*, 4 being *strongly agree* and 5 being *not applicable*.

The existing subscale on culture followed the portion relating to competencies. This is also a Likert scaled survey with 1 being *strongly disagree* and 5 being *strongly agree*. This subscale regarding culture of evaluation takes into consideration the values, goals and practices of an organization (Labin et al., 2012). This culture was also examined by the questions relating to subjective norm, as this factor takes into the perceptions of the Extension educators regarding other colleagues' views of evaluation work.

Finally, the subscale regarding the Theory of Planned behavior developed by the researcher, utilizing the guidelines from Ajzen (2011) completed the instrument. The behavioral measures utilized in this study are as follows: attitude, perceived behavioral control, implementation intentions, subjective norm, culture of evaluation, years of experience within Cooperative Extension, perception of importance, educational background and training regarding evaluation, (Ajzen, 1991; Ajzen & Fishbein, 2005;

Braverman & Engle, 2009; Conner & Armitage, 1998; Guion et al., 2007; Harder et al., 2010; Lambur, 2008; Lamm & Israel, 2013; McClure et al., 2012; Morford et al., 2006a; Workman & Scheer, 2012). These factors were investigated utilizing a path model created by the researcher based on guides relating to the theory of planned behavior (Ajzen, 2011a; Francis, 2004). The factors of attitude, perceived behavioral control and subjective norm are part of the theory of planned behavior and help to explain current evaluation behaviors within the organization (Ajzen, 1991). Perception of importance regarding the competencies and culture can impact attitude and were examined accordingly. This new instrument, Evaluation Competencies, Culture and Behavior (ECCB) was pilot tested to a population of Cooperative Extension educators in a state near those involved in the study. To view the complete instrument, please see Appendix C.

The survey took between 10 and 25 minutes for participants to complete. The survey instrument's contained 49 items, on two scales regarding evaluation competencies, the culture portion contains 27 items and the portion regarding behavior contains 16 items, and eight Extension or demographic variables were included for a total of 149 items. These items were scaled according to literature guidelines and grouped in their individual sections for logical completion by participants.

Quality of Measures

The measures of this study rely on regression analysis as well as descriptives and mean weighted discrepancy scores. Descriptives were utilized to determine the top competencies for importance and for skill level. Regression analysis was utilized to study the relationships between evaluation behaviors and the influencing factors of skill,

culture, subjective norm, perceived behavioral control, and attitudes towards evaluation. Mean weighted discrepancy scores, developed through the Borich model in order to compare competencies or skills on two different scales (Borich, 1980). For this study a comparison between skill level and perception of importance was analyzed in order to make recommendations for practice.

Reliability in this study was impacted by the sample size, the number of items on each survey scale, and the self-reporting of data (Howell, 2006; Pedhazur & Schmelkin, 1991). As this population involves Extension systems in four states, the population was estimated to be slightly over thousand individuals. Establishing reliability of these measures enhances credibility as well as the generalizability of the results. The larger sample size allows increased reliability. Given that this was an online survey, estimated response rates for online surveys range from 25% to 50% (Cook, Heath, & Thompson, 2000; Nulty, 2008). This is a lower response rate than with paper surveys. Although this lower response rate is not desirable, given the large geographical range of the study, online methods are preferred in this case.

Self-reporting of behaviors and other factors relating to evaluation in this study can impact reliability (Ary, Jacobs, Sorensen, & Walker, 2013; Howell, 2006). As the study was conducted online, the participants were able to remain anonymous. This anonymity may provide participants a feeling of security and possibly increase the likelihood of participants being more forthcoming in their responses.

Validity issues relating to this study include instrumentation, population selection, mortality, and history (Ary et al., 2013; Howell, 2006; Pedhazur & Schmelkin, 1991). These factors can influence internal and external validity. Validity is critical to this study

to determine if the observations are due to the independent variable of evaluation behaviors, and for generalizability of the results.

Threats to internal validity include the instrumentation selected for the measures, as a portion of the measures were developed through a expert panel review, and a portion were developed by researchers, based on guidelines for the theory of planned behavior. The measures developed by the researchers underwent a pilot test with a group of Extension educators from a neighboring state to the population of interest within Cooperative Extension. This pilot study examined the consistency of the measures and helps to provide information on how well the measures provide data on the behavioral constructs. After the pilot test, the items were analyzed and decisions to keep or discard the item were made.

Population was another issue relating to validity of this study. The population the researchers are able to access may be slightly different than the target population. Random assignment was not utilized for this study. Non-probability sampling was utilized as this was the best means of contacting the maximum number of individuals given the constraints of population access. This can possibly give a disproportionate image of the population as a whole (Howell, 2006). This factor will be reported in the limitations section of the study as it pertains to generalizability.

Another concern that researchers had related to validity was mortality. Typically this is an issue when a study has several phases or takes place over a long period of time (Pedhazur & Schmelkin, 1991). However for this study, there was a concern regarding the length of the survey and the possibility of individuals stopping partway through. It is possible that participants may have become fatigued, bored, or not have adequate time to

complete the survey and participants may decide to prematurely exit the online system, therefore not providing all of the desired information. Attempts were made to limit the number of questions and length of the survey so as to not fatigue participants.

An individual simply filling out the form incorrectly may impact internal validity. If an individual is rushed, does not read the entire questionnaire, or just makes an error, they may appear as an outlier in the data and skew the results. These individuals may not be an accurate representation of the population as a whole, and efforts were made to control for these variables. Examination of the raw data helps to control for these potential outliers.

There are a wide variety of factors that can impact the reliability and validity of this study. It was the researcher's goal to maximize the experimental variance, minimize the error variance and control for extraneous variables (Kerlinger, 1986; Pedhazur & Schmelkin, 1991). The large sample size helps to minimize error variance and reduce sampling error. In developing measures the researchers must take into consideration how best to measure the constructs and ensure reliability and validity of these measures so that the data collected can be reliable and valid as well.

Population of Interest

This study focused on Cooperative Extension within in the Eastern portion of the United States of America. This population was chosen based in part on accessibility of this population. While this population does not encompass all of Cooperative Extension in the United States, it is intended to be utilized as a representative sample. Following the initial contact with state administration, five states agreed to participate, however three generated useable data. The states that remained in the population were located in

the Mid-Atlantic region of the United States. The researcher also included the state in which the pilot study was conducted for a total of four states. Participation in the study was optional for both the directors and the Extension educators.

Sampling Methods

The sampling method utilized was non-probability sampling, as all Extension educators within the population of interest were invited to participate. Emails were sent out on the listservs in each region, requesting participation in the study from all Extension educators at all levels. Given that this was a non-experimental study, the data is utilized for predictive and explanatory purposes. This design, however, allows the researchers to look at a variety of variables related to Extension evaluation behaviors.

The analysis plan was designed to examine the relationships between evaluation competencies, or skill level, and evaluation behaviors and between evaluation culture and evaluation behavior. The factors regarding evaluation behavior were examined independently from culture and competency to determine a baseline of evaluation behavior within the organization. Implementation intentions were compared to evaluation behaviors. Based on the self-reported competencies, the skill level was compared to the perceived importance of the competency to determine if there is a discrepancy between skill level and perception of importance. Evaluation culture was compared to both competencies and behaviors. These relationships and path analyses do not indicate causation (Ary et al., 2013; Howell, 2006; Pedhazur & Schmelkin, 1991). Results were interpreted keeping this factor in mind.

Creation of Instrument

Researchers first ensured public use status or obtained permission for use of the existing instruments and guidelines from authors (Appendix D). The researchers examined the existing evaluation competencies and items were altered to better suit Cooperative Extension (e.g., changing “evaluator” to “Extension educator” or “program director”) (Kuji-Shikatani et al., 2012). These competencies were then utilized in a review where a panel of experts examined each competency in order to ensure that they fit the needs of Extension educators (Somers, Baker, & Isbell, 1984). The course of the expert panel review revealed that all competencies were to be included in the final instrument.

The second portion of the instrument was taken from the Readiness for Organizational Learning and Evaluation Instrument (ROLE) developed by Preskill and Boyle(1999). From Preskill and Boyle’s initial work, the researchers were most interested in the culture subscale and utilized only this portion from the initial instrument. This section was also altered for language so that the titles reflected Cooperative Extension as with the scale for Competencies. The culture subscale retained it’s Likert scale of 1= *strongly disagree*, 2= *disagree* 3= *neutral*, 4= *agree* and 5= *strongly agree* (Creswell, 2008), and are used to determine importance regarding each statement (Babbie, 2004).

Finally, by utilizing the guidelines set out by Ajzen and by Francis the researchers created an instrument based on the Theory of Planned Behavior as it relates to Evaluation Culture (Ajzen, 2011a; Francis, 2004). Questions were created based on these guidelines and created in order to examine the evaluation behaviors of Cooperative Extension

educators. Questions in this instrument are grouped into four subscales of attitude, intention, subjective norm, and perceived behavioral control. The competencies, culture scale, and Theory of Planned Behavior sections were combined to create the new survey instrument.

This instrument, Evaluation Competencies, Culture and Behavior, is designed to measure the evaluation skill, perception, behaviors and culture within an organization. The instrument consists of three overall subscales pertaining to the Theory of Planned Behavior, evaluation competencies and evaluation culture. Alpha coefficients for the subscales were examined for each subscale as well as the overall instrument.

Additional data were collected regarding the Extension demographics of participants. Years of experience in Extension, program area, state, prior training in evaluation, college major and degree level were collected in order to examine the relevant factors related to evaluation training, education and past experience. These factors were used in the analysis to examine variation in the regression equation and path analysis. This information can help inform future Cooperative Extension training and allow for further examination of evaluation practices in the field.

Pilot Testing

Pilot testing was conducted in July 2015 with the assistance of the Extension system located in a state neighboring those intended to be a part of the study. This pilot test was utilized to determine any necessary changes in the instrument (Ary et al., 2013; Lancaster, Dodd, & Williamson, 2004). Participants were also asked to provide suggestions for changes at the conclusion of the survey.

An email was sent to the director of the pilot study state's Cooperative Extension system requesting permission to distribute the pilot study. Upon review by their leadership board, permission was granted by administration and the Director Cooperative Extension for this state and the pilot survey was sent out to all Extension professionals via email. The pilot study recruitment email is available in Appendix F. Forty individuals began the pilot study and twenty individuals completed the pilot test in full.

Analysis of the pilot test was done to determine reliability of each individual scale and the overall instrument. A Chronbach's alpha coefficient was calculated for each scale to determine if each was internally consistent and also to determine the internal consistency of the overall scale. The scale regarding perception of importance of competencies was found to have an alpha of .945. The scale regarding skill level of the competencies was found to have an alpha of .953. The alpha for evaluation culture was .946. The alpha for the scale regarding Theory of Planned Behavior was .807. Overall the instrument had an alpha of .967. Further analysis of the Chronbach's alpha was conducted to determine if deletion of an item would increase or decrease reliability. No deletions or edits were deemed necessary.

Inclusion of Pilot Data

Typically pilot data from a survey is utilized to conduct reliability and validity analysis and to determine if any changes need to be made to the instrument. Pilot data is a valuable research tool that can help to both understand the reliability of a new instrument but also to understand the climate in which the research is being conducted (Nunes, Martins, Zhou, Alajamy, & Al-Mamari, 2010). A better understanding of participants' reactions to the study can be gauged and considerations can be made for

such necessities as recruitment and wording of items (Nunes et al., 2010). Pilot studies also allow for researchers to determine if the study will result in useable findings and whether or not a study is feasible (Pinsonneault & Kraemer, 1993; Simon & Goes, 2011). Pilot studies can also give advanced warning of possible issues with the study features or data collection methods (Simon & Goes, 2011). In this case no notable indicators were recognized.

In some cases it is not advised to include pilot data in the final study analysis due to changes in procedures between the pilot and the final study, however these cases are most often in medical research where randomized controlled trials are the norm (Lancaster et al., 2004; Leon, Davis, & Kraemer, 2011). In social science research the inclusion of pilot data can greatly benefit the overall picture generated by the study (Leon et al., 2011; Pinsonneault & Kraemer, 1993). Provided that the study has not been greatly altered after the pilot data was collected, its inclusion is recommended in the final analysis (Pinsonneault & Kraemer, 1993).

Given that the reliability for all of the measures was high, the instrument was not altered. Therefore the pilot test mirrors the actual study and the data should be considered valid for inclusion in the final analysis. The inclusion of this pilot data could be compared to the conduction of an internal pilot test however this can lead to the type I error being slightly increased (Lancaster et al., 2004). Given that the design was not altered the error should not be increased significantly. Additionally the responses for this study showed that there were statistical significance to the questions at hand therefore proceeding with the main study was recommended. This data supports the study and

therefore including the data can enhance the picture of evaluation behaviors in Cooperative Extension.

Data Collection

Data for this study was collected via online methods. Participation for the expert panel utilized online methods to determine interested parties well as email to solicit interested parties. Criteria for the expert panel included, position within the organization, experience conducting evaluations and membership in evaluation related organizations. Volunteers that qualified for the panel were confirmed by the researchers and any identifying information was excluded from data collection.

Once the expert panel was formed, the review of the competencies was conducted via the online survey system, Qualtrics. The expert panel consensus on the competencies was collected and then used to create the final survey. This final survey also included a portion on perception of evaluation using a Likert scale as previously mentioned. Institutional Review Board (IRB) approval was sought from the Virginia Tech Institutional Review Board system. The survey was then distributed to the pilot test group for consensus and feedback.

Assistance was requested from the of one Cooperative Extension director in distributing the final survey to the states within the population of interest. The director initiated contact with Extension systems in the population of interest and requested their participation in the study. These Extension systems in each state were contacted via email and participation was requested from each director or Dean. Once participation was confirmed, survey invitations were sent out via listservs by the administration. For a copy of the recruitment email, please see Appendix G.

Due to restriction of access to the listservs, reminders were unable to be sent by the researcher. A request was sent to the director at each participating institution to send a reminder approximately one week after the start of the survey (Dillman, Smyth, & Melani, 2009). Five states elected to participate. Of these five, three agreed to send a reminder. One state declined, citing a policy to limit the number of emails from administration. One state underwent a natural disaster and state of emergency during the time of the study and the researchers opted to remove this state from participation so as not to infringe on the work of Extension in serving those in need during times of disaster.

Data Analysis

The software system, Statistical Package for Social Sciences (SPSS) was utilized in analyzing the data from both the pilot test and the final survey. Data from the pilot test was analyzed for reliability and validity. Internal validity was examined as it allows the researchers to ensure that the measures are examining the intended construct (Pedhazur & Schmelkin, 1991). The survey was examined for any inconsistencies, unexpected answers or errors in questions. Chronbach's Alpha was examined for internal consistency. This portion of the analysis was conducted prior to pilot testing in order to form the final survey instrument.

Once the data from the final survey instrument was collected through Qualtrics, statistical analysis of the data was conducted. The data was first examined for any inconsistencies or outliers as was the pilot test data. Incomplete data were examined and determinations made by the researchers to input an average or delete the data sets that are in error. The results from the survey of Extension educators in the population of interest

were examined for descriptive statistics. Measures of central tendency and tests of significance were examined and variance calculated.

An analysis of variance (ANOVA) was conducted to test the assumption that the variances within populations were equal. ANOVA is a statistical procedure commonly utilized to test the degree to which two or more groups vary in their responses or scores on a test or instrument (Howell, 2006; Pedhazur & Schmelkin, 1991). In this study ANOVA was utilized to determine differences in the populations based on the data collected. A summary of the significant ANOVA findings can be seen in Table 3-1 below.

Table 3-1 Significant one way ANOVA tables

	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>
Perception by education level between groups	0.916	2	0.458	4.464*
Within groups	20.719	202	0.103	
Attitude by Location between groups	13.901	3	4.634	3.556*
Within groups	264.483	203	1.303	
Subjective norm by Location between groups	61.616	3	20.539	20.988**
Within groups	198.652	203	0.979	
Culture by Location between groups	4.726	3	1.575	4.456*
Within groups	72.469	205	0.354	
Intention by Location between groups	11.546	3	3.849	3.513*
Within groups	221.318	202	1.096	
Perceived behavioral control by education level between groups	8.476	2	4.238	3.224*
Within groups	215.593	164	1.315	

* $p < .05$; ** $p < .001$

Tukey's HSD tests were also examined for all significant differences to determine how the groups differed. Please see Appendix H for the results of this analysis. For the variables of education level and program area both the F test and Levene's were

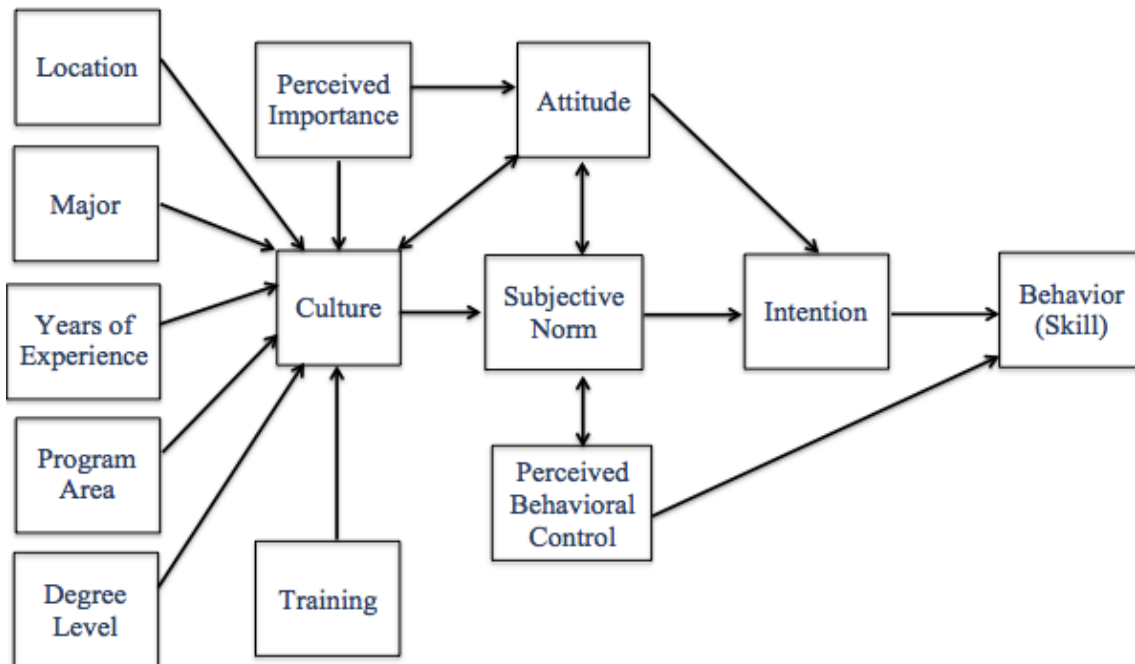
significant, however there were fewer than two cases in one level, and post-hoc analysis was not available. Similarly, for the variables of culture and degree field, the variables of program area and skill level, and the variables of program area and perception, the F test was significant, however Levene's was not. For all of these combinations, there were fewer than two cases in one level, and post-hoc analysis was not available. For the combination of variables location and training, training and degree level; major and culture, program and culture, program and intention, training and program area, perceived behavioral control and years of experience, and intention and degree, the Levene's test was significant but the F test was not. Again with these listed combinations, there were fewer than two cases in one level, and post-hoc analysis was not available.

Regarding research objective two and three, the data from the subscale of competencies was examined. This information provides insight into the competencies that Extension educators consider themselves to be skilled in, and which they perceive as important. A composite score was created for the skill level within the competencies, and for the perception of the competencies. Each competency was then ranked for skill and for perception. The top and bottom competencies were examined.

Culture of evaluation within the organization was analyzed as a subscale to begin to address research objective four. A composite score of these items was calculated for use in the path analysis. Reliability analysis was performed. The composite score for culture was utilized in the path analysis and in order to examine descriptives to make recommendations for evaluation capacity building within the organization.

The analysis for research objective four utilizes the composite scores of skill level, culture, and the data from the third scale regarding the Theory of Planned Behavior. Skill level was computed by calculating a mean score for each participant based on questions 17_1_1-17_1_49. Demographics or Extension variables that were included as independent variables or explanatory variables were program area, degree level, location (state), and time in extension. Additional independent variables included culture and the variables within the Theory of Planned Behavior model, which are subjective norm, perceived behavioral control, attitude and intention. The variable for perception of importance was computed by creating a mean score for each participant based on questions 17_2_1-17_2_49. The variable for culture was computed by creating a composite for the mean scores based on the culture subscale, questions Q19_1-Q19_27. The variable for subjective norm was computed by creating a mean score for each participant based on questions Q10_1, Q11_1R, Q12_1R, Q13_1R, Q14_1R and Q15_1R. The variable for attitude was computed by creating a mean score for each participant based on questions Q6_1R, Q7_1, and Q8_1R. The variable for intention was computed by creating a mean score for each participant based on questions Q3_1, Q27_4 and Q28_1. The variable for perceived behavioral control was computed by creating a mean score for each participant based on questions Q34_1R, Q35_1R, Q37_1, Q38_1R. For a complete list of variables and the corresponding questions grouped as subscales see Appendix Q. This path analysis provides a comprehensive overview of the components involved in the evaluation behaviors of Extension educators.

Figure 3-1: Modified Theory of Planned Behavior Model. Based on the work of Ajzen, 1991.



Multiple regression was utilized to examine the variance in each path, providing complete analysis for research objective four. Prior to conducting the regression analysis, diagnostics were utilized to check for homodasticity and to determine that underlying assumptions of normality were met. Scatterplots were utilized for this portion of analysis. For each sub-scale a Chronbach's alpha was conducted for reliability and measures of internal consistency were examined. For each component; behavior, culture and competencies, a regression analysis was conducted to determine the amount of variance accounted for by each section. Once these analysis are complete, recommendations to satisfy research objective five were determined.

Because there are separate scales within the study, several measures were taken to ensure participants understand each scale, and are answering accordingly. As these scales differ in their measurement, analysis was completed, taking this into account, examining for inconsistencies or errors in the data. Analysis of the results incorporated

the interaction of several variables on the scale for behavior, as these variables are shown to impact behavior in their interactions (Ajzen, 1991; Conner & Armitage, 1998).

Regarding research objective five, a mean weighted discrepancy score was calculated based on the Borich model. The Borich model was utilized in order to compare scores and examine for any significant differences in perception of importance of the competency and the skill in the competency (Borich, 1980; McKim, 2013; McKim & Saucier, 2011). Additionally the lowest ranking statements regarding culture were examined in order to consider means of enhancing culture within the organization. Recommendations for practice and training within Cooperative Extension were made based on these findings.

Summary

This study set out to examine the evaluation culture, competencies and behaviors within Cooperative Extension. In order to investigate a large population, quantitative methodology was employed (Howell, 2006; Pedhazur & Schmelkin, 1991). First, in determining the evaluation competencies necessary for Extension educators to demonstrate, an expert panel reviewed the competencies set forth by the Canadian Evaluation Society (Kuji-Shikatani et al., 2012). Once the competencies were reviewed they were Likert scaled for both skill level and perception of importance. In addition to the competency subscales, a subscale for culture was utilized from the ROLE instrument (Taylor-Powell & Boyd, 2008). In order to address the evaluation behaviors within Cooperative Extension, a subscale was developed based on guidelines set out by Ajzen (2011). Finally, variables relating to Extension were included in the instrument. This instrument was pilot tested and internal validity was confirmed. Data was then collected

in the participating states and was analyzed using SPSS. Preliminary data screening including descriptives and ANOVA statistics were examined in order to determine the data's usability for multiple regression analysis. Competencies were examined for both perception and skill level. A model for path analysis was developed based on Ajzen's (2006) model and was modified to include culture and Extension variables. Mean discrepancy scores were calculated to determine areas of development needed within evaluation competencies. Recommendations for practice were formulated based on the findings.

Chapter 4: Results

Introduction

The primary purpose of this study was to examine the evaluator competencies based on the Canadian Evaluation Society Competencies for Canadian Evaluation Practice and determine which evaluation competencies extension educators should possess (Buchanan & Kuji-Shikatani, 2014). The Canadian competencies were chosen, as these are the most current and widely accepted in the field of evaluation in North America, given that the United States does not have a national list of agreed-upon competencies (King et al., 2001; Melkers & Roessner, 1997; Seidling, 2015). The second part of the study was to determine which competencies the educators do possess and for which competencies there perceived needs for training or improvement. Finally, the study examined the overall behavior and culture of evaluation within Cooperative Extension and created recommendations for improving the evaluation culture and practices within Extension. The objectives of this study were as follows:

1. Identify the accepted evaluation competencies Cooperative Extension educators should be able to demonstrate in their professional work.
2. Identify which evaluation competencies Cooperative Extension educators currently recognize that they practice in their professional work.
3. Identify the evaluation competencies that are perceived as important within the Extension organization.
4. Identify those factors of the Theory of Planned Behavior that influence evaluation behavior and culture within Cooperative Extension.

5. Propose Evaluation Capacity Building recommendations within Cooperative Extension to increase evaluation competencies, behaviors and culture.

Context for Results

State Participation

Invitation emails as well as follow-up emails were sent to Extension Directors in the population of interest. A total of five states agreed to participate. Of the five states, only three generated useable data as one state generated a 4% response rate ($n=11$) and another experienced a natural disaster and state of emergency at the start of their participation in the study. These two states were dropped from analysis.

Item Non-response

In the present study, item non-response was an issue in 16% of useable surveys ($n=35$ out of 222). The option to completely discard the incomplete surveys was therefore not valid, as a majority would have been omitted. To combat this issue of item non-response the researcher examined the possibility of imputing mean scores in missing item responses. A t-test was conducted to examine the differences in mean scores with imputation and without. The results indicated that while no statistical differences appeared in the mean score comparisons for the variables of skill, perception, culture, subjective norm and intention, there were statistical differences in utilizing imputation in attitude mean and perceived behavioral control mean scores. Imputation was not used in the analysis for this study. However, where possible, pairwise deletion was used over listwise deletion in SPSS. SPSS defaults to listwise deletion, which removes an individual's response from analysis if any one of the items is missing a response. Pairwise deletion includes all the answered items, even if one is missing. Pairwise is not

available in all functions of SPSS, therefore readers may notice that the N may vary in some analysis reporting. The states included in this study are labeled as State One, State Two, State Three and State Four. The data from this study can be utilized to paint a picture of the general climate of evaluation in the Mid-Atlantic region.

Preliminary Data Screening Methods

At the conclusion of data collection, data was examined for missing and incomplete data sets. Response rates were examined and item non-response was assessed. According to the American Association for Public Opinion Research (AAPOR), a leading authority on survey data collection, a complete response is defined as 80% or more of items completed, a partial response is defined as having 50%-79% of items completed and a refusal is defined as 49% or less of items completed (American Association for Public Opinion Research, 2015). Utilizing these definitions the response counts were calculated below.

Table 4-1: Overall response rates

	<i>n</i>	<i>%</i>
Total	416	
Refusal	194	46.63
Partial	15	3.61
Complete	207	49.76
Complete + Partial	222	53.37
Potential Respondents	1690	
Response Rate with refusals		24.62
Response rate of Complete and partials		13.14

Response rates in online surveys have been progressively decreasing and the overall response rate of 13% for this study is not uncommon (Abraham, Maitland, & Bianchi, 2006; Groves, 2006; Kohut, Keeter, Doherty, Dimock, & Christian, 2012). Given that this was an online study, response rates of 25% are typical (Abreu & Oliveira,

2014; Busby & Yoshida, 2015; Cook et al., 2000; Nulty, 2008). Although the response rate is low, the population represented in this study included individuals from a wide variety of program areas, education levels and years in Extension.

The usable N for this study was 222, combining the complete and partial responses. Responses with less than 50% of items answered were omitted for integrity of the data set, following the guidelines of AAPOR (AAPOR Task Force on Survey Refusals, 2014; American Association for Public Opinion Research, 2015). Given that these responses did include some item-missing data; procedures were implemented to investigate and minimize the impact of this issue. These procedures are detailed further in this chapter.

Data from the pilot test (State Four) was added to the data set from the final survey. The overall response rate of useable data was calculated at 13% based the estimated population of Extension agents in the four states. The population was estimated to be 1690 individuals based on the best available data from the participating states.

Demographics and Participant Information

Participants were asked to identify which of the participating states they were from. Twenty percent of participants were from State One ($n=42$). Forty four percent of participants were from State Two ($n=92$). State Three participants represented 26% ($n=55$) and 10% of the survey population was comprised of State Four participants from the pilot study ($n=20$).

Table 4-2: Response rates by state

State	Frequency	%
1	42	20.1
2	92	44
3	55	26.3
4	20	9.6
Total	209	

Respondents were asked to identify the program areas within Extension that they worked with. As program areas and titles differ state to state, the set of optional responses were generated from the US eXtension website (eXtension, 2015). Participants were able to select as many programs as they wished from the options and were also able to select “other” and write in the program area or areas that they worked with. Response to this and all demographic questions was optional to alleviate concerns for participants about their views being identified by researchers. If participants selected multiple program areas, they were identified as “multiple” for the purposes of reporting. Table 4-3 below provides a summary of program areas represented within this study.

Table 4-3: Program areas represented in study

Program Area	Frequency	%
Agriculture and Food Systems	58	27.5
Community, Leadership, and Economic Vitality	1	5.0
Environmental and Natural Resources	12	5.7
Nutrition and Healthy Families	28	13.3
Youth Development and 4-H	35	16.6
Lawn and Garden	4	1.9
Other	20	9.5
Multiple	53	25.1
Total	211	

For those respondents that selected “other” as their program area, they could opt to provide a written title for their program area. These titles included “human

development” and “graphics” among others. For a full list of the titles specified in the category of “other”, please see Appendix I.

Respondents were also asked to identify the highest level of education that they had completed. This information was utilized in the regression model as an exogenous variable. Table 4-4 shows the participants by degree level.

Table 4-4: Education level of participants

Level of Education	Frequency	%
Bachelors	38	18.5
Masters	133	64.9
Doctorate	34	16.6
Total	205	

Respondents were provided with a space to indicate the major, field, or specialty of their degree. These responses were open ended and participants could type in their designation. As these titles and designations differ from college to college, they were grouped by the researcher into larger representative categories. A complete list of all responses and the subsequent categorization can be seen in Appendix J. If individuals reported multiple degrees, the highest level degree category was used. If individuals reporting multiple degrees did not specify which degree level corresponded to the degree field, these were categorized as “multiple”. Those that were categorized as “other” included those that stated their degree was “not ag” or used acronyms unfamiliar to the researcher. A summary of the degree fields can be seen in Table 4-5 below.

Table 4-5: Degree major or field of participants

Degree Major or Field	Frequency	%
Agricultural & Extension Education	22	11.2
Agricultural Economics and Agribusiness	7	3.6
Agriculture Leadership	1	0.5
Agriculture Sciences	9	4.6
Agriculture Technology	1	0.5
Agronomy, Plant and Soil Sciences	18	9.2
Animal and Poultry Sciences	24	12.2
Business and Economics	10	5.1
Child and Family Studies	5	2.6
Community and Public Health	3	1.5
Design	2	1
Education	9	4.6
Entomology	2	1
Environmental Sciences	3	1.5
Family and Consumer Science	10	5.1
Fisheries and Wildlife	2	1
Food Science, Health and Nutrition	8	4.1
Forestry and Natural Resources	8	4.1
History and Political Science	2	1
Horticulture	10	5.1
Human Ecology and Human Environmental Science	3	1.5
Interdisciplinary Studies	1	0.5
Psychology and Counseling	4	2
Science and Engineering	7	3.6
Other	6	3.1
Multiple	19	9.7
Total	196	

Next, participants were asked to report their length of service in Cooperative Extension. In order to utilize this data for multiple regression responses that were written out (ex: twenty two) were translated to numbers and items that were estimates or fractions were converted to the nearest number (ex: Over 30 years was converted to 30; 6 months was converted to .5). The least amount of time reported was less than one year of service and the longest amount of service reported was 42 years. The average for years

of experience was 14.5 years. A summary of the data for years of experience can be seen in the table below.

Table 4-6: Descriptives regarding participants' years of experience

Years of Experience		
<i>M</i>		14.5291
Median		14
Mode		25
<i>n</i>	Valid	193
	Missing	29

Respondents were also asked if they had completed any training related to evaluation. Of the 222 useable responses, 193 individuals (87%) disclosed this information. A summary of responses regarding training in evaluation can be seen in the table below.

Table 4-7 Participant responses regarding training in evaluation

Training in Evaluation	Frequency	%
Yes	161	83.4
No	28	14.5
I don't know	4	2.1
Total	193	

In addition, those who responded that they had completed training in Evaluation were asked to describe the training. Examples of descriptions include “A half day training on evaluations as well as a masters level class on program evaluation”, “In-services”, and “Program planning and evaluation techniques/methods taught by Extension specialists” among others. For a full list of the trainings described, please see

Appendix K. Also note that identifying information has been omitted from these responses.

After examining response rates, the data was examined for inconsistent responses. No inconsistencies were found and no incorrect or invalid responses were found. The data was also examined for missing values. Missing values were found and examined for patterns. As no associations with any groups of individuals were found for missing items aside from the increase through the study, the decision was made to include all partial responses in the analysis.

Given that this study used multiple regression, additional data screening measures were completed to ensure data was acceptable to be used in regression analysis.

Regression diagnostics began with an examination for outliers. This included an examination of box and whiskers plots, standardized residuals, Cook's D and Leverage values. While the box and whiskers plots did show a small number of outliers, only one was found to be significant. Further investigation using Cook's D and Leverage statistics demonstrated that this case was not a concern as the values were all within the accepted range. By examining casewise diagnostics, we find that the number of possible outliers is less than 1% of the total participants. At this low level these outliers likely have little to no impact on the sample and therefore inclusion will maintain the relative diversity of the sample (Warner, 2012).

Data was examined for skewness and kurtosis. Skewness occurs when scaled responses exhibit asymmetrical distribution (Keith, 2006; Warner, 2012). Skew value can be positive or negative, indicating a shift left or right in a normally distributed set (Keith, 2006; Warner, 2012). Kurtosis is the sharpness of the peak of a distribution curve

(Keith, 2006; Warner, 2012). The higher the score for kurtosis, the sharper the resulting peak for that score on a histogram (Keith, 2006; Warner, 2012). These tests did reveal some items to have non-normal distribution but upon further examination it was determined that these items were most likely skewed due to a social desirability bias. Examples of skewed items include skill level for competency 1.2 – “Acts ethically and strives for integrity” (skew = -2.968; kurtosis = 12.695). This item was skewed to the right and exhibited a higher than expected peak. Another example is importance for competency 1.4 – “Considers human rights and public welfare” (skew = -1.255). Kurtosis was in the expected range for this item. From the culture subscale an example is the statement “Respects perspective and opinions of others” (skew = -1.314; kurtosis = 2.195). In each of these items there is a high probability that both skew and kurtosis were impacted by social desirability bias (Gittelman, Lange, A. Cook, & M. Frede, 2015; Warner, 2012). Individuals may have self-reported skill and importance of these items higher (on the right side of the scale) because society has influenced the population to value these behaviors and skills (Warner, 2012). Overall 19 of items were found to exhibit skewness or kurtosis outside of the normal range. These items only represent 13% of total items in the instrument.

Additional data cleaning measures were taken to ensure that demographic data was able to be statistically analyzed. Variables for degree level, program area, and location were criterion scored. In order to utilize degree area as a factor in multiple regression, participants answers were categorized and then criterion scored to manage the multiple categories within this item.

Mean scores were computed for the following subscales: skill, perception of importance, culture, attitude, perceived behavioral control, intention, and subjective norm. Reliability analysis was conducted for each of these scales as well as the overall instrument. The overall instrument exhibited a Chronbach's alpha of 0.956 (141 items). The table below shows the scale and reliability coefficient for each subscale of the instrument.

Table 4-8: Reliability analysis of instrument subscales

Scale	Reliability
Competency Skill Level	0.957
Importance of Competency	0.961
Culture	0.943
Overall Theory of Planned Behavior	0.772
Theory of Planned Behavior - Intention Subscale	0.732
Theory of Planned Behavior - Attitude Subscale	0.61
Theory of Planned Behavior - Subjective Norm Subscale	0.702
Theory of Planned Behavior - Perceived Behavioral Control Subscale	0.436

The subscale of perceived behavioral control exhibits a low reliability score. Possible reasons for this include three of the four questions in this scale were originally negatively coded items. This subscale also had the most item-missing values as was determined by the preliminary data screening. Additionally with the computation of reliability in SPSS there is not a means by which to utilize pairwise deletion, and therefore listwise deletion was used, resulting in a high number of missing values compared to the other subscales.

Frequencies and descriptives were examined for each of the subscales. No errors were observed. These subscales were plotted against each other and five combinations resulted in low correlations. The highest correlation was found between perception of importance and skill ($r=.223, p<.05$). This does show a positive relationship between perception of importance and skill.

Survey of Non-respondents

In order to examine for non-response bias, a phone survey of non-respondents was developed based on the original survey instrument. The non-respondent phone survey contained 10% of the initial survey questions, selected at random. The non-respondent phone survey is available in Appendix L. A list of all participating counties from the four states was compiled by the researcher and numbered. A random number generator was utilized to select counties at random. The researcher then telephoned the Extension office in this county. If the agent answering the phone in the county had not taken the survey they were asked to complete the non-respondent survey over the phone. Ten percent of counties were surveyed for the pool of non-respondents ($n=30$).

Results from the non-respondent survey showed no significant differences in respondents and non-respondents on the scales of skill and perception of evaluation competencies. However significant differences were found between the populations on the scales of culture and the Theory of Planned Behavior. These differences are taken in to consideration when discussing the results of the study.

Research Objective 1: Identify the accepted evaluation competencies Cooperative Extension educators should be able to demonstrate in their professional work.

The goal of research objective one was to utilize an expert panel to determine which evaluation competencies Cooperative Extension educators should be able to demonstrate in their professional work. Participants in the expert panel were also asked to provide written feedback on any questions that they felt needed to be deleted or edited in some way, or feedback regarding the study in general. Six out of 15 expert panelists chose to provide feedback regarding the competencies. Responses indicated that the experts felt all competencies were important to the duties of an Extension educator.

The review by the expert panel resulted in 100% agreement on 21 items being rated either “somewhat important” or “very important” for Extension educators in their professional work. Three of the 49 competencies exhibited agreement of 69.23%, which was the lowest agreement within the study. These three competencies were still deemed as important with a 50% or greater total agreement, and therefore they were included in the final instrument.

Based on the fact that all 49 competencies were ranked as either “*somewhat important*” or “*very important*” by the expert panel demonstrates that the leaders of evaluation within Cooperative Extension place a high value on these skills. Upon further investigation six competencies exhibited unanimous agreement of “*very important*” from the expert panel. The first competency that was found to have unanimous agreement was 1.2 “Acts ethically and strives for integrity and honesty”. This competency also was ranked as a top skill among participants as well as having top ranking importance among participants. Next, the competency 1.3 “Respects all stakeholders” was unanimously

agreed upon as “*very important*” for Extension educators to exhibit. This was also ranked as a top skill among participants from each of the four states. Additionally this competency was ranked top in importance by participants. Competency 5.3 “Uses listening skills” also exhibited unanimous agreement by the expert panel. Like the previously mentioned competencies, this was also ranked as a top skill for participants. Moreover this was ranked in top importance for the four participating states. Competencies 5.6 “Uses facilitation skills (group work)”, 5.7 “Uses interpersonal skills (individual and teams)” and 5.8 “Uses collaboration / partnering skills” were also unanimously agreed upon by the expert panel to be very important for Extension educators to exhibit. However, these skills were not the top ranked for participants in either skill or importance. For a complete table of all competencies and responses from the expert panel, please see Appendix M.

Research Objective 2: Identify which evaluation competencies Cooperative Extension educators currently recognize that they practice in their professional work.

Evaluation competencies examined in this study were taken from the Canadian Evaluation Society competencies as these are the most widely accepted in North America at this time (Kuji-Shikatani et al., 2012). The competencies were ranked on a Likert scale of skill with 1 being *very unskilled*, 2 being *somewhat unskilled*, 3 being *somewhat skilled* and 4 being *highly skilled*. Participants were asked to self-report their skill level using this scale for each of the 49 competencies. Descriptives and frequencies were examined to determine the skills that Extension educators report that they practice.

Analysis was completed to determine the top five evaluation competencies that Cooperative Extension educators state that they are skilled in. The researcher analyzed data from the online survey to answer research objective two. The researcher compiled data from the survey on variables measuring skill level in order to compute a mean score for each competency based on skill. The competency that had the highest overall mean score for skill level was Competency 1.2 “Acts ethically and strives for integrity and honesty” ($M=3.85$, $SD=0.408$). This could be due in part to social desirability bias and the self-reporting of skill level. Table 4-9 below summarizes the top five ranked competencies by skill level.

Table 4-9: Top ranked competencies by skill level.

Competency	<i>n</i>	<i>M</i>	<i>SD</i>	Rank
1.2 Acts ethically and strives for integrity and honesty	222	3.85	0.408	1
1.3 Respects all stakeholders	222	3.73	0.467	2
5.10 Demonstrates professional credibility	217	3.56	0.567	3
5.3 Uses listening skills	219	3.48	0.577	4
5.2 Uses verbal communication skills	219	3.48	0.593	4
5.1 Uses written communication skills and technologies	216	3.44	0.636	5

Analysis was also conducted to determine the lowest ranking competencies, indicating the lowest skill level for survey respondents. The competency with the lowest overall mean score was competency 2.2 “Specifies program theory” ($M=2.55$, $SD=0.767$). The table below summarizes the lowest ranked competencies for skill level. For a full ranking of all competencies based on skill level please see Appendix N.

Table 4-10: Bottom ranked competencies by skill level

Competency	<i>n</i>	<i>M</i>	<i>SD</i>	Rank
2.2 Specifies program theory				1
2.6 Develops evaluation designs				2
4.2 Attends to issues of evaluation feasibility	213	2.55	0.767	2
3.9 Shares evaluation expertise	216	2.61	0.732	3
3.2 Examines organizational, political, community and social contexts	215	2.61	0.765	
3.8 Applies evaluation competencies to organization and program measurement challenges	217	2.65	0.786	
	215	2.66	0.768	4
	217	2.71	0.748	5

The competencies that ranked lowest on the scale for skill included competency 2.2 “Specifies program theory”; competency 2.6 “Develops evaluation designs”; competency 4.2 “Attends to issues of evaluation feasibility “; competency 3.9 “Shares evaluation expertise “; and competency 3.8 “Applies evaluation competencies to organization and program measurement challenges “, all of which exhibited 84.6% agreement regarding importance from the expert panel. These competencies also ranked the lowest on importance for the participants. Additionally competency 3.2 “Examines organizational, political, community and social contexts” ranked among the lowest regarding skill but exhibited 92% agreement among expert panelists regarding importance. A majority of experts in the field deemed these competencies important, however skill level within the organization may need further development.

Research Objective 3: Identify the evaluation competencies that are perceived as important within the Extension organization.

The same list of competencies was utilized to examine perception of importance within Cooperative Extension. Participants were asked to rate how strongly they agree

with the importance of each competency on a scale of one through four with 1 being *strongly disagree*, 2 being *disagree*, 3 being *agree*, and 4 being *strongly agree*.

Analysis was completed to determine the top five evaluation competencies that Cooperative Extension educators perceive as important to the organization. The researcher analyzed data from the online survey to answer research objective three. The researcher compiled data from the survey on variables measuring perception of importance in order to compute a mean score for each competency based on importance.

The competency that had the highest overall mean score for importance was competency 1.2 “Acts ethically and strives for integrity and honesty” ($M=3.9$, $SD=0.295$). A summary of the top five ranking competencies in importance can be seen below in table 4-11. For a complete ranking of all competencies based on perception of importance, please see Appendix O.

Table 4-11: Top ranked competencies by perception of importance

Competency	<i>n</i>	<i>M</i>	<i>SD</i>	Rank
1.2 Acts ethically and strives for integrity and honesty	219	3.90	0.295	1
1.3 Respects all stakeholders	219	3.81	0.403	2
5.10 Demonstrates professional credibility	214	3.73	0.446	3
5.3 Uses listening skills	216	3.72	0.449	4
1.5 Provides independent and impartial perspective	218	3.69	0.493	5

Competencies 1.2 “Acts ethically and strives for integrity and honesty”; 1.3 “Respects all stakeholders”; 5.10 “Demonstrates professional credibility”; and competency 5.3 “Uses listening skills” were all rated as having the most perceived importance within Extension and similarly, these competencies were also all ranked

highest for skill level. Additionally, competency 1.5 “Provides independent and impartial perspective” was ranked among the top five highest in importance but it did not rank among the highest for skill level.

Analysis was also conducted to determine the lowest ranking competencies, indicating the lowest perception of importance among survey respondents. The competency with the lowest overall mean score for importance was competency 2.2 “Specifies program theory” ($M=2.87$, $SD=0.695$). A summary of the lowest ranked competencies for perception of importance can be seen below.

Table 4-12: Bottom ranked competencies by perception of importance

Competency	<i>n</i>	<i>M</i>	<i>SD</i>	Rank
2.2 Specifies program theory	211	2.87	0.695	1
4.2 Attends to issues of evaluation feasibility	211	3.09	0.648	2
2.6 Develops evaluation designs	215	3.13	0.589	3
3.9 Shares evaluation expertise	213	3.13	0.6	3
3.2 Examines organizational, political, community and social contexts	213	3.14	0.665	4
3.6 Attends to issues of evaluation use	211	3.14	0.606	4
3.8 Applies evaluation competencies to organization and program measurement challenges	213	3.15	0.614	5

Examining the competencies that ranked lowest in importance, competency 2.2 “Specifies program theory” was found to be the lowest ranked by Extension participants, however this competency exhibited 100% agreement regarding importance from the expert panel. This competency also ranked lowest in skill level. Competencies 4.2 “Attends to issues of evaluation feasibility”; 2.6 “Develops evaluation designs”; 3.9 “Shares evaluation expertise”; and competency 3.8 “Applies evaluation competencies to organization and program measurement challenges” ranked among the lowest in

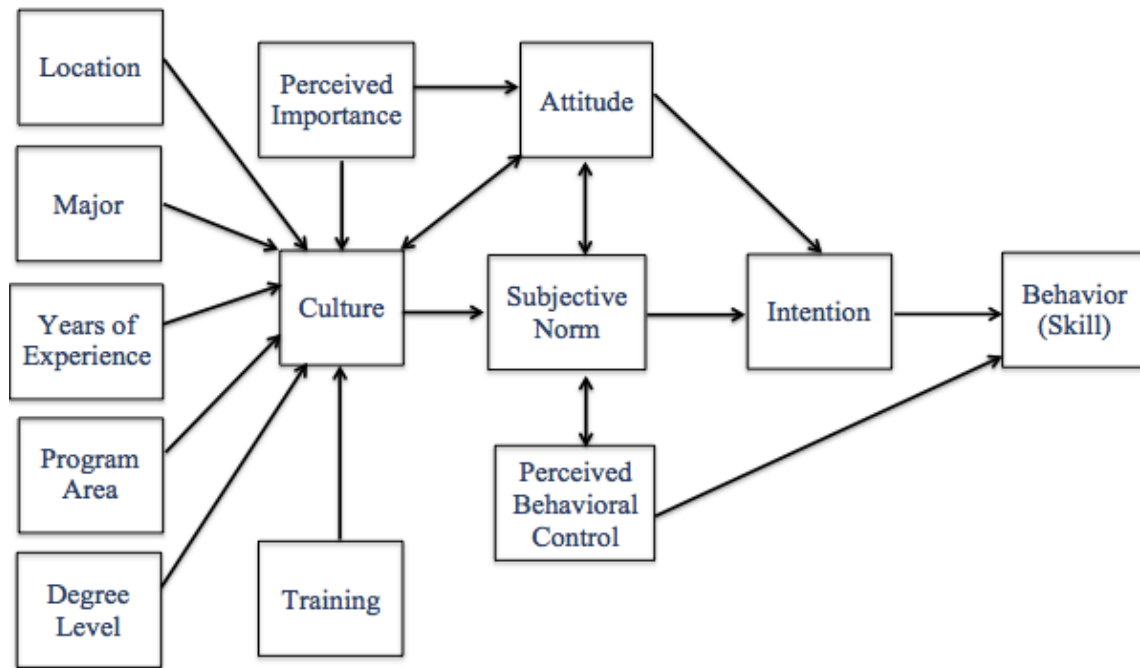
perception of importance and also among the lowest in skill level. These skills exhibited 84.6% agreement from experts regarding importance. Competencies 3.2 “Examines organizational, political, community and social contexts and 3.6 “Attends to issues of evaluation use” exhibited 92% agreement regarding importance from the expert panel, however these ranked among the lowest importance with Extension educators.

Research Objective 4: Identify those factors of the Theory of Planned Behavior that influence evaluation behavior and culture within Cooperative Extension.

In order to investigate the culture and behaviors regarding evaluations in Cooperative Extension two instruments were added to the competencies examined in research objectives one through three. The design of this instrument did include negatively coded items. Prior to analysis and calculation of mean scores for this scale and its subscales negatively coded items were recoded. The negatively coded items included Q6, Q8, Q11, Q12, Q13, Q14, Q15, Q34, Q35, Q38. These items can be seen in Appendix P.

In order to identify factors influencing evaluation behavior, multiple regression was utilized. Regression models were developed based on the path model developed by the researcher. The regression models were utilized to explore which variables were statistically significant in explaining the dependent variable of skill. The overall goal of this model was to explain the variance in skill level. The use of path analysis in this study utilized stepwise regression in order to regress the exogenous, or independent, variables on the endogenous, or dependent, variables within the model. The path model developed by the researcher can be seen below.

Figure 4-1: Modified Theory of Planned Behavior Model. Based on the work of Ajzen (1991)



The multiple regression model with all 12 predictors produced $R^2 = .251$, $F(12, 135) = 3.777$, $p < .001$. As can be seen in Table 14-3, attitude and perception of importance scales had significant positive regression weights. The remaining variables did not exhibit significance when used in a direct model.

Table 4-13: Regression coefficients for direct model of all predictors

Coefficients ^a						
		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
Model 1	(Constant)	-4.361	8.876		-0.491	0.624
	Perception Mean	0.501	0.113	0.409	4.441	0.00
	Culture Mean	-0.06	0.064	-0.085	-0.939	0.349
	Intention Mean	-0.045	0.041	-0.106	-1.107	0.27
	Attitude Mean	0.077	0.033	0.222	2.361	0.02
	SubNorm Mean	-0.014	0.038	-0.032	-0.38	0.704
	PBC Mean	0.004	0.029	0.011	0.13	0.897
	Location	0.097	0.155	0.051	0.626	0.532
	Major	0.141	0.146	0.084	0.966	0.336
	Program Criterion	-0.548	0.393	-0.112	-1.395	0.165
	DegreeLevel					
	Criterion	1.914	2.419	0.063	0.791	0.43
	Training Criterion	0.067	0.452	0.012	0.148	0.882
	Years of Experience	-0.002	0.003	-0.051	-0.626	0.532

^a Dependent Variable: SkillMean

The multiple regression model for path analysis of skill with the predictors of intention and perceived behavioral control produced $R^2 = .039$, $F(2, 171) = 3.486$, $p < .05$. Intention had a significant positive regression weight, indicating individuals with higher score on the scale for intention have a higher self-reported skill level, after controlling for the other variable in the model. Perceived behavioral control did not significantly contribute to the path model for skill.

Next, subjective norm and attitude were regressed on the endogenous variable of intention. This model was found to be significant and explained 11.8% of variance within intention ($R^2 = .118$, $F(2, 207) = 13.536$, $p < .001$). Attitude was found to be a significant predictor of intention, however subjective norm was not significant in this model.

Following the Theory of Planned Behavior model, the variables of perceived behavioral control, attitude and culture were regressed on subjective norm. The multiple regression model for subjective norm produced $R^2 = .131$, $F(3, 170) = 8.529$, $p < .001$. Attitude had a significant positive regression weight, indicating individuals with a more positive attitude regarding evaluation have a higher score on the scale for subjective norm, after controlling for the other variables in the model. Perceived behavioral control and culture did not significantly contribute to the path model for subjective norm.

Culture and perception were regressed on attitude. The multiple regression model for attitude produced $R^2 = .071$, $F(2, 200) = 10.574$, $p < .001$. Both culture and perception had a significant positive regression weight, indicating individuals with higher scores on the culture subscale and a more positive perception of the importance of evaluation competencies have a more positive attitude regarding evaluation, after controlling for the other variables in the model.

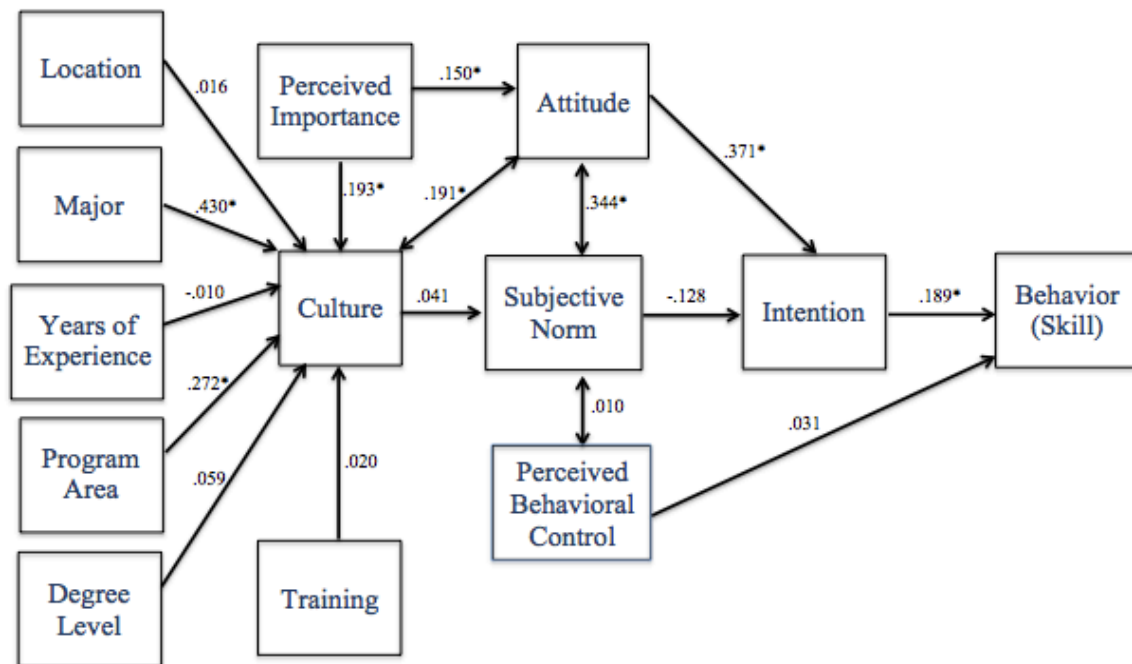
Next, the exogenous variables of perception of importance, years of experience, level of education, college major, location, training in evaluation and program area were regressed on culture. In order to complete the regression analysis for the categorical variables, criterion scaling was utilized. Criterion scaling allows regression analysis of categorical variables with a large number of categories (Keith, 2006). The categorical variables utilized in this study ranged from three categories in variables such as level of education, to 26 categories in the variable of college major.

The multiple regression model for culture produced $R^2 = .28$, $F(7, 153) = 8.511$, $p < .001$. Perception, program area, and college major had a significant positive regression weight, indicating individuals with a higher perception regarding evaluation have a

higher score on the scale for culture, and that program area and college major have an impact on evaluation culture after controlling for the other variables in the model.

Location, training in evaluation, degree level and years of experience did not significantly contribute to the path model for evaluation culture.

Figure 4-2: Completed path analysis utilizing the modified Theory of Planned Behavior model. Based on the work of Ajzen (1991)



Paths were then analyzed for direct and indirect effects. Intention and Perceived behavioral control are the only variables that have direct effects on the behavior in this model. With the branching of this model, several paths resulted in negligible effects on the dependent variable. The direct, indirect and total effects can be seen below in Table 4-14.

Table 4-14: Direct and indirect effects of the path model

Variable	Path	Direct Effect	Indirect Effect	Total Effect
Intention		0.189		0.189
Perceived Behavioral Control	through attitude	0.031		
			0.00024	
	through subjective norm		-0.00024	0.031
Subjective Norm	through attitude		0.02412	
	through perceived behavioral control		0.00031	
	through intention		-0.02419	0.00024
Attitude	through intention		0.07012	
	through subjective norm		-0.00832	
	through perceived behavioral control		0.00011	0.06191
Perceived Importance	through attitude		0.01051	
	through subjective norm		-0.00019	
	through perceived behavioral control		0	0.01032
Culture	through attitude		0.01339	
	through subjective norm		-0.00099	
	through perceived behavioral control		0.00001	0.01241
Training	through attitude		0.00027	
	through subjective norm		-0.00002	
	through perceived behavioral control		0	0.00025
Location	through attitude		0.00214	
	through subjective norm		-0.00002	
	through perceived behavioral control		0	0.00212
Major	through attitude		0.00576	
	through subjective norm		-0.00042	
	through perceived behavioral control		0	0.00534
Years of Experience	through attitude		-0.00013	
	through subjective norm		0	
				-
	through perceived behavioral control		0	0.00013
Program Area	through attitude		0.00364	
	through subjective norm		-0.00026	
	through perceived behavioral control		0	0.00338
Degree Level	through attitude		0.00079	
	through subjective norm		-0.00006	
	through perceived behavioral control		0	0.00073

Research Objective 5: Propose Evaluation Capacity Building recommendations within Cooperative Extension to increase evaluation competencies, behaviors and culture.

Competencies

In order to further examine the differences between individuals perception of evaluation competencies as important as compared to individuals skill level, a mean weighted discrepancy score (MWDS) was calculated based on the Borich model for each of the 49 competencies (Borich, 1980; McKim & Saucier, 2011). This calculation utilized the free excel-based MWDS calculator developed by McKim and Saucier (2011). The competencies with the highest discrepancy scores were then identified.

Competency 2.12 “Assesses the reliability of data” was the top ranked score for discrepancy, meaning this competency had the largest difference in the mean scores between importance and skill (MWDS=1.92, $n=212$). A summary of the competencies and the mean weighted discrepancy scores can be seen in Table 4-15 below. A full list of competencies ranked by mean weighted discrepancy score can be found in Appendix R.

Table 4-15: Top ranked mean weighted discrepancy scores for skill vs. perception of importance.

Competency	MWDS	<i>n</i>	Ranking
2.12 Assesses reliability of data	1.92	212	1
2.13 Assesses trustworthiness of data	1.82	212	2
2.11 Assesses validity of data	1.71	214	3
2.6 Develops evaluation designs	1.59	215	4
2.9 Develops reliable and valid measures/tools	1.57	213	5

Culture

In order to examine the scale of evaluation culture within Cooperative Extension the scale for culture developed by Preskill and Torres (1999) was examined and mean scores were ranked for the statements with the highest and lowest agreement scores. The statement with the highest overall mean score, which represents the highest level of agreement, is “Extension professionals ask each other for information about work issues and activities” ($M=4.24$, $SD=0.824$). Table 4-16 below provides the top five ranked statements regarding culture of evaluation.

Table 4-16: Top ranked statements regarding the culture of evaluation within Cooperative Extension

Statement	<i>M</i>	<i>SD</i>	<i>n</i>	Ranking
Extension professionals ask each other for information about work issues and activities.	4.24	0.824	215	1
Extension professionals continuously look for ways to improve processes, products and services.	4.12	0.832	215	2
Extension professionals tend to work collaboratively with each other.	4.00	0.857	215	3
Extension professionals respect each other’s perspectives and opinions.	3.91	0.849	215	4
Extension professionals use data/information to inform their decision-making.	3.89	0.754	213	5

The lowest ranking competencies were also examined. Within the culture subscale the overall lowest ranking statement was “Extension professionals are confident that mistakes or failures will not affect them negatively” ($M=2.78$, $SD=0.99$). The five lowest ranking statements for culture can be seen below in Table 4-17.

Table 4-17: Bottom ranked statements regarding the culture of evaluation within

Cooperative Extension

Statement	<i>M</i>	<i>SD</i>	<i>n</i>	Ranking
Extension professionals are confident that mistakes or failures will not affect them negatively.	2.78	0.99	214	1
Extension professionals are encouraged to offer dissenting opinions and alternative viewpoints.	3.04	1.048	213	2
There is little competition among Extension professionals for recognition or rewards.	3.06	1.113	215	3
In meetings Extension professionals are encouraged to discuss the values and beliefs that underlie their opinions.	3.15	1.08	213	4
Extension professionals generally trust their administrators or supervisors.	3.15	1.101	215	4
Administrators and supervisors make decisions after considering the input of those affected	3.18	1.144	213	5

Behavior

Upon examining the path model based on the Theory of Planned Behavior, regression analysis, it was determined that perceived importance of evaluation competencies has a significant impact on culture of evaluation within Cooperative Extension as well as on the attitude regarding evaluation within the organization. Next, from the model it can be seen that culture of evaluation has a significant impact on attitude regarding evaluation. Moreover, it was found that attitude regarding evaluation significantly impacts ones intention to conduct evaluations. Finally, it was determined that intention to conduct evaluation has a significant impact on the overall behavior of conducting evaluations. These paths and relationships will be further discussed in chapter five.

Summary

Review by an expert panel indicated agreement of importance of all 49 evaluation competencies taken from the Canadian Evaluation Society (Kuji-Shikatani, 2015). Data from four participating states including that from the pilot test were collected via online survey and analyzed using SPSS. Evaluation competencies were examined for highest and lowest score on the scale for skill. Next, the evaluation competencies were examined for perception of importance and the highest and lowest ranking competencies were determined. Additionally, a path model was developed based on the Theory of Planned behavior which incorporated the variables of skill, culture, perception of importance and the underlying Extension variables. Multiple regression analysis was conducted using the path model. Significant paths were identified, explaining portions of the variance in the skill, attitude, subjective norm, intention and culture of evaluation within Cooperative Extension. Mean weighted discrepancy scores were calculated for the difference between skill and perception of importance regarding each of the evaluation competencies in order to identify areas of possible increased focus for Cooperative Extension. Finally, the subscale for culture was examined to determine how the culture of evaluation within Cooperative Extension may be improved in the future.

Chapter 5: Summary and Discussion

This chapter summarizes the study and outlines conclusions drawn from the statistical analysis presented in chapter four. Discussions of findings regarding the five research objectives will be presented as well as limitations of the study. Implications are detailed regarding the study's position relative to current evaluation practices within Cooperative Extension. Recommendations for practice and future research will be outlined.

Summary of the study

Problem Statement

Currently, within the field of Cooperative Extension there is an increasing demand for evaluation of programs and activities (McClure et al., 2012). This demand is caused by a number of things including budget and administration related requests (Radhakrishna & Martin, 1999). Given that Cooperative Extension serves the public, there is a clear need for the programs to be of good quality and meet the needs of those they serve. The use of evaluation in any organization can serve to enhance program results and benefit both the stakeholders and participants of the programs.

Purpose and Objectives

The primary purpose of this study was to examine the evaluator competencies based on the Canadian Evaluation Society Competencies for Canadian Evaluation Practice and determine which evaluation competencies extension educators should possess (Buchanan & Kuji-Shikatani, 2014). The Canadian competencies were chosen, as these are the most current and widely accepted in the field of evaluation in North America, given that the United States does not have a national list of agreed-upon

competencies (King et al., 2001; Melkers & Roessner, 1997; Seidling, 2015). The second part of the study was to determine which competencies the educators do possess and for which competencies were there perceived needs for training or improvement. Finally, the study examined the overall behavior and culture of evaluation within Cooperative Extension and created recommendations for improving the evaluation culture and practices within Extension. The objectives of this study were as follows:

1. Identify the accepted evaluation competencies Cooperative Extension educators should be able to demonstrate in their professional work.
2. Identify which evaluation competencies Cooperative Extension educators currently recognize that they practice in their professional work.
3. Identify the evaluation competencies that are perceived as important within the Extension organization.
4. Identify those factors of the Theory of Planned Behavior that influence evaluation behavior and culture within Cooperative Extension.
5. Propose Evaluation Capacity Building recommendations within Cooperative Extension to increase evaluation competencies, behaviors and culture.

Methodology

This study used a quantitative approach in order to examine the evaluation competencies, culture and planned behaviors of Cooperative Extension educators. The competencies utilized were based on the Canadian Evaluation Competencies, as these are the most widely accepted in North America (Buchanan & Kuji-Shikatani, 2014). A subscale of culture was also utilized from the ROLE survey developed by Preskill and Torres (1999). Finally, a subscale regarding the Theory of Planned Behavior was

developed by the researcher based on the guidelines set out by Ajzen (2011a). By utilizing quantitative analysis, the three subscales of competencies, culture, and behavior were able to be examined and compared.

Summary of findings

Research Objective 1: Identify the accepted evaluation competencies Cooperative Extension educators should be able to demonstrate in their professional work.

The purpose of research objective one was to utilize an expert panel to determine which evaluation competencies Cooperative Extension educators should be able to demonstrate in their professional work. These competencies were taken from the Canadian Evaluation Society Competencies for Canadian Evaluation Practice, as these are the most widely accepted professional standards for evaluators in North America (Buchanan & Kuji-Shikatani, 2014). These competencies provide guidance for evaluation professionals in a variety of organizations and programs.

All 49 competencies were ranked as either “*somewhat important*” or “*very important*” by the expert panel. Six of these competencies exhibited unanimous agreement of “*very important*” from the expert panel. Expert panelists were also provided space to comment on the evaluation competencies. These comments reflect the need for further evaluation capacity building within the organization. The expert panelists did note that while they felt these competencies to be important, they also recognized that not every office or county may need someone trained to the specificity of these competencies. It was also evident that while they viewed these competencies as important, the experts felt that Extension educators did not currently have many of these competencies.

Overall, the competencies that exhibited unanimous agreement of importance by the expert panel were also those that had a very high skill and high importance ranking by participants. This indicates a general sense of agreement and understanding between evaluation experts within Cooperative Extension and Extension educators working in the field. Further recommendations can be made for development of Extension educators evaluation competencies based upon the results of the expert panel review.

Research Objective 2: Identify which evaluation competencies Cooperative Extension educators currently recognize that they practice in their professional work.

Evaluation competencies examined in this study were based upon those developed by the Canadian Evaluation Society (Kuji-Shikatani et al., 2012). Participants were asked to self-report their skill level with each of the 49 competencies. A mean score was then calculated for each competency. These competencies were ranked according to their mean score to determine the competencies that participants reported to have the highest and lowest skill level.

A majority of highly ranked competencies were most likely ranked this way due to social desirability. For example, competency 1.2 “Acts ethically and strives for integrity and honesty” was ranked highest by participants regarding skill level. This could be due in part to social desirability bias and the self-reporting of skill level. It is unlikely that participants would report that they act unethically within their work. This competency was also highly ranked in importance.

Lowest ranked competencies included evaluation-specific skills such as competency 2.2 “Specifies program theory” and competency 2.6 “Develops evaluation

designs”. This points toward a need for skill development in these evaluation skills, all of which were deemed necessary by expert panelists.

Research Objective 3: Identify the evaluation competencies that are perceived as important within the Extension organization.

The same list of competencies was utilized to examine perception of importance within Cooperative Extension. Participants were asked to rate how strongly they agree with the importance of each competency on a Likert scale. Again, these were possibly inflated due to social desirability. For example, competency 1.3 “Respects all stakeholders” and 5.10 “Demonstrates professional credibility” were among the highest in perception, as society would dictate. However, competency 1.5 “Provides independent and impartial perspective” was ranked among the top five highest in importance but it did not rank among the highest for skill level. This indicates a possible area for further development regarding skill.

Next, examining the competencies that ranked lowest in importance, competency 2.2 “Specifies program theory” was found to be the lowest ranked by Extension participants, however this competency exhibited 100% agreement regarding importance from the expert panel. This competency also ranked lowest in skill level. This low focus on importance by Extension educators could indicate a lack of focus in training on program theories or an unfamiliarity with the concept in general.

Examining competencies ranking within the scale of perceived importance provides insight into how evaluation competencies are viewed by Extension educators. It is also evident that while some competencies were deemed less important by Extension

educators, experts in evaluation within Cooperative Extension still agree that these competencies are necessary and important for educators.

Research Objective 4: Identify those factors of the Theory of Planned Behavior that influence evaluation behavior and culture within Cooperative Extension.

In order to investigate the culture and behaviors regarding evaluations in Cooperative Extension two instruments were added to the competencies examined in research objectives one through three. The scale for culture was adapted from Preskill and Torres and the scale for the Theory of Planned Behavior was modeled on the guidelines set out by Ajzen (Ajzen, 1991, 2011a). In order to identify factors influencing evaluation behavior multiple regression was utilized. Multiple significant paths were found within the model. Regarding the culture of evaluation within Cooperative Extension, the variables of college major, program area, perception of importance and attitude were all significant.

Additional significant paths that were identified included the path between attitude and perception of importance regarding evaluation competencies. Attitude also had a significant relationship with subjective norm and on intention as is expected based on prior research (Ajzen & Fishbein, 2005; Ajzen & Madden, 1986; Fazio, 1990). Finally, behavior exhibited a significant relationship with intention. This was supported by the research by Ajzen in developing the Theory of Planned Behavior (Ajzen, 1991; Ajzen & Madden, 1986; Beck & Ajzen, 1991).

Many other paths were examined and found not to be significant for this particular study. Regarding culture, the factors of location, years of experience, degree level, and training were not significant. Additionally culture was not found to have a

significant relationship with subjective norm. Perceived behavioral control did not exhibit a significant relationship with subjective norm or with the behavior in this model. However based on Ajzen's work, we know that in other cases these variables can exhibit significant relationships (Ajzen, 1991; Ajzen & Madden, 1986; Beck & Ajzen, 1991). Furthermore, subjective norm did not exhibit a significant relationship regarding intention to perform the behavior in this study.

Research Objective 5: Propose Evaluation Capacity Building recommendations within Cooperative Extension to increase evaluation competencies, behaviors and culture.

Mean weighted discrepancy scores were examined to determine differences in skill and importance. This study found that the highest discrepancies between skill and importance were competencies 2.12 "Assesses reliability of data"; 2.13 "Assesses trustworthiness of data"; 2.11 "Assesses validity of data"; 2.6 "Develops evaluation designs" and competency 2.9 "Develops reliable and valid measures/tools". This indicates that these competencies exhibit a gap between how important they are perceived to be and how skilled Extension educators rate themselves within these skill sets.

Next, examining the culture of evaluation, the statements that ranked lowest provide guidance for how the culture might be improved within the organization. These lowest ranking culture statements include "Extension professionals are confident that mistakes or failures will not affect them negatively"; "Extension professionals are encouraged to offer dissenting opinions and alternative viewpoints"; "There is little competition among Extension professionals for recognition or rewards"; "In meetings Extension professionals are encouraged to discuss the values and beliefs that underlie their opinions"; "Extension professionals generally trust their administrators or

supervisors” and “Administrators and supervisors make decisions after considering the input of those affected”. The low ranking of these statements points to several opportunities for growth within Cooperative Extension.

Conclusions and Discussion

Based on the findings from this study, several areas of interest emerged. Competencies regarding evaluation are clearly valued by experts within Cooperative Extension, however this does not necessarily translate into valuation of these competencies by Extension educators in the field. Additionally several significant paths were found regarding evaluation competencies and the culture of evaluation within the organization. Finally, discrepancies between how Extension educators rank their skill with a particular competency and how they perceive that competency as important provide areas for developing training and promotion of evaluation within the organization.

Evaluation experts within Cooperative extension cite an understanding of program theories as very important, however Extension educators do not view this as important.

Upon examining the competencies that ranked lowest in importance one in particular stands out. Competency 2.2 “Specifies program theory” was found to be the lowest ranked by Extension participants, however this competency exhibited 100% agreement regarding importance from the expert panel. This competency also ranked lowest in skill level for Extension educators. This may indicate that Extension educators need more training regarding program theories and how to evaluate a program based upon a theory. Clearly evaluation experts within Cooperative Extension value this competency. The lack of focus on program theory aligns with the findings of

Rennekamp and Arnold (2009). Additionally, Braverman and Engle (2009) found that more emphasis was needed on program theory within Cooperative Extension. Using the data from this study, trainings may need to be developed in order to address this gap between what experts view as important and how skilled Extension educators are regarding programmatic theories.

Extension educators value their perception of professional credibility within the community.

Examining the highest ranked competencies that Extension educators cited for both skill level and perception of importance, the competency regarding professional credibility was ranked in the top five. This indicates that being a credible source of information and support is important to Extension educators. If Extension educators are not trained in evaluation methods, data management, and evaluation practices, they will not feel capable of performing these evaluations and will likely attempt to do the minimum they are comfortable with. The concern of professional credibility must be addressed by increasing training in evaluation so that Extension educators feel more comfortable with these skills and subsequently more credible when asked to perform an evaluation as part of their job.

Perception of importance significantly impacts both culture and attitude regarding evaluation.

Significant paths were identified between attitude and perception of importance regarding evaluation competencies and between perception of importance and culture of evaluation. Examining this path further, perception of importance and culture account for 7.1% of the variation regarding attitude toward evaluation. Perception of importance

exhibits a significant positive relationship with both attitude and culture. This is somewhat in contrast to Morford and colleagues (2006) who found that perceptions of evaluation did not have an influence on evaluation activities or culture. However Morford et al. (2006) did note that perception was related to attitude, which mirrors the findings in this study. Based on this finding, increasing the perception of importance regarding evaluation competencies should increase the attitude regarding evaluation and also the culture of evaluation within Cooperative Extension.

Increasing this perception of importance should begin with administration. Lambur (2008) noted that evaluation activities should be supported by administration and clarified within the organizational structure. As is evident by examining the scale regarding culture, there are some concerns regarding administration within the organization. If administration can follow the lead of evaluation experts within the organization and promote evaluation competencies and a culture of evaluation, the perception of these competencies can be enhanced, thereby enhancing the culture of evaluation and the attitude regarding evaluation within Cooperative Extension.

A noticeable lack of administrative support and involvement regarding evaluation within the organization was observed.

There appears to be a lack of support and attention to evaluation within Cooperative Extension administration. In the course of this study the low prioritization of evaluation efforts became noticeable in that 13 administrators were contacted multiple times for participation in the study, and of that 13 only 4 chose to respond. This non-response may indicate that evaluation capacity building is a non-priority for administration. Administrators within the organization may want to consider how this

lack of attention to evaluation efforts will impact the organization as a whole. If evaluation is not supported from administration, then it is unlikely that the Extension educators expected to perform evaluations will be taking this seriously either.

Attitude significantly impacts intention to perform evaluations, and intention in turn has a significant relationship with evaluation behaviors.

The relationships of attitude and intention and of intention and behavior are significant and positive ones. This is not surprising given that this is based upon the time-tested Theory of Planned Behavior model, however this does add incentive to increase the attitude regarding evaluation within Cooperative Extension. Attitude demonstrates a clear linkage with subjective norm and culture (Ajzen & Fishbein, 2005; Ajzen & Madden, 1986; Lekies & Bennett, 2011). In fact, every path relating to attitude regarding evaluation within this model was found to be significant. This leads to the conclusion that having a more positive attitude regarding evaluation can enhance a variety of factors regarding evaluation within Cooperative Extension.

Study Limitations

Limitations of this study include the consideration that this sample of Cooperative Extension may not necessarily be representative of the organization as a whole. Generalizations to other populations should be made with caution. Generalization to other similar organizations may not be possible. This study examines a portion of variables related to the theory of planned behavior and is not all encompassing. Other factors can contribute to these evaluation behaviors and should be studied in detail, but given the limited time and resources available to this study it was not possible to take additional variables into account. As the nature of behavior varies with situations and

this sample may not be typical of Cooperative Extension behaviors in all cases.

Additionally, this data does rely in part on self-reporting, which may not provide an accurate representation, and social desirability could play a factor in some respondent's answers (Gittelman et al., 2015; Howell, 2006; Krumpal, 2013; Miller, 2012).

The non-respondent survey was conducted to examine the discrepancies between those that chose to respond and those that did not. Results from the non-respondent survey showed no significant differences in respondents and non-respondents on the scales of Skill and Perception of evaluation competencies. The recommendations based on these analyses may be more generalizable than other findings in this study. However significant differences were found between the populations on the scales of culture and the Theory of Planned Behavior, indicating that the non-respondents differ from those represented in the overall data analysis of the study. Recommendations based on these scales should be considered with attention to these differences.

Utilizing online methods for research created an area of concern as this can produce a slightly lower response rate than paper survey or in person survey methods (AAPOR Task Force on Survey Refusals, 2014; Abreu & Oliveira, 2014; Nulty, 2008). The population without internet access would be excluded, however given the job description and resources of Extension educators, it is assumed that the majority were able to participate and a representative sample can be obtained.

Quality research design is critical to adequately testing a hypothesis. Possible design issues encountered with this study include the factor of self-reporting of data by the Extension educators in both the competency and behavior portions, design integrity as there are three separate scales within the study, sampling method, and the analysis plan

(Ary et al., 2013; Howell, 2006). The researchers hope to overcome these design issues when possible, and report these factors in the limitations of the study.

Self-reporting is somewhat unreliable and can lead to incorrect data. The scales utilized in this survey rely heavily on self-reported data. It is possible that utilizing this design resulted in some participants providing unreliable data to researchers.

Additionally data collected was examined for social desirability bias which can result from self-reporting of responses (Miller, 2012). Researchers minimized this possibility by assuring anonymity to participants, so that they would be more encouraged to report an accurate picture of evaluation behaviors within the organization.

Dropout was a considerable factor in this study. Based on literature, dropout could have been better managed by utilizing paper surveys, utilizing forced response, and by utilizing incentives (Abraham et al., 2006; Brennan & Hoek, 1992; Nulty, 2008; Stieger, Reips, & Voracek, 2007). Due to constraints, the researcher could not implement some of these options. Utilizing forced response is a controversial option and could enhance item response but actually impact overall survey dropout in a negative fashion (Stieger et al., 2007).

As with survey dropout, item non-response is greatly increased through the use of paper survey methods as compared to online methods (Sarraf & Tukibayeva, 2014). In some cases paper surveys led to an 80% or greater reduction in item non-response (Nulty, 2008; Sarraf & Tukibayeva, 2014). Paper surveys, while successful in decreasing both item-nonresponse and overall non-response, are often not feasible in studies encompassing large geographic areas and large populations due to cost and logistics (Nulty, 2008).

In addition to the concern of item non-response, individuals that dropout of the survey before finishing all questions can cause issues with data analysis (Stieger et al., 2007; Tijdens, 2014). Participants may drop out of surveys for a variety of reasons, some of those similar to item non-response and some additional reasons. Survey dropout or non-completion differs from item non-response in that individuals may exit the survey early, leaving a succession of questions unanswered whereas item non-response, individuals selectively or accidentally fail to respond to all questions (Stieger et al., 2007).

Surveys can experience lower than expected response rates for a variety of reasons. In particular online surveys have been reportedly having lower and lower response rates (LaRose & Tsai, 2014; Pit, Vo, & Pyakurel, 2014; Sarraf & Tukibayeva, 2014). In some cases online survey completion rates have been reported as low as single digits (LaRose & Tsai, 2014). Several factors have contributed to a decline in response rates, these include the method of survey recruitment, time to complete the survey, over surveying of the population of interest, and increased demands on participants' time in other areas of their work (Fan & Yan, 2010; LaRose & Tsai, 2014; Pit et al., 2014; Sarraf & Tukibayeva, 2014; Tijdens, 2014). In some cases the use of email recruitment can be detrimental to survey efforts because spam filters can screen out the email, or the emails can simply be ignored because of limited time and a high volume of email (LaRose & Tsai, 2014).

In the present study a high dropout rate was present. Many individuals dropped out after the first prompt requesting their participation. It may be that individuals just wanted to see what the survey looked like and did not ever intend to take it; not realizing

their response to the first prompt for their agreement would cause them to be counted as a participant. Another possibility for this high rate of dropout could be that individuals looked over the survey length and opted to not participate.

The lack of response from a majority of states contacted is in stark contrast with support for evaluation from the experts on evaluation within the organization. While experts are indicating that evaluation competencies are highly important for extension educators, participating in research designed to enhance evaluation within the organization appears to be a low priority for administration in many states.

Recommendations for practice

Based on the findings from this study, several recommendations can be made for administration within Cooperative Extension, Extension educators, and evaluation experts within the organization. These recommendations reflect the findings from the expert panel, the path analysis and from the examination of the competencies and culture within the organization. Additional research on these topics could also enhance evaluation practice within the organization

1. Increase visibility of evaluation practices and evaluative thinking within Cooperative Extension.

Examining the path analysis, perception of importance is critical to both the culture and attitude regarding evaluation. By increasing the visibility and the discussion surrounding evaluation practices within the organization, the perception of evaluation as a whole can be enhanced. If more individuals are discussing the evaluation competencies they practice, more individuals may feel compelled to practice these competencies themselves. This elevated visibility serves also to enhance the subjective norm regarding

evaluation within the organization. Following the Theory of Planned behavior, increasing both attitude and subjective norm should serve to impact behavioral intentions regarding evaluation within Cooperative Extension (Ajzen, 2006; Ajzen & Fishbein, 1969; Ajzen & Madden, 1986).

Increasing the practice of evaluative thinking within the organization can also serve to increase evaluation behaviors. Those currently exhibiting a high level of evaluation behaviors within the organization should be identified and encouraged to further support others learning about evaluation within Cooperative Extension. According to Boyd (2009), something as basic as increased communication regarding evaluation can serve to increase the evaluative thinking and evaluation capacity within the organization.

2. Modeling by administration.

As with increasing the visibility of evaluation practices, administration can assist with enhancing the value placed on quality evaluations based in evaluation competencies. Based on the culture subscale, there is room for improvement regarding leadership. According to Morford et al (2006), leadership can help to encourage organization members to participate in evaluations via externally motivating factors. Furthermore Preskill and Boyle (2008) found that having administration that values evaluation and shares information regarding evaluation practices can enhance evaluation capacity of the organization. Administration within Cooperative Extension should need to examine current practices and messages regarding evaluation. As noted by the culture subscale, Extension educators must be able to feel safe in being wrong. Mistakes and efforts should be accepted and recognized but not punished or criticized in order to promote an

evaluation-centric work culture. Enhancing trust between Extension educators and administration should serve as the first step in building evaluation culture. Without trust, there is not much hope to accomplish effective leadership (Burke, Sims, Lazzara, & Salas, 2007; Rosenthal, Moore, Montoya, & Maruskin, 2009).

3. Attitude shift regarding evaluation.

Based on the path model, attitude regarding evaluation is a critical component of enhancing evaluation culture, subjective norm, intention, and subsequently behavior regarding evaluation. Attitude has a significant impact on the culture of evaluation. Experts, administration, and those already excited about evaluation can help to shift the attitude within the organization.

A positive attitude can be prompted by showcasing those performing quality evaluations, developing reward and recognition systems regarding evaluation, and simply by increasing education regarding evaluation (Ajzen & Fishbein, 2005; Ajzen & Madden, 1986; Fazio, 1990). This also ties into the culture scale, which found rewards and recognition to be ranked lower among those surveyed. Supportive attitudes regarding evaluation are linked to the overall culture of evaluation within organizations (Scheerens, 2004). Improving the attitude regarding evaluation can serve as a means of evaluation capacity building within the organization (Bourgeois & Cousins, 2013b; Gruidl & Hustedde, 2003; Taylor-Ritzler et al., 2013).

4. Focus training on the areas of 100% agreement by experts.

While experts did agree that all of the evaluation competencies were of importance for Extension educators to exhibit, a starting place for developing training would be with those areas that exhibited 100% agreement. Tackling all 49 competencies

at once would not be practical for such a large organization. Utilizing training based on ethics, stakeholder relationships, facilitation skills, interpersonal, collaboration, and listening skills provides a basis for moving forward in the organization. By focusing just on the competencies that exhibit total agreement, trainings can be tailored to these critical competencies. Centering on a means of training, these soft-skills may best be addressed via online webinars or similar methods (Kiernan & Alter, 2004). Many of these competencies may be assumed to be part of training already, but these findings should still be taken into consideration and these competencies cross checked with current training practices.

5. Focus training on the areas of discrepancy between importance and skill.

The top areas of discrepancy between importance in skill provide insight into an area of need within the organization. These discrepancies represent a gap between how skilled Extension educators feel they are with a competency and how important they view this competency. Focusing on these areas will require training in data reliability and validity, evaluation design, and tools and measurements regarding evaluation. These competencies represent challenges for Extension educators currently practicing and trainings can serve to narrow this gap. Extension educators are not traditionally trained as researchers, therefore many of the skills that they lack (e.g; data management) stem from this discrepancy. According to Kelsey (2008), evaluation capacity building workshops may be a venue for enhancing these skill sets, as these competencies tend to be more hands-on and focus on assessment and analysis of data.

Recommendations for future research

Possible extension of this research includes providing training for the skill sets that are found to be lacking and monitoring the change in behavior before and after the training. This can provide additional insight into implementing behavioral change within the organization. Extension educators should be encouraged to set their own implementation intentions regarding evaluation tasks, with monitoring of this practice and the subsequent evaluation behaviors set up following this process. This can provide insight into the use of implementation intentions set by the individual rather than the overall organization. These intentions have been shown to increase the likelihood of the behavior's completion; therefore utilizing this method could benefit the organization as a whole.

Consider alternative paths using structural equation modeling.

The path analysis presented in this study represents only one possibility for examining the evaluation culture and evaluation behaviors within Cooperative Extension. While this path model was based in part on the Theory of Planned Behavior, additions were made regarding culture and Extension variables. These additions were based on literature but alternative models and paths may be possible.

More in-depth structural equation modeling could result in additional significant paths. Furthermore other regression models may be developed that would help inform the evaluation practices within the organization. Utilizing alternative paths and structural equation modeling could build on the information collected in this study.

Elimination of non-significant paths and exploration of disturbances.

Several non-significant paths were found and while some were based on the Theory of Planned Behavior, some stemmed from Extension variables. These non-significant paths should be further examined and model trimming could enhance the model. Additionally, while the regression models did explain some amount of variance in the endogenous variables of culture, subjective norm, and behavior, there are still disturbances evident that could be explored further.

Further exploration of how program area and major impact culture.

Significant paths were found between program area and culture of evaluation and between college major and culture of evaluation. These paths exhibit positive relationships with culture, however the causes behind these relationships are not clear. More exploration should be done to determine why program area has a significant relationship with culture and what can be done to enhance the culture within all program areas. Furthermore college major had a positive relationship with culture, but this could be attributed to several factors including location of the college, prior experience and several other variables that have yet to be explored. Investigating these variables provides a variety of research options in the future.

Study Implications

Findings from this study provide means by which Cooperative Extension can continue to improve the culture of evaluation, evaluation competencies, and evaluation behaviors of Extension educators. Utilizing the expert panel review, it is clear that evaluation competencies should be promoted within the organization and Extension educators should be trained in these areas. While Extension educators do report being

skilled in many of the competencies, there are gaps between what the experts view as important, and where Extension educators' skill sets lie.

Enhancing the perception of these evaluation competencies within the organization can enhance the culture of evaluation within the organization as well as the attitude regarding evaluation. The attitude that Extension educators have regarding evaluation can impact their intention to conduct evaluations and in turn, this intention directly impacts the evaluation behaviors exhibited. Tracing this path back, perception of importance is at the root of these evaluation behaviors.

The culture of evaluation within Cooperative extension, while overall positive, can be enhanced by increasing administrators leadership regarding evaluation, increasing visibility of evaluation work, enhancing the feeling of being able to share opinions within the workplace and prompting the evaluation competencies throughout the organization. Evaluation remains a critical part of Extension's mission and directive from its funders (Baughman, Boyd, & Kelsey, 2012; GPRA, 1993, 2010). Enhancing evaluation culture and behaviors within the organization can serve to increase participant satisfaction, participation, and in turn increase funding to the organization.

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Appendices

Appendix A: A priori table of variables related to evaluation in Cooperative

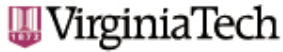
Extension

Variable	Rationale	Type	Measure	References
Attitude	Positive attitude towards a behavior can increase the likelihood of the behavior's occurrence.	Independent Variable	TBP Survey	(Ajzen, 1991; Ajzen & Fishbein, 1969; Daigle et al., 2002)
Prior behavior	Prior behavior regarding evaluation can demonstrate skill level and impact perceived control and self-efficacy regarding the behavior.	Independent Variable	TBP Survey	(Ajzen, 1991; Conner & Armitage, 1998; Norman & Smith, 1995)
Beliefs about evaluation	Beliefs that evaluation is valued can increase the likelihood of an individual performing an evaluation behavior. Beliefs also impact perceived behavioral control, subjective norm and attitude toward the behavior.	Independent Variable	TBP Survey	(Conner & Armitage, 1998; Daigle et al., 2002)
Knowledge/training regarding evaluation	An individual's knowledge and training evaluation regarding evaluation can increase self-	Independent Variable	Canadian Evaluation Competencies, TPB Survey	(Ajzen, 1991; Conner & Armitage, 1998; McClure et

	<p>efficacy and the likelihood of evaluation behaviors occurring. These factors are similar to competencies but are also meant to include basic evaluation behaviors outside the scope of the competency list.</p>			<p>al., 2012, 2012; Workman & Scheer, 2012)</p>
Competencies	<p>If an individual exhibits a variety of competencies in evaluation they will likely have a higher self-efficacy regarding performing evaluations. Administration support of evaluation can increase motivation to perform evaluations. This support can increase the culture of evaluation within the organization. Higher self-efficacy regarding evaluation can increase likelihood of evaluation behaviors.</p>	Independent Variable	Canadian Evaluation Competencies	<p>(Arnold, 2006; A. Lamm et al., 2011; A. J. Lamm & Israel, 2013; McClure et al., 2012; Workman & Scheer, 2012)</p>
Administration support		Independent Variable	ROLE Survey	<p>(Boyd, 2009a; Morford et al., 2006a; Workman & Scheer, 2012)</p>
Self-efficacy on evaluation		Independent Variable	TBP Survey	<p>(Ajzen, 1991; Bandura, 1977)</p>

Implementation intentions	Setting an implementation intention (Date/Place/Time) can increase the likelihood of a behavior occurring.	Independent Variable	TBP Survey	(Conner & Armitage, 1998; Gollwitzer, 1999; Gollwitzer & Sheeran, 2006; Orbeil et al., 1997) (Guion et al., 2007; Kelsey, 2008; McClure et al., 2012; Morford et al., 2006a)
Years of experience in Extension	Individuals with less time and experience in their job may exhibit a lower level of evaluation behaviors.	Independent Variable	Demographics	(Ajzen, 1991, 2003; Armitage & Conner, 2001; Conner & Armitage, 1998)
Subjective norm	The perceptions of the relevant portions of society regarding the behavior will impact the performance of the behavior. Attitude, prior behavior, beliefs about evaluation, knowledge and training, implementation intentions and administration support can increase the likelihood of evaluation behaviors	Independent Variable	TPB Survey and ROLE Survey	
Evaluation behaviors		Dependent Variable	Survey data – ROLE, TPB and Canadian Evaluation Competencies	(Lamm et al., 2011; McClure et al., 2012; Morford et al., 2006a; Workman & Scheer, 2012)

Appendix B: IRB permission letter



Office of Research Compliance
Institutional Review Board
North End Center, Suite 4120, Virginia Tech
300 Turner Street NW
Blacksburg, Virginia 24061
540/231-4606 Fax 540/231-0959
email irb@vt.edu
website <http://www.irb.vt.edu>

MEMORANDUM

DATE: September 8, 2015
TO: Donna Westfall-Rudd, Courtney Ahren Vengrin
FROM: Virginia Tech Institutional Review Board (FWA00000572, expires July 29, 2020)
PROTOCOL TITLE: Examining the Evaluation Capacity, Evaluation Behaviors, and the Culture of Evaluation in Cooperative Extension
IRB NUMBER: 15-526

Effective September 8, 2015, the Virginia Tech Institutional Review Board (IRB) Chair, David M Moore, approved the Amendment request for the above-mentioned research protocol.

This approval provides permission to begin the human subject activities outlined in the IRB-approved protocol and supporting documents.

Plans to deviate from the approved protocol and/or supporting documents must be submitted to the IRB as an amendment request and approved by the IRB prior to the implementation of any changes, regardless of how minor, except where necessary to eliminate apparent immediate hazards to the subjects. Report within 5 business days to the IRB any injuries or other unanticipated or adverse events involving risks or harms to human research subjects or others.

All investigators (listed above) are required to comply with the researcher requirements outlined at:

<http://www.irb.vt.edu/pages/responsibilities.htm>

(Please review responsibilities before the commencement of your research.)

PROTOCOL INFORMATION:

Approved As: **Exempt, under 45 CFR 46.110 category(ies) 2,4**
Protocol Approval Date: **May 8, 2015**
Protocol Expiration Date: **N/A**
Continuing Review Due Date*: **N/A**

*Date a Continuing Review application is due to the IRB office if human subject activities covered under this protocol, including data analysis, are to continue beyond the Protocol Expiration Date.

FEDERALLY FUNDED RESEARCH REQUIREMENTS:

Per federal regulations, 45 CFR 46.103(f), the IRB is required to compare all federally funded grant proposals/work statements to the IRB protocol(s) which cover the human research activities included in the proposal / work statement before funds are released. Note that this requirement does not apply to Exempt and Interim IRB protocols, or grants for which VT is not the primary awardee.

The table on the following page indicates whether grant proposals are related to this IRB protocol, and which of the listed proposals, if any, have been compared to this IRB protocol, if required.

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Appendix C: Complete Evaluation Competencies, Culture, and Behavior (ECCB)

Instrument

9/29/2015 Qualtrics Survey Software

Evaluation Competency, Culture and Behaviors

Virginia Polytechnic Institute and State University
Informed Consent for Participants in Research Projects Involving Human Subjects

Project Title: Examining the Evaluation Capacity, Evaluation Behaviors, and the Culture of Evaluation in Cooperative Extension

Investigators: Courtney Vengrin, Donna Westfall-Rudd

I. Purpose of Research:
The purpose of this study is to examine the evaluation competencies, evaluation behaviors and evaluation culture of Cooperative Extension. This research will focus on which competencies are priority for Cooperative Extension and what the current culture of evaluation is within the organization. The study will further investigate the evaluation behaviors of Extension educators.

II. Procedures: You will be asked to complete the following survey. A variety of question types will be utilized to gain information regarding your experiences in evaluation and your perception of evaluation. The survey should take no longer than 35 minutes to complete.

III. Risks: There are no known risks to you as a participant.

IV. Benefits
There are no direct benefits to you as a participant. You may contact the researchers for a summary of the study results.

V. Extent of Anonymity and Confidentiality: Protecting participants is a top priority of the researchers. Participant

<https://virginiatech.qualtrics.com/Content/ued/Ajax.php?action=GetSurveyInfoPreview&Ts=1C3RjwV3HBMdCjwVjL> 1/25

9/29/2015 Qualtrics Survey Software

information will be kept strictly confidential. Individual names will be assigned pseudonyms. At no time will information be released that allows an individual to be identified. Only the research team will have access to the data. It is possible that the Institutional Review Board (IRB) may view this study's collected data for auditing purposes. The IRB is responsible for the oversight of the protection of human subjects involved in research.

VI. Compensation
There is no means of compensation for this study.

VII. Freedom to withdraw
As a participant, you are free to withdraw from the study at any time without penalty. You are not required to answer any questions you do not wish to answer.

Should you have pertinent questions about this research and my rights, you may contact:

Courtney Vengrin
PhD Candidate
cvengrin@vt.edu
540-392-5353

Donna Westfall-Rudd
Committee Chair
Associate Professor
mooredm@vt.edu
540-231-6836

Dr. Moore
IRB
moored@vt.edu
540-231-4991

Do you agree to the terms of this study?

☐ I agree

<https://virginiatech.qualtrics.com/Content/ued/Ajax.php?action=GetSurveyInfoPreview&Ts=1C3RjwV3HBMdCjwVjL> 2/25

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☐ I disagree

Competencies

Below you will see a list of competencies. These come from the field of Evaluation and all may not pertain to Extension. Please consider these in the context of your role within Cooperative Extension.

Please indicate what you feel your skill level is with each competency, as well as your perception of the importance of this competency.

Please rate your skill level with each item					I feel this competency is important			
Very Unskilled	Somewhat Unskilled	Somewhat Skilled	Highly Skilled		Strongly Disagree	Disagree	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1.1 Applies professional evaluation standards	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1.2 Acts ethically and strives for integrity and honesty	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1.3 Respects all stakeholders	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
				1.4 Considers				

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<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	human rights and the public welfare in evaluation practice	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1.5 Provides independent and impartial perspective	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1.6 Aware of self as an evaluator (knowledge, skills, dispositions) and reflects on personal evaluation practice (competencies and areas for growth)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1.7 Pursues professional networks and self development to enhance evaluation practice	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
				2.1 Understands the knowledge base of				

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<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	evaluation (theories, models, types, methods and tools)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2.2 Specifies program theory	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2.3 Determines the purpose for the evaluation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Very Unskilled	Somewhat Unskilled	Somewhat Skilled	Highly Skilled		Strongly Disagree	Disagree	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2.4 Determines program evaluability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2.5 Frames evaluation questions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2.6 Develops evaluation designs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2.7 Defines evaluation methods (quantitative, qualitative or mixed)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2.8 Identifies data sources	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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5/25								
9/29/2015				Qualtrics Survey Software				
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2.9 Develops reliable and valid measures/tools	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2.10 Collects data	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2.11 Assesses validity of data	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2.12 Assesses reliability of data	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2.13 Assesses trustworthiness of data	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Very Unskilled	Somewhat Unskilled	Somewhat Skilled	Highly Skilled		Strongly Disagree	Disagree	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2.14 Analyzes and interprets data	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2.15 Draws conclusions and makes recommendations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2.16 Reports evaluation findings and results	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	3.1 Respects the uniqueness of the site	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	3.2 Examines	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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6/25								

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<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	4.7 Identifies and mitigates problems / issues	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	5.1 Uses written communication skills and technologies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Very Unskilled	Somewhat Unskilled	Somewhat Skilled	Highly Skilled		Strongly Disagree	Disagree	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	5.2 Uses verbal communication skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	5.3 Uses listening skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	5.4 Uses negotiation skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	5.5 Uses conflict resolution skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	5.6 Uses facilitation skills (group work)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	5.7 Uses interpersonal skills (individual and teams)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	5.8 Uses collaboration /	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	partnering skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	5.9 Attends to issues of diversity and culture	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	5.10 Demonstrates professional credibility	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Culture

The following items pertain to your perception of the culture of evaluation within Cooperative Extension. Please consider the culture of Cooperative Extension within your state when answering these questions.

	1 - Strongly Disagree	2 - Disagree	3 - Neutral	4 - Agree	5 - Strongly Agree
Extension professionals respect each other's perspectives and opinions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Extension professionals ask each other for information about work issues and activities.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Extension professionals continuously look for ways to improve processes, products and services.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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Extension professionals are provided opportunities to think about and reflect on their work.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Extension professionals often stop to talk about the pressing work issues we're facing.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When trying to solve problems, Extension professionals use a process of working through the problem before identifying solutions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There is little competition among Extension professionals for recognition or rewards.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Extension professionals operate from a spirit of cooperation, rather than competition.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Extension professionals tend to work collaboratively with each other.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Extension professionals are more concerned about how their work contributes to the	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
https://virginiatech.qualtrics.com/ControlPanelAjax.php?action=GetSurveyDataPreview&T=ICSRjvVSt8BdmQjv3VjL					
11/25					

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success of the organization than they are about their individual success.					
Extension professionals face conflict over work issues in productive ways.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Extension professionals generally view problems or issues as opportunities to learn.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mistakes made by Extension professionals are viewed as opportunities for learning.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Extension professionals continuously ask themselves how they're doing, what they can do better, and what is working.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Extension professionals are willing to take risks in the course of their work.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Extension professionals are committed to being innovative and forward looking.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Extension professionals are confident that mistakes or failures will not affect them negatively.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
https://virginiatech.qualtrics.com/ControlPanelAjax.php?action=GetSurveyDataPreview&T=ICSRjvVSt8BdmQjv3VjL					
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Extension professionals generally trust their administrators or supervisors.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Administration and supervisors view individuals' capacity to learn as the organization's greatest resource.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Extension professionals use data/information to inform their decision-making.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Asking questions and raising issues about work is encouraged.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Extension professionals are not afraid to share their opinions even if those opinions are different from the majority.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel safe explaining to others why I think or feel the way I do about an issue.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Extension professionals are encouraged to take the lead in initiating change or in trying to do something different.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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Administrators and supervisors make decisions after considering the input of those affected	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In meetings Extension professionals are encouraged to discuss the values and beliefs that underlie their opinions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Extension professionals are encouraged to offer dissenting opinions and alternative viewpoints.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Behavior

Items in this section will refer to conducting program evaluations. Please use the sliding bar on each question to indicate your response.

Please consider your role within Cooperative Extension when responding to the following question

Strongly Disagree	Disagree	Agree	Strongly Agree	Not Applicable
1	2	3	4	5
6	7			

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I expect to conduct evaluations as a part of my job:

Please consider your role within Cooperative Extension when responding to the following question

Strongly Disagree

Strongly Agree

1

2

3

4

5

6

7

I want to conduct evaluations as a part of my job:

Please consider your role within Cooperative Extension when responding to the following question

Strongly Disagree

Strongly Agree

1

2

3

4

5

6

7

I intend to conduct evaluations as

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part of my job:

Please consider your role within Cooperative Extension when responding to the following question

Pleasant (For me)

Unpleasant (For me)

1

2

3

4

5

6

7

Conducting evaluation as a part of my job is:

Please consider your role within Cooperative Extension when responding to the following question

Worthless

Useful

1

2

3

4

5

6

7

Conducting evaluation as a part of my job is:

<https://virginiatech.qualtrics.com/ContentPanelAjax.php?action=GetSurveyItemPreview&T=1CSRjvV8BMM4QvQVjE>

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Please consider your role within Cooperative Extension when responding to the following question

	Interesting						Boring
	1	2	3	4	5	6	7
Conducting evaluation as a part of my job is:							

Please consider your role within Cooperative Extension when responding to the following question

	Conduct evaluations					Not conduct evaluations	
	1	2	3	4	5	6	7
Most people who are important to me (in my job) think that I should:							

Please consider your role within Cooperative Extension when responding to the following question

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	Not at all Important					Extremely Important	
	1	2	3	4	5	6	7
Most people who are important to me think that evaluation is:							

Please consider your role within Cooperative Extension when responding to the following question

	Agree					Disagree	
	1	2	3	4	5	6	7
It is expected of me that I conduct evaluations:							

Please consider your role within Cooperative Extension when responding to the following question

	Agree					Disagree	
	1	2	3	4	5	6	7

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It is common to
discuss program
evaluations in my
workplace:

Please consider your role within Cooperative Extension when responding to the following question

Agree

Disagree

1

2

3

4

5

6

7

I feel under social
pressure to
conduct
evaluations:

Please consider your role within Cooperative Extension when responding to the following question

Agree

Disagree

1

2

3

4

5

6

7

People who are
important to me
want me to

<https://virginiatech.qualtrics.com/ControlPanelAjax.php?action=GetSurveyRtnaPreview&Ts=1C5RjwV8BMDQjw5VjE>

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conduct
evaluations:

Please consider your role within Cooperative Extension when responding to the following question

Agree

Disagree

1

2

3

4

5

6

7

I am confident I
can conduct
evaluations if I
want to

Please consider your role within Cooperative Extension when responding to the following question

Easy

Hard

1

2

3

4

5

6

7

For me,
conducting
evaluations is

<https://virginiatech.qualtrics.com/ControlPanelAjax.php?action=GetSurveyRtnaPreview&Ts=1C5RjwV8BMDQjw5VjE>

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Please consider your role within Cooperative Extension when responding to the following question

	Agree						Disagree
	1	2	3	4	5	6	7
The decision to conduct evaluation is beyond my control							

Please consider your role within Cooperative Extension when responding to the following question

	Agree						Disagree
	1	2	3	4	5	6	7
Whether or not I conduct evaluations is entirely up to me							

Demographics

<https://virginiatech.qualtrics.com/ControlPanelAjax.php?action=GetSurveyFormPreview&T=1CSRjvV8BMMQjvSVjL>

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Finally, we would like to collect some background information to help put your survey responses in context.

How many years of experience do you have working in Cooperative Extension?

What is your program area?

- ☐ Agriculture and Food Systems
- ☐ Community, Leadership, and Economic Vitality
- ☐ Environmental and Natural Resources
- ☐ Nutrition and Healthy Families
- ☐ Youth Development and 4-H
- ☐ Lawn and Garden
- ☐ Disaster Preparedness
- ☐ Energy and Climate Change
- ☐ Other:

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What is your highest level of education?

- ☐ Bachelors
- ☐ Masters
- ☐ Doctorate

What major, field, or speciality is your degree in?

Have you completed any training related to evaluation?

- ☐ Yes
- ☐ No
- ☐ I don't know

Please describe the type of training you received:

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What is your location?

Appendix D: Permission letters

4/21/2015

Gmail - RE: Use of Canadian Evaluation Competencies



Courtney Vengrin <courtney.vengrin@gmail.com>

RE: Use of Canadian Evaluation Competencies

1 message

Kayla Wright <kaylawright@evaluationcanada.ca>
To: cvengrin@vt.edu

Thu, Apr 16, 2015 at 10:15 AM

Hi Courtney,

Since the competencies are already on the website for public use, you may use them for your own use as well.

Thank you,

Kayla

Kayla Wright
Administrative Assistant
Canadian Evaluation Society
3-247 Barr Street
Renfrew, Ontario K7V 1J6
1-855-251-5721



www.evaluationcanada.ca

From: Vengrin, Courtney [<mailto:cvengrin@vt.edu>]
Sent: April-10-15 2:06 PM
To: secretariat@evaluationcanada.ca
Subject: Use of Canadian Evaluation Competencies

To the Canadian Evaluation Society:

<https://mail.google.com/mail/u/0/?ui=2&ik=bdee1bd7e0&view=pt&search=inbox&th=14cc3bada1e91ab7&siml=14cc3bada1e91ab7>

1/2

4/16/2015

Gmail - RE: Request for use of ROLE Instrument



Courtney Vengrin <courtney.vengrin@gmail.com>

RE: Request for use of ROLE Instrument

1 message

Hallie Preskill <Hallie.Preskill@fsg.org>
To: "Vengrin, Courtney" <cvengrin@vt.edu>

Thu, Apr 16, 2015 at 12:00 PM

Hello Courtney,

Thanks for your interest in using the ROLE. Of course, you have my permission to use the instrument in your work.

Best of luck!

Hallie

Hallie Preskill, Ph.D. | Managing Director | **FSG**

901 5th Avenue, Suite 2400, Seattle, WA 98164

Hallie.preskill@fsg.org | www.fsg.org

Direct: [206.577.6527](tel:206.577.6527) | Cell: [909.837.8436](tel:909.837.8436)

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1/2

Appendix E: Pilot Email Notice

Dear Extension Professional (*Please change the salutation as needed if you wish*):

You are invited to participate in a pilot test for an online survey. This study being conducted by Courtney Vengrin, a doctoral student at Virginia Tech in the department of Agricultural, Leadership, and Community Education. Her current research is exploring the current evaluation competencies and behaviors of Extension professionals as well as the overall culture of evaluation within Extension.

Your participation in this pilot test is completely voluntary and does not impact your position in any way. All responses will be kept strictly confidential. You will be asked to provide consent in the first screen of the survey. The study will take less than 35 minutes from start to finish.

Thank you in advance for your time and efforts with this important study. Please let Courtney know if you have any additional questions regarding this research at cvengrin@vt.edu or (540) 392-5353. You may also contact her advisor, Dr. Donna Westfall-Rudd, at mooredm@vt.edu or (540) 231-5717.

I appreciate your time in assisting Courtney with her research. The survey is available at https://virginiatech.qualtrics.com/SE/?SID=SV_01wewoKmlfKrcbj

Sincerely,

Extension Dean/Director

Appendix F: Study Recruitment Email

Dear Extension Professional (*Please change the salutation as needed if you wish*):

You are invited to participate in an online survey. This study being conducted by Courtney Vengrin, a doctoral student at Virginia Tech in the department of Agricultural, Leadership, and Community Education. Her current research is exploring the current evaluation competencies and behaviors of Extension professionals as well as the overall culture of evaluation within Extension.

Your participation in this pilot test is completely voluntary and does not impact your position in any way. All responses will be kept strictly confidential. You will be asked to provide consent in the first screen of the survey. The study will take less than 35 minutes from start to finish.

Thank you in advance for your time and efforts with this important study. Please let Courtney know if you have any additional questions regarding this research at cvengrin@vt.edu or (540) 392-5353. You may also contact her advisor, Dr. Donna Westfall-Rudd, at mooredm@vt.edu or (540) 231-5717.

I appreciate your time in assisting Courtney with her research. The survey is available at https://viriniatech.qualtrics.com/SE/?SID=SV_79W4q42Xo5iFmhD

Sincerely,

Extension Dean/Director

Appendix G: Tukey's HSD Tables

Multiple Comparisons						
Dependent Variable: Perception Mean						
Tukey HSD						
(I) What is your highest level of education?	(J) What is your highest level of education?	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Bachelors	Masters	.17543*	0.05891	0.009	0.0363	0.3145
	Doctorate	0.15105	0.0756	0.115	-0.0275	0.3296
Masters	Bachelors	-.17543*	0.05891	0.009	-0.3145	-0.0363
	Doctorate	-0.02438	0.06155	0.917	-0.1697	0.1209
Doctorate	Bachelors	-0.15105	0.0756	0.115	-0.3296	0.0275
	Masters	0.02438	0.06155	0.917	-0.1209	0.1697

* The mean difference is significant at the 0.05 level.

Multiple Comparisons						
Dependent Variable: Attitude Mean						
Tukey HSD						
(I) What is your location?	(J) What is your location?	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
North Carolina	Tennessee	-0.0116	0.21293	1	-0.5632	0.54
	Virginia	-0.06922	0.23484	0.991	-0.6776	0.5391
	Maryland	.84683*	0.3101	0.034	0.0435	1.6501
Tennessee	North Carolina	0.0116	0.21293	1	-0.54	0.5632
	Virginia	-0.05762	0.19607	0.991	-0.5655	0.4503
	Maryland	.85842*	0.28189	0.014	0.1282	1.5886
Virginia	North Carolina	0.06922	0.23484	0.991	-0.5391	0.6776
	Tennessee	0.05762	0.19607	0.991	-0.4503	0.5655
	Maryland	.91605*	0.29878	0.013	0.1421	1.69
Maryland	North Carolina	-.84683*	0.3101	0.034	-1.6501	-0.0435
	Tennessee	-.85842*	0.28189	0.014	-1.5886	-0.1282
	Virginia	-.91605*	0.29878	0.013	-1.69	-0.1421

* The mean difference is significant at the 0.05 level.

Multiple Comparisons						
Dependent Variable: SubNorm Mean						
Tukey HSD						
(I) What is your location?	(J) What is your location?	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
North Carolina	Tennessee	0.12357	0.18454	0.908	-0.3545	0.6016
	Virginia	0.28532	0.20352	0.5	-0.2419	0.8125
	Maryland	1.95921*	0.26875	0	1.263	2.6554
Tennessee	North Carolina	-0.12357	0.18454	0.908	-0.6016	0.3545
	Virginia	0.16175	0.16993	0.777	-0.2784	0.6019
	Maryland	1.83564*	0.2443	0	1.2028	2.4685
Virginia	North Carolina	-0.28532	0.20352	0.5	-0.8125	0.2419
	Tennessee	-0.16175	0.16993	0.777	-0.6019	0.2784
	Maryland	1.67389*	0.25894	0	1.0031	2.3447
Maryland	North Carolina	-1.95921*	0.26875	0	-2.6554	-1.263
	Tennessee	-1.83564*	0.2443	0	-2.4685	-1.2028
	Virginia	-1.67389*	0.25894	0	-2.3447	-1.0031

* The mean difference is significant at the 0.05 level.

Multiple Comparisons						
Dependent Variable: Culture Mean						
Tukey HSD						
(I) What is your location?	(J) What is your location?	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
North Carolina	Tennessee	-0.11866	0.11072	0.707	-0.4054	0.1681
	Virginia	0.0352	0.12184	0.992	-0.2804	0.3508
	Maryland	0.4102	0.16153	0.057	-0.0082	0.8286
Tennessee	North Carolina	0.11866	0.11072	0.707	-0.1681	0.4054
	Virginia	0.15386	0.10134	0.428	-0.1086	0.4164
	Maryland	.52885*	0.14669	0.002	0.1489	0.9088
Virginia	North Carolina	-0.0352	0.12184	0.992	-0.3508	0.2804
	Tennessee	-0.15386	0.10134	0.428	-0.4164	0.1086
	Maryland	0.37499	0.15525	0.077	-0.0271	0.7771
Maryland	North Carolina	-0.4102	0.16153	0.057	-0.8286	0.0082

	Tennessee	-.52885*	0.14669	0.002	-0.9088	-0.1489
	Virginia	-0.37499	0.15525	0.077	-0.7771	0.0271

* The mean difference is significant at the 0.05 level.

Multiple Comparisons						
Dependent Variable: Intention Mean						
Tukey HSD						
(I) What is your location?	(J) What is your location?	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
North Carolina	Tennessee	0.35623	0.19526	0.265	-0.1496	0.8621
	Virginia	-0.04762	0.21535	0.996	-0.6055	0.5103
	Maryland	-0.35902	0.2894	0.602	-1.1087	0.3907
Tennessee	North Carolina	-0.35623	0.19526	0.265	-0.8621	0.1496
	Virginia	-0.40385	0.1798	0.115	-0.8696	0.0619
	Maryland	-.71525*	0.26402	0.037	-1.3992	-0.0313
Virginia	North Carolina	0.04762	0.21535	0.996	-0.5103	0.6055
	Tennessee	0.40385	0.1798	0.115	-0.0619	0.8696
	Maryland	-0.3114	0.2792	0.681	-1.0347	0.4119
Maryland	North Carolina	0.35902	0.2894	0.602	-0.3907	1.1087
	Tennessee	.71525*	0.26402	0.037	0.0313	1.3992
	Virginia	0.3114	0.2792	0.681	-0.4119	1.0347

* The mean difference is significant at the 0.05 level.

Multiple Comparisons						
Dependent Variable: PBCMean						
Tukey HSD						
(I) What is your highest level of education?	(J) What is your highest level of education?	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Bachelors	Masters	-0.44039	0.2271	0.131	-0.9775	0.0967
	Doctorate	-.77020*	0.31558	0.041	-1.5166	-0.0238
Masters	Bachelors	0.44039	0.2271	0.131	-0.0967	0.9775
	Doctorate	-0.32982	0.26738	0.435	-0.9622	0.3026
Doctorate	Bachelors	.77020*	0.31558	0.041	0.0238	1.5166
	Masters	0.32982	0.26738	0.435	-0.3026	0.9622

* The mean difference is significant at the 0.05 level.

Appendix H: Program Area responses categorized as “Other”

Written descriptions of participant's program areas*	
1	Admin Asst
2	Administration
3	Administrative Assistant
4	Agriculture and Natural Resources
5	Clerical in County setting
6	Communications
7	County Extension Director
8	Family and Consumer Science
9	Family and Consumer Sciences
10	FCS
11	financial
12	Financial Management, Housing, and Consumer Education
13	Food Safety
14	Graphics
15	Home and Garden Information Center (College of Ag & Natural Resources)
16	Horticulture in all aspects - consumer and commercial
17	human development

*These have not been altered and are recorded exactly as participants wrote them in the online survey form.

Appendix I: College major categorization

Listed Degree*	Main Degree	Code
Ag and Extension Education	Agricultural & Extension Education	1
Ag. & Extension Education	Agricultural & Extension Education	1
Agricultural & Extension Education	Agricultural & Extension Education	1
Agricultural Extension & Extension Education	Agricultural & Extension Education	1
Agriculture and Extension Education	Agricultural & Extension Education	1
Agriculture Education	Agricultural & Extension Education	1
Animal Science (B.S.) & AG Education (M.S.)	Agricultural & Extension Education	1
BS - Agriculture Science; MS - Agriculture Education and Extension	Agricultural & Extension Education	1
BS Animal Science BS Agricultural Science and Technology MS Agriculture Leadership, Education, and Communication	Agricultural & Extension Education	1
BS Animal Science, MS Ag Extension Education	Agricultural & Extension Education	1
BS in Home Economics Education; MS in Extension Education	Agricultural & Extension Education	1
Extension & Education	Agricultural & Extension Education	1
Extension Education	Agricultural & Extension Education	1
Extension Education - Program Development & Evaluation	Agricultural & Extension Education	1
M.S. Agricultural Education	Agricultural & Extension Education	1
Agribusiness Economics	Agricultural Economics and Agribusiness	2
Agricultural Business/Economics	Agricultural Economics and Agribusiness	2
Agricultural Economics	Agricultural Economics and Agribusiness	2

Agriculture Leadership	Agriculture Leadership	3
Agriculture	Agriculture Sciences	4
Agriculture and Life Sciences	Agriculture Sciences	4
B.S. Animal Science M.S. Agriculture Science	Agriculture Sciences	4
agriculture technology	Agriculture Technology	5
Agronomy	Agronomy, Plant and Soil Sciences	6
Agronomy - Plant & Soil Science	Agronomy, Plant and Soil Sciences	6
Agronomy (BS; Agricultural Biology (MS)	Agronomy, Plant and Soil Sciences	6
Agronomy and Soil Science	Agronomy, Plant and Soil Sciences	6
Crop and Soil Environmental Sciences	Agronomy, Plant and Soil Sciences	6
Crop and Soil Sciences	Agronomy, Plant and Soil Sciences	6
crop science	Agronomy, Plant and Soil Sciences	6
Crops	Agronomy, Plant and Soil Sciences	6
Plant & Soil Science & Extension Education	Agronomy, Plant and Soil Sciences	6
Plant and Soil Science	Agronomy, Plant and Soil Sciences	6
Plant Physiology, Horticulture	Agronomy, Plant and Soil Sciences	6
Plant Science	Agronomy, Plant and Soil Sciences	6
Soil Science	Agronomy, Plant and Soil Sciences	6
Agriculture - Animal Science	Animal and Poultry Sciences	7
Animal and Poultry Science	Animal and Poultry Sciences	7
Animal Husbandry	Animal and Poultry Sciences	7
Animal Physiology	Animal and Poultry Sciences	7
Animal Production	Animal and Poultry Sciences	7
Animal Science	Animal and Poultry Sciences	7
Dairy Science	Animal and Poultry Sciences	7
livestock management	Animal and Poultry Sciences	7
Livestock, pasture management	Animal and Poultry Sciences	7
Reproductive Physiology	Animal and Poultry Sciences	7

Accounting	Business and Economics	8
Biology/Horticulture	Business and Economics	8
Business	Business and Economics	8
Business Administration	Business and Economics	8
Communications	Business and Economics	8
ECONOMICS	Business and Economics	8
Family and Consumer Studies (BA); Public Administration (MPA)	Business and Economics	8
Major: Hotel and Restaurant Administration, Minor: Business	Business and Economics	8
Management	Business and Economics	8
Public Administration	Business and Economics	8
Child and Family Studies	Child and Family Studies	9
Early Childhood	Child and Family Studies	9
Early Childhood Development	Child and Family Studies	9
Youth Development	Child and Family Studies	9
Community and Public Health Minor in Nutrition	Community and Public Health	10
Community Health Education	Community and Public Health	10
Community Nutrition	Community and Public Health	10
BS Home Economics Education with a Masters in Interior Design	Design	11
Graphic Design	Design	11
B.S. in Home Economics M.S. in Education	Education	12
Career and Technical Education	Education	12
Curriculum, Evaluation, and Research	Education	12
Education	Education	12
Education (Family & Consumer Sciences)	Education	12

Master in Education, bachelor in animal science	Education	12
Undergrad - Finance & Economics, Grad - Instructional Technologies	Education	12
Entomology	Entomology	13
Pest management	Entomology	13
Environmental Policy	Environmental Sciences	14
Environmental Sciences	Environmental Sciences	14
Environmental Studies	Environmental Sciences	14
Bachelor's Degree: Vocational Home Economics Education with specialty in Child Development. Master's Degree: Interdisciplinary Home Economics		
Family and Consumer Science	Family and Consumer Science	15
Family and Consumer Sciences, Secondary Education	Family and Consumer Science	15
Family consumer Sciences Educational leadership	Family and Consumer Science	15
Family Science	Family and Consumer Science	15
Home Economics	Family and Consumer Science	15
MS, Textiles and clothing additional course work: education	Family and Consumer Science	15
Fisheries	Fisheries and Wildlife	16
Wildlife	Fisheries and Wildlife	16
Food safety (consumer)	Food Science, Health and Nutrition	17
Health Education	Food Science, Health and Nutrition	17
MPH- Nutritional Epidemiology, Public Health Nutrition	Food Science, Health and Nutrition	17
Nutrition	Food Science, Health and Nutrition	17
Nutrition, Food Science	Food Science, Health and Nutrition	17
Public Health	Food Science, Health and Nutrition	17
Public Health Nutrition (Masters)	Food Science, Health and Nutrition	17
Agriculture and Natural Resources Systems Management	Forestry and Natural Resources	18

B.S. Natural Resources Master Agriculture & Extension Education	Forestry and Natural Resources	18
Forestry	Forestry and Natural Resources	18
Forestry and Wildlife	Forestry and Natural Resources	18
Natural Resource Conservation	Forestry and Natural Resources	18
Resource management	Forestry and Natural Resources	18
urban forestry	Forestry and Natural Resources	18
Water Quality	Forestry and Natural Resources	18
History	History and Political Science	19
Political Science	History and Political Science	19
Horticulture	Horticulture	20
Horticulture, PhD	Horticulture	20
Ornamental Horticulture, Landscape Design, Outdoor Recreation		
Resource Management	Horticulture	20
Human Ecology	Human Ecology and Environmental Science	21
Human Environmental Sceince	Human Ecology and Environmental Science	21
Interdisciplinary Studies Education K-6	Interdisciplinary Studies	22
Behavioral Science	Psychology and Counseling	23
counseling, group facilitation	Psychology and Counseling	23
Masters degree in social work	Psychology and Counseling	23
Social Psychology	Psychology and Counseling	23
Biological Systems Engineering	Science and Engineering	24
Biology	Science and Engineering	24
Engineering	Science and Engineering	24
Marine Science	Science and Engineering	24
Science	Science and Engineering	24

the natural sciences	Science and Engineering	24
Associates	Other	98
I am a program assistant.	Other	98
N/A	Other	98
Not Agriculture.	Other	98
NRM	Other	98
Strategic leadership	Other	98
Training and Development	Other	98
Ag Ed, Dairy Science, Animal Science	Multiple	99
Ag. Economics Animal Science	Multiple	99
Agr Education and Agr Sciences	Multiple	99
Agriculture Mechanics/Animal Science	Multiple	99
Agriculture/Extension Education/Natural Resources/Biology	Multiple	99
Animal Science & Extension Education	Multiple	99
Animal Science, Crop Science	Multiple	99
Animal Science, Extension Education	Multiple	99
ecology, forest genetics, ag economics	Multiple	99
Entomology & Plant Pathology and Sustainable Fruit & Veg Production	Multiple	99
History, Biology, and Chemistry - currently working on Masters of Science in Education with focus on Leadership and Agriculture.	Multiple	99
Home Economics; Counseling; Educational Leadership	Multiple	99
Horticulture and Agriculture Education	Multiple	99
Horticulture and entomology	Multiple	99
Horticulture, IPM systems	Multiple	99
Human Ecology, Merchandising and Design	Multiple	99
Human Ecology; Adult Learning	Multiple	99
Multiple	Multiple	99

*These have not been altered and are recorded exactly as participants wrote them in the online survey form.

Appendix J: Evaluation training list

*Written Descriptions of participants evaluation training experiences	
1	6 month course/workshop on NOAA's Designing education projects curriculum - online-based work, project, and in-person workshop
2	A half day training on evaluations as well as a masters level class on program evaluation
3	A mandatory training for all agents in our district last year. I thought it was helpful to know how to design an evaluation using qualtrics.
4	Agent/Specialist in-service via distance education.
5	Annual Conference and administrative meeting off minimal training. The amount of time required to participate in useful training is minimal. Pressure to do research, bring in funds, teach, advise, and write override time for evaluation training. There are no rewards to do evaluation. Evaluation staff is lacking and those we do have are dictatorial rather than willing to help!
6	Basic
7	Basic evaluation by a specialist
8	Basic Evaluation Preparedness
9	Basic in-service session on evaluating programs , importance and best practices.
10	Basic introduction during my new agent orientation and training sessions when I was first hired.
11	Basic new agent training on reporting system, and some curriculum based evaluations that are already created.
12	Basically how to fill the form out.
13	BEST program
14	Brief training in New Professional Orientation and a workshop as part as professional development within the 4-H Agents association.
15	Broad training at New Agent Orientation, more detailed training from another agent
16	Can't remember specifics
17	College level courses. No training specific to extension, but I do plan on it.

18 Completing evaluations Using programs such as SPSS
 19 County Director inservice trainings.
 20 Coursework when getting my Masters degree. 19 years ago.
 21 Coursework; Extension trainings
 22 Developing evaluation tools.

 23 Doctoral level training in program planning, implementation and evaluation; multiple in-services
 24 ECONOMIC IMPACT
 25 Education degree/program requirement to teach in public or private educational settings.

 26 Ethics of evaluation. Will attend American Evaluation Association conference. A few webinars on various topics.
 27 Evaluation methods, evaluation types, data analysis, evaluation purpose an design
 28 Evaluation trainig from [REDACTED]**
 29 Evaluation training with [REDACTED]**
 30 Extension Evaluation training
 31 Extension workshops and seminars/ in-service training
 32 Extensive training on relevance, response and results for impacts.
 Formal academic training for non-formal educational programs. Formal academic training for formal educational
 33 environments.
 34 Formal graduate work and inservice training.
 35 Graduate Course in Program Planning

 36 Graduate course on Evaluation at [REDACTED]** and training provided by [REDACTED]** at [REDACTED]**
 37 Graduate credit course in evaluation In-service training on developing and using evaluations
 38 Graduate level classes, webinars
 Graduate Level Course in Program development, implementation and evaluation, Continuing ed workshop on
 39 Evaluation systems, continuing ed workshop on our new evaluation system.
 Have had one formal two-day training on evaluation, plus several shorter sessions at new agent orientations, annual
 40 conference, etc.

41 How to complete a 24 hour recall and survey with participants. In school- all steps to preparing & implementing an evaluation.

42 How to conduct better surveys Evaluative thinking personal meetings

43 How to create and evaluate your evaluation

44 how to use evaluation templates

45 I have attended several one-day evaluation trainings provided by [REDACTED]**

46 I received a brief training during my orientation on how to use pre-made evals and analysis tools. I have also received training from a co-worker with immense knowledge and experience evaluating Extension programs.

In at least four or more of my classes for my master's degree dealt with evaluation in research. As a supervisor in food service and extension, I have had at least three classes in employee evaluation. I have Strength Finders classes that dealt wiht self valuation. [REDACTED]** has provided workshops and classes in evaluation in over my 18 years emplyedbut not too recently lately. Maybe it tiem to porvde agin for our newer employees and refresher/new updates for older employees. I'm just saying...

47 in house trainings by extension/university type evaluation experts

48 In Service

49 In service training.

50 in-service over [REDACTED]**

51 In-service related to program evaluation

52 in-service training (as a component of program planning to achieve desired impacts)

53 In-Service Training on Program Evaluation

54 In-service training through Extension

55 In-service training with other program assistants on how to conduct and report the evaluations that we are mandated to do.

56 In-service training, face to face and webinars

57 In-service training. (Brief settings)

58 In-service trainings focused on evaluation concepts, models and tools for gathering good data to use for program planning.

59 In-service trainings, Graduate Classes

60

61 In-services
 62 in-services with in university
 63 Inservice
 64 Inservice
 65 Inservice training
 66 Inservice workshops

 67 it has been years, but I was an operational auditor in a prior position. The training was related to the audit profession.
 68 Logic Model and processes that go into forming a good impactful evaluation
 69 Master classes and extension in-service
 70 Master Evaluator Training, [REDACTED] 2014
 Master's work, training workshops at [REDACTED] ** for Agricultural and 4-H Agents, federal training as
 71 an employee with the United States Department of Agriculture.
 72 Masters Course
 73 Masters level courses, in-service
 74 Multiple In-service trainings
 75 New Agent Training, inservice trainings, evaluation and survey trainings
 76 New Agent Training.
 77 New county extension director training; in service training
 Numerous trainings over the course of my 29 years in Extension. One undergraduate course and one graduate course
 78 (years ago).
 79 On line training and classroom training
 80 One day in-service training
 81 Part of Graduate course

 82 PhD program in Evaluation, on-going training through conferences and professional development workshops
 83 Professional development workshop
 84 Program evaluation
 85 Program Evaluation Training's - General and Specialized.

86 | Program Evaluations
87 | Program planning and evaluation techniques/methods taught by Extension specialists.
88 | Programming Processes in Adult Education [REDACTED]** Several short trainings on Evaluation Reviewing awards
89 | received by other agents (I saw how other agents did evaluations and then did the same thing)
90 | Research Methods/Statistics
91 | Routine Extension In-Services
92 | Sessions at Agent Inservices
93 | Several, putting together evaluation tools, ways to collect data, using data
94 | short course, several 1 hour sessions
95 | Specialist training on how to conduct and evaluate programs, Masters Course on research methods
96 | statistics and basic evaluation classes, in-service training
97 | Survey In-Service
98 | Teacher Evaluation training in [REDACTED]**
99 | There was an action evaluation specialist [REDACTED]**, that was willing to learn an agents program goals/objective
100 | and assist in designing the appropriate evaluation tool. But that level of specialist assistance is no longer available.
101 | Thesis study evaluation tools created, evaluation courses when working on Masters, on going evaluation segments
102 | with many in-service training on different topics, build in evaluation tools provided with different programs, multiple
103 | in-service training on valuation/report preparation, opportunities to apply for grants and awards that require evaluation
104 | tools built in. Extension Specialist and Program Leaders giving recommendations for evaluation for special projects,
105 | grants and awards.
106 | [REDACTED]** did a day long training at new agent training
107 | Training on the job
108 | Twice I received In-Service training specific to evaluation for part of a day late in my career after computerization. I
109 | took a semester long "Programming" course from the [REDACTED]** Dept. of Adult Education early in my career.

10	
3	University training
10	
4	Use on logic modeling and some evaluation instrument design
10	
5	various in-service trainings on evaluation and personal consults with evaluation specialists
10	
6	Various In-Service trainings over the years.
10	
7	Various leadership programs, lots of reading and self-education
10	
8	work shop on types of evaluation forms that can be put together for meeting evaluations
10	
9	Worked with [REDACTED]**
11	
0	Workshop at [REDACTED]** Winter Conference. Evaluation Grad School class
11	
1	WORKSHOP. POORLY DONE, UNFORTUNATELY

*These have not been altered and are recorded exactly as participants wrote them in the online survey form.

**Identifying Information has been removed

Appendix K: Non-respondent survey protocol

The session will begin with a phone call to a randomly selected Extension office within one of the states that have agreed to participate.

Upon the phone being answered, the following script will be read:

Q1: Interviewer: Hello, could you connect me to an Extension Agent who has some experience in program planning or evaluation

- If “no”
 - Thank you for your time. Have a good day.
- If “yes” continue with script. (Q2)

Q2: Interviewer: Hello, I am a student at Virginia Tech and I have recently conducted an online study in your region. You should have recently gotten an email from your state director regarding a research study on evaluation in Cooperative Extension. Did you complete this study?

- If “yes”
 - Thank you for your time, is there another agent in the office that I might speak to?
 - If “yes”
 - Start script at Q2 again once transferred to other agent
 - If “no”
 - Thank you for your time and thank you for your assistance in this research.
- If “no”
 - It is important to my research that I understand the opinions of individuals choosing to not completing the survey. In order to do so I have developed a brief survey of 17 questions that I can ask you over the phone. Would you be willing to complete this over-the-phone abbreviated survey at this time?
 - If “yes”
 - Begin at Q3
 - If “no”
 - Thank you for your time. Have a great day.

Q3: Interviewer: Thank you so much. First off if you still have the email, please note the consent form that is linked with the survey. Your information and responses will be kept confidential. Your name will not be recorded. No identifying information will be reported. The purpose of these questions is to determine if there is a significant difference in those who responded to the online survey and those who did not. You may choose to not answer any questions or you may choose to end this conversation at any time. Would you like a second copy of the consent form mailed to you?

- If “yes”
 - Mail form (provide time to review)
 - Do I have your consent to continue and record your responses on paper beginning now?

- If “yes”
 - Q4
 - If no”
 - Thank you, have a nice day.
- If “no”
 - Do I have your consent to continue and record your responses on paper beginning now?
 - If “yes”
 - Q4
 - If no”
 - Thank you, have a nice day.

Q4: We will now go over a brief subsection of the original survey. This survey is regarding your opinions of Evaluation within Cooperative Extension. There are 3 parts. In the first part I am going to read you an evaluation competency. These come from the field of Evaluation and all may not pertain to Extension. Please consider these in the context of your role within Cooperative Extension.

Using the options “Very Unskilled, Somewhat unskilled, Somewhat skilled and Highly Skilled”, Please indicate what you feel your skill level for the competency “Respects all stakeholders”

:Pause for response:

Thank you. Now with the same competency, “Respects all stakeholders”, Please indicate if feel that this skill is important, using the scale “Strongly disagree, disagree, agree or strongly agree”

:Pause for response:

Using the options “Very Unskilled, Somewhat unskilled, Somewhat skilled and Highly Skilled”, Please indicate what you feel your skill level for the competency “Understands the knowledge base of evaluation; meaning theories, models, methods and tools”

:Pause for response:

Thank you. Now with the same competency, “Understands the knowledge base of evaluation, meaning theories, models, methods and tools”, Please indicate if feel that this skill is important, using the scale “Strongly disagree, disagree, agree or strongly agree”

:Pause for response:

Using the options “Very Unskilled, Somewhat unskilled, Somewhat skilled and Highly Skilled”, Please indicate what you feel your skill level for the competency “Examines organizational, political, community, and social contexts”

:Pause for response:

Thank you. Now with the same competency, “Examines organizational, political, community, and social contexts”, Please indicate if feel that this skill is important, using the scale “Strongly disagree, disagree, agree or strongly agree”

:Pause for response:

Using the options “Very Unskilled, Somewhat unskilled, Somewhat skilled and Highly Skilled”, Please indicate what you feel your skill level for the competency “Reports on progress and results”

:Pause for response:

Thank you. Now with the same competency, “Reports on progress and results”, Please indicate if feel that this skill is important, using the scale “Strongly disagree, disagree, agree or strongly agree”

:Pause for response:

Using the options “Very Unskilled, Somewhat unskilled, Somewhat skilled and Highly Skilled”, Please indicate what you feel your skill level for the competency “Attends to issues of diversity and culture”

:Pause for response:

Thank you. Now with the same competency, “Attends to issues of diversity and culture”, Please indicate if feel that this skill is important, using the scale “Strongly disagree, disagree, agree or strongly agree”

Q5: Interviewer: That concludes the first part. The following items pertain to your perception of the culture of evaluation within Cooperative Extension. Please consider the culture of Cooperative Extension within your state when answering these questions.

Using the scale “Strongly disagree, Disagree, Neutral, Agree and Strongly agree” Please consider the culture of Cooperative Extension in your state regarding “Extension professionals respect each other’s perspectives and opinions.”

:Pause for response:

Using the scale “Strongly disagree, Disagree, Neutral, Agree and Strongly agree” Please consider the culture of Cooperative Extension in your state regarding “When trying to solve problems, Extension professionals use a process of working through the problem before identifying solutions.”

:Pause for response:

Using the scale “Strongly disagree, Disagree, Neutral, Agree and Strongly agree” Please consider the culture of Cooperative Extension in your state regarding “Extension professionals are willing to take risks in the course of their work.”

:Pause for response:

Thank you.

Q6: Interviewer: We are now at the third and final part. Items in this section will refer to conducting program evaluations. Please use the sliding bar on each question to indicate your response. Please consider your role within Cooperative Extension when responding to the following question

“Using the numbers 1-7 with 1 being Strongly disagree, and 7 being Strongly agree”
what would you rank the statement “I want to conduct evaluations as a part of my job”
:Pause for response:

“Using the numbers 1-7 with 1 being worthless, and 7 being useful” what would you rank
the statement “Conducting evaluations as part of my job is”
:Pause for response:

“Using the numbers 1-7 with 1 being not at all important, and 7 being extremely
important” what would you rank the statement “Most people who are important to me
think that evaluation is:”
:Pause for response:

“Using the numbers 1-7 with 1 being easy, and 7 being hard” what would you rank the
statement “For me, conducting evaluations is:”

Q7: Interviewer: Thank you for your time. That is all the questions I have today. I
appreciate your time and all the work that you do for Cooperative Extension.

Appendix L: Table of Competency Rankings by Expert Panel

Question	Very Unimportant	Somewhat Unimportant	Somewhat Important	Very Important	Total Responses	Total Important	Percent Important
1.1 Applies professional evaluation standards	0	1	2	10	13	12	92.31%
1.2 Acts ethically and strives for integrity and honesty	0	0	0	13	13	13	100.00%
1.3 Respects all stakeholders	0	0	0	13	13	13	100.00%
1.4 Considers human rights and the public welfare in evaluation practice	0	0	1	12	13	13	100.00%
1.5 Provides independent and impartial perspective	0	1	2	9	12	11	91.67%
1.6 Aware of self as an evaluator (knowledge, skills, dispositions) and reflects on personal evaluation practice (competencies and areas for growth)	0	1	2	10	13	12	92.31%
1.7 Pursues professional networks and self development to enhance	1	1	3	8	13	11	84.62%

evaluation practice							
2.1 Understands the knowledge base of evaluation (theories, models, types, methods and tools)	1	0	4	8	13	12	92.31%
2.2 Specifies program theory	0	0	10	3	13	13	100.00%
2.3 Determines the purpose for the evaluation	0	0	2	11	13	13	100.00%
2.4 Determines program evaluability	0	3	2	8	13	10	76.92%
2.5 Frames evaluation questions	0	2	1	10	13	11	84.62%
2.6 Develops evaluation designs	1	1	2	9	13	11	84.62%
2.7 Defines evaluation methods (quantitative, qualitative or mixed)	1	1	4	7	13	11	84.62%
2.8 Identifies data sources	0	0	4	9	13	13	100.00%
2.9 Develops reliable and valid measures/tools	1	3	1	8	13	9	69.23%
2.10 Collects data	0	0	3	10	13	13	100.00%
2.11 Assesses validity of data	0	4	2	7	13	9	69.23%
2.12 Assesses reliability of data	0	4	2	7	13	9	69.23%

2.13 Assesses trustworthiness of data	0	2	3	8	13	11	84.62%
2.14 Analyzes and interprets data	0	2	3	8	13	11	84.62%
2.15 Draws conclusions and makes recommendations	0	1	3	9	13	12	92.31%
2.16 Reports evaluation findings and results	0	1	0	12	13	12	92.31%
3.1 Respects the uniqueness of the site	0	0	6	7	13	13	100.00%
3.2 Examines organizational, political, community and social contexts	0	1	5	7	13	12	92.31%
3.3 Identifies impacted stakeholders	0	0	2	11	13	13	100.00%
3.4 Identifies the interests of all stakeholders	0	0	2	10	12	12	100.00%
3.5 Serves the information needs of intended users	0	0	2	11	13	13	100.00%
3.6 Attends to issues of evaluation use	0	1	4	8	13	12	92.31%
3.7 Attends to issues of organizational and environmental change	1	3	4	5	13	9	69.23%

3.8 Applies evaluation competencies to organization and program measurement challenges	1	1	3	8	13	11	84.62%
3.9 Shares evaluation expertise	1	1	1	10	13	11	84.62%
4.1 Defines work parameters, plans and agreements	0	1	5	7	13	12	92.31%
4.2 Attends to issues of evaluation feasibility	0	2	5	6	13	11	84.62%
4.3 Identifies required resources (human, financial and physical)	0	2	5	6	13	11	84.62%
4.4 Monitors resources (human, financial and physical)	0	2	5	6	13	11	84.62%
4.5 Coordinates and supervises others	0	2	8	3	13	11	84.62%
4.6 Reports on progress and results	0	0	3	10	13	13	100.00%
4.7 Identifies and mitigates problems / issues	1	1	2	9	13	11	84.62%
5.1 Uses written communication skills and technologies	0	0	2	11	13	13	100.00%

5.2 Uses verbal communication skills	0	0	2	11	13	13	100.00%
5.3 Uses listening skills	0	0	0	13	13	13	100.00%
5.4 Uses negotiation skills	1	0	1	11	13	12	92.31%
5.5 Uses conflict resolution skills	0	0	2	11	13	13	100.00%
5.6 Uses facilitation skills (group work)	0	0	0	13	13	13	100.00%
5.7 Uses interpersonal skills (individual and teams)	0	0	0	13	13	13	100.00%
5.8 Uses collaboration / partnering skills	0	0	0	13	13	13	100.00%
5.9 Attends to issues of diversity and culture	0	0	2	11	13	13	100.00%
5.10 Demonstrates professional credibility	0	0	1	12	13	13	100.00%

Appendix M: Full ranking of all competencies by skill

Competency	<i>n</i>	Minimum	Maximum	<i>M</i>	<i>SD</i>
.-2.2 Specifies program theory	213	1	4	2.55	0.767
.-2.6 Develops evaluation designs	216	1	4	2.61	0.732
.-4.2 Attends to issues of evaluation feasibility	215	1	4	2.61	0.765
.-3.9 Shares evaluation expertise	217	1	4	2.65	0.786
.-3.2 Examines organizational, political, community and social contexts	215	1	4	2.66	0.768
.-3.8 Applies evaluation competencies to organization and program measurement challenges	217	1	4	2.71	0.748
.-2.9 Develops reliable and valid measures/tools	215	1	4	2.73	0.69
.-3.6 Attends to issues of evaluation use	214	1	4	2.76	0.715
.-3.7 Attends to issues of organizational and environmental change	212	1	4	2.76	0.696
.-2.12 Assesses reliability of data	214	1	4	2.77	0.756
.-2.1 Understands the knowledge base of evaluation (theories, models, types, methods and tools)	221	1	4	2.78	0.733
.-2.7 Defines evaluation methods (quantitative, qualitative or mixed)	216	1	4	2.78	0.724
.-2.11 Assesses validity of data	217	1	4	2.81	0.739
.-2.13 Assesses trustworthiness of data	215	1	4	2.83	0.767
.-4.1 Defines work parameters, plans and agreements	216	1	4	2.84	0.737
.-2.5 Frames evaluation questions	216	1	4	2.86	0.646
.-2.4 Determines program evaluability	219	1	4	2.91	0.636
.-3.1 Respects the uniqueness of the site	213	1	4	2.96	0.716
.-2.14 Analyzes and interprets data	218	1	4	2.99	0.668

.-4.3 Identifies required resources (human, financial and physical)	217	1	4	3	0.767
.-2.8 Identifies data sources	216	1	4	3.01	0.672
.-3.4 Identifies the interests of all stakeholders	215	1	4	3.03	0.676
.-1.1 Applies professional evaluation standards	221	1	4	3.04	0.653
.-1.7 Pursues professional networks and self development to enhance evaluation practice	220	1	4	3.05	0.7
.-4.4 Monitors resources (human, financial and physical)	217	1	4	3.05	0.774
.-2.16 Reports evaluation findings and results	219	1	4	3.08	0.637
.-4.7 Identifies and mitigates problems / issues	216	1	4	3.12	0.664
.-5.4 Uses negotiation skills	215	1	4	3.12	0.615
.-5.5 Uses conflict resolution skills	215	1	4	3.12	0.666
.-3.5 Serves the information needs of intended users	217	1	4	3.13	0.675
.-2.15 Draws conclusions and makes recommendations	217	1	4	3.14	0.666
.-3.3 Identifies impacted stakeholders	217	1	4	3.15	0.645
.-4.5 Coordinates and supervises others	216	1	4	3.16	0.7
.-2.3 Determines the purpose for the evaluation	214	1	4	3.17	0.687
.-2.10 Collects data	219	1	4	3.18	0.643
.-4.6 Reports on progress and results	216	1	4	3.18	0.652
.-1.6 Aware of self as an evaluator (knowledge, skills, dispositions) and reflects on personal evaluation practice (competencies and areas for growth)	220	1	4	3.19	0.624
.-5.9 Attends to issues of diversity and culture	217	1	4	3.22	0.648
.-5.6 Uses facilitation skills (group work)	217	1	4	3.28	0.629
.-5.7 Uses interpersonal skills (individual and teams)	217	1	4	3.36	0.608
.-1.5 Provides independent and impartial perspective	219	1	4	3.37	0.562
.-5.8 Uses collaboration / partnering skills	217	1	4	3.41	0.603

.-1.4 Considers human rights and the public welfare in evaluation practice	221	1	4	3.43	0.668
.-5.1 Uses written communication skills and technologies	216	1	4	3.44	0.636
.-5.2 Uses verbal communication skills	219	1	4	3.48	0.593
.-5.3 Uses listening skills	219	1	4	3.48	0.577
.-5.10 Demonstrates professional credibility	217	1	4	3.56	0.567
.-1.3 Respects all stakeholders	222	2	4	3.73	0.467
.-1.2 Acts ethically and strives for integrity and honesty	222	1	4	3.85	0.408

Appendix N: Full ranking of all competencies by importance

Competency	<i>n</i>	Minimum	Maximum	<i>M</i>	<i>SD</i>
.-2.2 Specifies program theory	211	1	4	2.87	0.695
.-4.2 Attends to issues of evaluation feasibility	211	1	4	3.09	0.648
.-2.6 Develops evaluation designs	215	1	4	3.13	0.589
.-3.9 Shares evaluation expertise	213	1	4	3.13	0.6
.-3.2 Examines organizational, political, community and social contexts	213	1	4	3.14	0.665
.-3.6 Attends to issues of evaluation use	211	1	4	3.14	0.606
.-3.8 Applies evaluation competencies to organization and program measurement challenges	213	1	4	3.15	0.614
.-3.7 Attends to issues of organizational and environmental change	209	1	4	3.17	0.612
.-4.1 Defines work parameters, plans and agreements	211	1	4	3.17	0.577
.-2.7 Defines evaluation methods (quantitative, qualitative or mixed)	214	1	4	3.18	0.618
.-3.1 Respects the uniqueness of the site	210	2	4	3.18	0.583
.-2.1 Understands the knowledge base of evaluation (theories, models, types, methods and tools)	217	1	4	3.19	0.613
.-2.9 Develops reliable and valid measures/tools	213	1	4	3.24	0.656
.-2.4 Determines program evaluability	215	1	4	3.25	0.538
.-2.5 Frames evaluation questions	217	2	4	3.25	0.555
.-2.8 Identifies data sources	215	1	4	3.25	0.58

.-4.4 Monitors resources (human, financial and physical)	212	1	4	3.3	0.624
.-1.7 Pursues professional networks and self development to enhance evaluation practice	217	1	4	3.32	0.629
.-4.3 Identifies required resources (human, financial and physical)	213	1	4	3.33	0.57
.-2.11 Assesses validity of data	214	1	4	3.36	0.646
.-3.3 Identifies impacted stakeholders	214	2	4	3.36	0.562
.-2.12 Assesses reliability of data	212	1	4	3.37	0.643
.-3.4 Identifies the interests of all stakeholders	212	1	4	3.37	0.548
.-4.5 Coordinates and supervises others	211	1	4	3.37	0.615
.-2.14 Analyzes and interprets data	216	2	4	3.38	0.558
.-1.6 Aware of self as an evaluator (knowledge, skills, dispositions) and reflects on personal evaluation practice (competencies and areas for growth)	216	2	4	3.39	0.535
.-3.5 Serves the information needs of intended users	214	2	4	3.39	0.544
.-2.13 Assesses trustworthiness of data	212	2	4	3.41	0.589
.-1.1 Applies professional evaluation standards	217	1	4	3.42	0.557
.-2.3 Determines the purpose for the evaluation	213	2	4	3.42	0.574
.-2.16 Reports evaluation findings and results	217	2	4	3.43	0.541
.-5.9 Attends to issues of diversity and culture	215	1	4	3.43	0.672
.-4.7 Identifies and mitigates problems / issues	210	2	4	3.44	0.569
.-5.4 Uses negotiation skills	214	1	4	3.45	0.594
.-2.10 Collects data	216	2	4	3.47	0.518
.-2.15 Draws conclusions and makes recommendations	215	2	4	3.47	0.536
.-5.5 Uses conflict resolution	213	2	4	3.48	0.579

skills					
.-4.6 Reports on progress and results	214	2	4	3.49	0.51
.-5.6 Uses facilitation skills (group work)	212	2	4	3.5	0.546
.-5.1 Uses written communication skills and technologies	215	2	4	3.58	0.531
.-5.8 Uses collaboration / partnering skills	214	2	4	3.58	0.513
.-5.7 Uses interpersonal skills (individual and teams)	213	2	4	3.59	0.502
.-1.4 Considers human rights and the public welfare in evaluation practice	215	1	4	3.61	0.577
.-5.2 Uses verbal communication skills	216	2	4	3.67	0.482
.-1.5 Provides independent and impartial perspective	218	2	4	3.69	0.493
.-5.3 Uses listening skills	216	3	4	3.72	0.449
.-5.10 Demonstrates professional credibility	214	3	4	3.73	0.446
.-1.3 Respects all stakeholders	219	2	4	3.81	0.403
.-1.2 Acts ethically and strives for integrity and honesty	219	3	4	3.9	0.295

Appendix O: List of negatively coded items and recoding

Item ID	Item Wording	Original Coding	Recoding
Q6	Conducting evaluation as a part of my job is:	1= Pleasant (For me); 7= Unpleasant (For me)	1=Unpleasant (For me) ; 7= Pleasant (For me)
Q8	Conducting evaluation as a part of my job is:	1=Interesting; 7=Boring	1=Boring; 7=Interesting
Q11	Most people who are important to me (in my job) think that I should:	1=Conduct evaluations; 7=Not conduct evaluations	1=Not conduct evaluations; 7= Conduct evaluations
Q12	It is expected of me that I conduct evaluations:	1=Agree; 7=Disagree	1=Disagree; 7=Agree
Q13	It is common to discuss program evaluations in my workplace:	1=Agree; 7=Disagree	1=Disagree; 7=Agree
Q14	I feel under social pressure to conduct evaluations:	1=Agree; 7=Disagree	1=Disagree; 7=Agree
Q15	People who are important to me want me to conduct evaluations:	1=Agree; 7=Disagree	1=Disagree; 7=Agree
Q34	I am confident I can conduct evaluations if I want to	1=Agree; 7=Disagree	1=Disagree; 7=Agree
Q35	For me, conducting evaluations is	1=Easy; 7=Hard	1=Hard; 7=Easy
Q38	Whether or not I conduct evaluations is entirely up to me	1=Agree; 7=Disagree	1=Disagree; 7=Agree

Appendix P: List of questions organized by variable and subscale

Item Number	Item Wording	Subscale	Variable
Q17_1_1	Please rate your skill level with each item-1.1 Applies professional evaluation standards	Skill	Skill Mean (Behavior)
Q17_1_2	Please rate your skill level with each item-1.2 Acts ethically and strives for integrity and honesty	Skill	Skill Mean (Behavior)
Q17_1_3	Please rate your skill level with each item-1.3 Respects all stakeholders	Skill	Skill Mean (Behavior)
Q17_1_4	Please rate your skill level with each item-1.4 Considers human rights and the public welfare in evaluation practice	Skill	Skill Mean (Behavior)
Q17_1_5	Please rate your skill level with each item-1.5 Provides independent and impartial perspective	Skill	Skill Mean (Behavior)
Q17_1_6	Please rate your skill level with each item-1.6 Aware of self as an evaluator (knowledge, skills, dispositions) and reflects on personal evaluation practice (competencies and areas for growth)	Skill	Skill Mean (Behavior)
Q17_1_8	Please rate your skill level with each item-1.7 Pursues professional networks and self development to enhance evaluation practice	Skill	Skill Mean (Behavior)
Q17_1_9	Please rate your skill level with each item-2.1 Understands the knowledge base of evaluation (theories, models, types, methods and tools)	Skill	Skill Mean (Behavior)
Q17_1_10	Please rate your skill level with each item-2.2 Specifies program theory	Skill	Skill Mean (Behavior)
Q17_1_11	Please rate your skill level with each item-2.3 Determines the purpose for the evaluation	Skill	Skill Mean (Behavior)
Q17_1_12	Please rate your skill level with each item-2.4 Determines program evaluability	Skill	Skill Mean (Behavior)
Q17_1_13	Please rate your skill level with each item-2.5 Frames evaluation questions	Skill	Skill Mean (Behavior)
Q17_1_14	Please rate your skill level with each item-2.6 Develops evaluation designs	Skill	Skill Mean (Behavior)
Q17_1_15	Please rate your skill level with each item-2.7 Defines evaluation methods (quantitative, qualitative or mixed)	Skill	Skill Mean (Behavior)
Q17_1_16	Please rate your skill level with each item-2.8 Identifies data sources	Skill	Skill Mean (Behavior)
Q17_1_17	Please rate your skill level with each item-2.9 Develops reliable and valid measures/tools	Skill	Skill Mean (Behavior)

Q17_1_18	Please rate your skill level with each item-2.10 Collects data	Skill	Skill Mean (Behavior)
Q17_1_19	Please rate your skill level with each item-2.11 Assesses validity of data	Skill	Skill Mean (Behavior)
Q17_1_20	Please rate your skill level with each item-2.12 Assesses reliability of data	Skill	Skill Mean (Behavior)
Q17_1_21	Please rate your skill level with each item-2.13 Assesses trustworthiness of data	Skill	Skill Mean (Behavior)
Q17_1_22	Please rate your skill level with each item-2.14 Analyzes and interprets data	Skill	Skill Mean (Behavior)
Q17_1_23	Please rate your skill level with each item-2.15 Draws conclusions and makes recommendations	Skill	Skill Mean (Behavior)
Q17_1_24	Please rate your skill level with each item-2.16 Reports evaluation findings and results	Skill	Skill Mean (Behavior)
Q17_1_25	Please rate your skill level with each item-3.1 Respects the uniqueness of the site	Skill	Skill Mean (Behavior)
Q17_1_26	Please rate your skill level with each item-3.2 Examines organizational, political, community and social contexts	Skill	Skill Mean (Behavior)
Q17_1_27	Please rate your skill level with each item-3.3 Identifies impacted stakeholders	Skill	Skill Mean (Behavior)
Q17_1_28	Please rate your skill level with each item-3.4 Identifies the interests of all stakeholders	Skill	Skill Mean (Behavior)
Q17_1_29	Please rate your skill level with each item-3.5 Serves the information needs of intended users	Skill	Skill Mean (Behavior)
Q17_1_30	Please rate your skill level with each item-3.6 Attends to issues of evaluation use	Skill	Skill Mean (Behavior)
Q17_1_31	Please rate your skill level with each item-3.7 Attends to issues of organizational and environmental change	Skill	Skill Mean (Behavior)
Q17_1_32	Please rate your skill level with each item-3.8 Applies evaluation competencies to organization and program measurement challenges	Skill	Skill Mean (Behavior)
Q17_1_33	Please rate your skill level with each item-3.9 Shares evaluation expertise	Skill	Skill Mean (Behavior)
Q17_1_34	Please rate your skill level with each item-4.1 Defines work parameters, plans and agreements	Skill	Skill Mean (Behavior)
Q17_1_35	Please rate your skill level with each item-4.2 Attends to issues of evaluation feasibility	Skill	Skill Mean (Behavior)
Q17_1_36	Please rate your skill level with each item-4.3 Identifies required resources (human, financial and physical)	Skill	Skill Mean (Behavior)
Q17_1_37	Please rate your skill level with each item-4.4 Monitors resources (human, financial and physical)	Skill	Skill Mean (Behavior)
Q17_1_38	Please rate your skill level with each item-4.5 Coordinates and supervises others	Skill	Skill Mean (Behavior)

Q17_1_39	Please rate your skill level with each item-4.6 Reports on progress and results	Skill	Skill Mean (Behavior)
Q17_1_40	Please rate your skill level with each item-4.7 Identifies and mitigates problems / issues	Skill	Skill Mean (Behavior)
Q17_1_41	Please rate your skill level with each item-5.1 Uses written communication skills and technologies	Skill	Skill Mean (Behavior)
Q17_1_42	Please rate your skill level with each item-5.2 Uses verbal communication skills	Skill	Skill Mean (Behavior)
Q17_1_43	Please rate your skill level with each item-5.3 Uses listening skills	Skill	Skill Mean (Behavior)
Q17_1_44	Please rate your skill level with each item-5.4 Uses negotiation skills	Skill	Skill Mean (Behavior)
Q17_1_45	Please rate your skill level with each item-5.5 Uses conflict resolution skills	Skill	Skill Mean (Behavior)
Q17_1_46	Please rate your skill level with each item-5.6 Uses facilitation skills (group work)	Skill	Skill Mean (Behavior)
Q17_1_47	Please rate your skill level with each item-5.7 Uses interpersonal skills (individual and teams)	Skill	Skill Mean (Behavior)
Q17_1_48	Please rate your skill level with each item-5.8 Uses collaboration / partnering skills	Skill	Skill Mean (Behavior)
Q17_1_49	Please rate your skill level with each item-5.9 Attends to issues of diversity and culture	Skill	Skill Mean (Behavior)
Q17_1_50	Please rate your skill level with each item-5.10 Demonstrates professional credibility	Skill	Skill Mean (Behavior)
Q17_2_1	I feel this competency is important-1.1 Applies professional evaluation standards	Perception of Importance	Perception Mean
Q17_2_2	I feel this competency is important-1.2 Acts ethically and strives for integrity and honesty	Perception of Importance	Perception Mean
Q17_2_3	I feel this competency is important-1.3 Respects all stakeholders	Perception of Importance	Perception Mean
Q17_2_4	I feel this competency is important-1.4 Considers human rights and the public welfare in evaluation practice	Perception of Importance	Perception Mean
Q17_2_5	I feel this competency is important-1.5 Provides independent and impartial perspective	Perception of Importance	Perception Mean
Q17_2_6	I feel this competency is important-1.6 Aware of self as an evaluator (knowledge, skills, dispositions) and reflects on personal evaluation practice (competencies and areas for growth)	Perception of Importance	Perception Mean

Q17_2_8	I feel this competency is important-1.7 Pursues professional networks and self development to enhance evaluation practice	Perception of Importance	Perception Mean
Q17_2_9	I feel this competency is important-2.1 Understands the knowledge base of evaluation (theories, models, types, methods and tools)	Perception of Importance	Perception Mean
Q17_2_10	I feel this competency is important-2.2 Specifies program theory	Perception of Importance	Perception Mean
Q17_2_11	I feel this competency is important-2.3 Determines the purpose for the evaluation	Perception of Importance	Perception Mean
Q17_2_12	I feel this competency is important-2.4 Determines program evaluability	Perception of Importance	Perception Mean
Q17_2_13	I feel this competency is important-2.5 Frames evaluation questions	Perception of Importance	Perception Mean
Q17_2_14	I feel this competency is important-2.6 Develops evaluation designs	Perception of Importance	Perception Mean
Q17_2_15	I feel this competency is important-2.7 Defines evaluation methods (quantitative, qualitative or mixed)	Perception of Importance	Perception Mean
Q17_2_16	I feel this competency is important-2.8 Identifies data sources	Perception of Importance	Perception Mean
Q17_2_17	I feel this competency is important-2.9 Develops reliable and valid measures/tools	Perception of Importance	Perception Mean
Q17_2_18	I feel this competency is important-2.10 Collects data	Perception of Importance	Perception Mean
Q17_2_19	I feel this competency is important-2.11 Assesses validity of data	Perception of Importance	Perception Mean
Q17_2_20	I feel this competency is important-2.12 Assesses reliability of data	Perception of Importance	Perception Mean
Q17_2_21	I feel this competency is important-2.13 Assesses trustworthiness of data	Perception of Importance	Perception Mean
Q17_2_22	I feel this competency is important-2.14 Analyzes and interprets data	Perception of Importance	Perception Mean

Q17_2_23	I feel this competency is important-2.15 Draws conclusions and makes recommendations	Perception of Importance	Perception Mean
Q17_2_24	I feel this competency is important-2.16 Reports evaluation findings and results	Perception of Importance	Perception Mean
Q17_2_25	I feel this competency is important-3.1 Respects the uniqueness of the site	Perception of Importance	Perception Mean
Q17_2_26	I feel this competency is important-3.2 Examines organizational, political, community and social contexts	Perception of Importance	Perception Mean
Q17_2_27	I feel this competency is important-3.3 Identifies impacted stakeholders	Perception of Importance	Perception Mean
Q17_2_28	I feel this competency is important-3.4 Identifies the interests of all stakeholders	Perception of Importance	Perception Mean
Q17_2_29	I feel this competency is important-3.5 Serves the information needs of intended users	Perception of Importance	Perception Mean
Q17_2_30	I feel this competency is important-3.6 Attends to issues of evaluation use	Perception of Importance	Perception Mean
Q17_2_31	I feel this competency is important-3.7 Attends to issues of organizational and environmental change	Perception of Importance	Perception Mean
Q17_2_32	I feel this competency is important-3.8 Applies evaluation competencies to organization and program measurement challenges	Perception of Importance	Perception Mean
Q17_2_33	I feel this competency is important-3.9 Shares evaluation expertise	Perception of Importance	Perception Mean
Q17_2_34	I feel this competency is important-4.1 Defines work parameters, plans and agreements	Perception of Importance	Perception Mean
Q17_2_35	I feel this competency is important-4.2 Attends to issues of evaluation feasibility	Perception of Importance	Perception Mean
Q17_2_36	I feel this competency is important-4.3 Identifies required resources (human, financial and physical)	Perception of Importance	Perception Mean
Q17_2_37	I feel this competency is important-4.4 Monitors resources (human, financial and physical)	Perception of Importance	Perception Mean

Q17_2_38	I feel this competency is important-4.5 Coordinates and supervises others	Perception of Importance Perception	Perception Mean
Q17_2_39	I feel this competency is important-4.6 Reports on progress and results	Perception of Importance Perception	Perception Mean
Q17_2_40	I feel this competency is important-4.7 Identifies and mitigates problems / issues	Perception of Importance Perception	Perception Mean
Q17_2_41	I feel this competency is important-5.1 Uses written communication skills and technologies	Perception of Importance Perception	Perception Mean
Q17_2_42	I feel this competency is important-5.2 Uses verbal communication skills	Perception of Importance Perception	Perception Mean
Q17_2_43	I feel this competency is important-5.3 Uses listening skills	Perception of Importance Perception	Perception Mean
Q17_2_44	I feel this competency is important-5.4 Uses negotiation skills	Perception of Importance Perception	Perception Mean
Q17_2_45	I feel this competency is important-5.5 Uses conflict resolution skills	Perception of Importance Perception	Perception Mean
Q17_2_46	I feel this competency is important-5.6 Uses facilitation skills (group work)	Perception of Importance Perception	Perception Mean
Q17_2_47	I feel this competency is important-5.7 Uses interpersonal skills (individual and teams)	Perception of Importance Perception	Perception Mean
Q17_2_48	I feel this competency is important-5.8 Uses collaboration / partnering skills	Perception of Importance Perception	Perception Mean
Q17_2_49	I feel this competency is important-5.9 Attends to issues of diversity and culture	Perception of Importance Perception	Perception Mean
Q17_2_50	I feel this competency is important-5.10 Demonstrates professional credibility	Perception of Importance	Perception Mean
Q19_1	Extension professionals respect each other's perspectives and opinions.	Culture	Culture Mean
Q19_2	Extension professionals ask each other for information about work issues and activities.	Culture	Culture Mean
Q19_3	Extension professionals continuously look for ways to improve processes, products and services.	Culture	Culture Mean

Q19_4	Extension professionals are provided opportunities to think about and reflect on their work.	Culture	Culture Mean
Q19_5	Extension professionals often stop to talk about the pressing work issues we're facing.	Culture	Culture Mean
Q19_6	When trying to solve problems, Extension professionals use a process of working through the problem before identifying solutions.	Culture	Culture Mean
Q19_7	There is little competition among Extension professionals for recognition or rewards.	Culture	Culture Mean
Q19_8	Extension professionals operate from a spirit of cooperation, rather than competition.	Culture	Culture Mean
Q19_9	Extension professionals tend to work collaboratively with each other.	Culture	Culture Mean
Q19_10	Extension professionals are more concerned about how their work contributes to the success of the organization than they are about their individual success.	Culture	Culture Mean
Q19_11	Extension professionals face conflict over work issues in productive ways.	Culture	Culture Mean
Q19_12	Extension professionals generally view problems or issues as opportunities to learn.	Culture	Culture Mean
Q19_13	Mistakes made by Extension professionals are viewed as opportunities for learning.	Culture	Culture Mean
Q19_14	Extension professionals continuously ask themselves how they're doing, what they can do better, and what is working.	Culture	Culture Mean
Q19_15	Extension professionals are willing to take risks in the course of their work.	Culture	Culture Mean
Q19_16	Extension professionals are committed to being innovative and forward looking.	Culture	Culture Mean
Q19_17	Extension professionals are confident that mistakes or failures will not affect them negatively.	Culture	Culture Mean
Q19_18	Extension professionals generally trust their administrators or supervisors.	Culture	Culture Mean
Q19_19	Administration and supervisors view individuals' capacity to learn as the organization's greatest resource.	Culture	Culture Mean
Q19_20	Extension professionals use data/information to inform their decision-making.	Culture	Culture Mean
Q19_21	Asking questions and raising issues about work is encouraged.	Culture	Culture Mean
Q19_22	Extension professionals are not afraid to share their opinions even if those opinions are different from the majority.	Culture	Culture Mean

Q19_23	I feel safe explaining to others why I think or feel the way I do about an issue.	Culture	Culture Mean
Q19_24	Extension professionals are encouraged to take the lead in initiating change or in trying to do something different.	Culture	Culture Mean
Q19_25	Administrators and supervisors make decisions after considering the input of those affected	Culture	Culture Mean
Q19_26	In meetings Extension professionals are encouraged to discuss the values and beliefs that underlie their opinions.	Culture	Culture Mean
Q19_27	Extension professionals are encouraged to offer dissenting opinions and alternative viewpoints.	Culture	Culture Mean
Q3_1	I expect to conduct evaluations as a part of my job:	Theory of Planned Behavior	Implementation Intention
Q27_4	I want to conduct evaluations as a part of my job:	Theory of Planned Behavior	Implementation Intention
Q28_1	I intend to conduct evaluations as part of my job:	Theory of Planned Behavior	Implementation Intention
Q6_1	Conducting evaluation as a part of my job is:	Theory of Planned Behavior	Attitude
Q7_1	Conducting evaluation as a part of my job is:	Theory of Planned Behavior	Attitude
Q8_1	Conducting evaluation as a part of my job is:	Theory of Planned Behavior	Attitude
Q11_1	Most people who are important to me (in my job) think that I should:	Theory of Planned Behavior	Subjective Norm
Q10_1	Most people who are important to me think that evaluation is:	Theory of Planned Behavior	Subjective Norm
Q12_1	It is expected of me that I conduct evaluations:	Theory of Planned Behavior	Subjective Norm
Q13_1	It is common to discuss program evaluations in my workplace:	Theory of Planned Behavior	Subjective Norm
Q14_1	I feel under social pressure to conduct evaluations:	Theory of Planned Behavior	Subjective Norm
Q15_1	People who are important to me want me to conduct evaluations:	Theory of Planned Behavior	Subjective Norm

Q34_1	I am confident I can conduct evaluations if I want to	Theory of Planned Behavior	Perceived Behavioral Control
Q35_1	For me, conducting evaluations is	Theory of Planned Behavior	Perceived Behavioral Control
Q37_1	The decision to conduct evaluation is beyond my control	Theory of Planned Behavior	Perceived Behavioral Control
Q38_1	Whether or not I conduct evaluations is entirely up to me	Theory of Planned Behavior	Perceived Behavioral Control
Q21	How many years of experience do you have working in Cooperative Extension?	NA	Years of Experience
Q22_1	What is your program area?	NA	Program Area
Q25	What is your highest level of education?	NA	Degree Level
Q23	What major, field, or specialty is your degree in?	NA	Major
Q31	Have you completed any training related to evaluation?	NA	Evaluation Training
Q32	Please describe the type of training you received:	NA	Evaluation Training
Q29	What is your location?	NA	Location

Appendix Q: Mean Weighted Discrepancy Score Table

Competency	MWDC	<i>n</i>
2.12 Assesses reliability of data	1.92	212
2.13 Assesses trustworthiness of data	1.82	212
2.11 Assesses validity of data	1.71	214
2.6 Develops evaluation designs	1.59	215
2.9 Develops reliable and valid measures/tools	1.57	213
3.2 Examines organizational, political, community and social contexts	1.43	213
3.9 Shares evaluation expertise	1.35	213
4.2 Attends to issues of evaluation feasibility	1.35	211
2.5 Frames evaluation questions	1.33	217
3.8 Applies evaluation competencies to organization and program measurement challenges	1.24	213
2.14 Analyzes and interprets data	1.24	216
2.7 Defines evaluation methods (quantitative, qualitative or mixed)	1.17	214
3.7 Attends to issues of organizational and environmental change	1.17	209
2.1 Understands the knowledge base of evaluation (theories, models, types, methods and tools)	1.15	217
1.1 Applies professional evaluation standards	1.14	217
1.5 Provides independent and impartial perspective	1.13	218
5.5 Uses conflict resolution skills	1.12	212
2.16 Reports evaluation findings and results	1.09	217
5.4 Uses negotiation skills	1.09	213
3.6 Attends to issues of evaluation use	1.06	211
2.15 Draws conclusions and makes recommendations	1.05	215
3.4 Identifies the interests of all stakeholders	1.00	212
4.6 Reports on progress and results	0.98	214
2.4 Determines program evaluability	0.94	215
4.3 Identifies required resources (human, financial and physical)	0.92	213
2.2 Specifies program theory	0.86	211
2.10 Collects data	0.85	216
4.1 Defines work parameters, plans and agreements	0.83	211
2.3 Determines the purpose for the evaluation	0.82	213
4.7 Identifies and mitigates problems / issues	0.79	210
1.7 Pursues professional networks and self development to enhance evaluation practice	0.75	217

3.5 Serves the information needs of intended users	0.75	214
2.8 Identifies data sources	0.71	215
5.3 Uses listening skills	0.71	216
5.9 Attends to issues of diversity and culture	0.64	215
5.7 Uses interpersonal skills (individual and teams)	0.61	213
4.4 Monitors resources (human, financial and physical)	0.59	212
3.1 Respects the uniqueness of the site	0.58	210
3.3 Identifies impacted stakeholders	0.55	214
5.6 Uses facilitation skills (group work)	0.51	212
5.2 Uses verbal communication skills	0.51	216
1.6 Aware of self as an evaluator (knowledge, skills, dispositions) and reflects on personal evaluation practice (competencies and areas for growth)	0.50	216
5.1 Uses written communication skills and technologies	0.47	215
4.5 Coordinates and supervises others	0.46	211
5.10 Demonstrates professional credibility	0.45	214
5.8 Uses collaboration / partnering skills	0.45	214
1.4 Considers human rights and the public welfare in evaluation practice	0.30	215
1.3 Respects all stakeholders	0.14	219
1.2 Acts ethically and strives for integrity and honesty	0.02	219