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EXAMINING VERMONT AGRICULTURAL PRODUCERS' WILLINGNESS TO
PAY FOR EXTENSION ONE-ON-ONE BUSINESS PLANNING SERVICES AND
FUTURE PROGRAMMING CONSIDERATIONS

A Thesis Presented

by

Anthony Kitsos

to

The Faculty of the Graduate College

of

The University of Vermont

In Partial Fulfillment of the Requirements
for the Degree of Master of Science
Specializing in Community Development and Applied Economics

January, 2020

Defense Date: November 4, 2019
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ABSTRACT

Extension agricultural business programs have provided enhanced individualized services to Vermont's agricultural producers by using a variety of external funding sources combined with base departmental funds. These farm business programs are uniquely positioned to deliver one-on-one outreach education and information that not only has a direct benefit to private farm business owners but indirectly serves the public good by enhancing farm business viability. Meanwhile, there is an ongoing cultural shift among Extension professionals and farm owners who acknowledge that Extension programs cannot be sustained at low or no cost to participants. Funding for Extension programming has been declining for several years. Traditional funding sources, such as university base funding and state legislature appropriations, have been significantly reduced, and as a result, faculty positions in Extension nationwide have been reduced or eliminated altogether. New ways to support Extension programming must be developed in order to continue to deliver high quality business outreach education to Vermont agricultural producers. This research addresses this need in the following two ways. First, Farm Viability (now Agricultural Business) program participants were surveyed to gauge their understanding of declining funding from traditional sources to determine whether or not a fee-based structure for future programming is acceptable to them. Next, a reflective essay proposes solutions for supplementing funding for Extension programming with a fee-for-service model for advanced and extended one-on-one programming. Survey results showed that those respondents likely to engage in programming beyond the initial 2-year period were willing to pay for extended services at a rate higher than the original application fee. Of those who were willing to pay for future services, 80% of respondents said that they would use a plan that included 1-3 visits at a cost of \$250 - \$499. The reflective essay defines program areas in need of funding enhancement, such as using facilitated management teams, succession planning and grant application assistance. The essay discusses programming opportunities that exist to serve at least some past program participants with additional one-on-one services, thereby sharing the increasing financial burden experienced by Extension educators in the presence of shrinking internal capacity to fund this type of outreach education. This research also raises awareness in areas of program costs, dwindling funding sources, and how participants can help share the financial burden. Important points for farmers weighing the merits of paying for program participation and future programming opportunities are discussed. These results can guide the efforts of program administrators seeking to improve the cost-effectiveness of Extension outreach education in Vermont agriculture.

ACKNOWLEDGEMENTS

Thank you to Dr. David Conner for your willingness to step into the lead advisor role at such a late stage of my research, and committing to bringing this thesis to life, and to Dr. Qingbin Wang and Dr. Cheryl Morse for your guidance on applying an additional layer of rigor to the findings and my research overall.

Thank you to Dr. Bob Parsons, former UVM Extension Associate Dean Richard Levitre, and to Michael Dolce and Mark Cannella, UVM Agricultural Business Program Director, for the many hours of in-depth thought and conversation on how to best serve our participants.

Thank you to the Vermont agricultural producers who participated in the survey, and to all who helped collect and understand the data.

And a special thanks to my family: Sam and Tom, Gretchen and Gia, and to Edith Taylor. Where there is a great and shared sacrifice, there is a sense of shared and great accomplishment.

TABLE OF CONTENTS

ACKNOWLEDGEMENTS	ii
LIST OF FIGURES.....	vi
CHAPTER 1: INTRODUCTION	1
1.1. Background	1
1.2. Article 1 Research Questions.....	4
1.3. Article 2 Research Reflections	5
CHAPTER 2: LITERATURE REVIEW.....	6
2.1 A Brief History of Extension Funding Sources	6
2.2 Methods of Outreach Education Delivered By Extension	8
2.2.1 Traditional Forms.....	8
2.2.2 New Directions in Extension Programming and Funding	11
2.2.3 Alternative Funding Methods	12
2.2.4 Dairy Management Teams as a Fee Based Program.....	13
2.2.5 Fee Based programming and Willingness to Pay.....	14
2.3 Summary and Research Needs.....	16
CHAPTER 3: ARTICLE 1	19
3.1 Introduction	19

3.2 Literature Review	19
3.3 Methods	22
3.3.1 Data Collection.....	22
3.4 Statistics Used in Analysis of Data.....	24
3.4.1 Demographic Information.....	24
3.5 Results.....	25
3.5.1 Descriptive Analysis	25
3.5.2 Chi Square Test for Independence.....	30
3.5.3 Regression Analysis	32
3.6 Discussion.....	33
3.6.1 The Survey and Data Collection Process	33
3.6.2 Statistical Analysis Options	34
3.6.3 Relative Importance of Attributes.....	35
3.7 Conclusion	35
 CHAPTER 4: ARTICLE 2	 37
4.1 Introduction	37
4.1.1 Focus of the Reflection	37
4.1.2 Background.....	37
4.2 Literature Review	40
4.2.1 Current Best Practices and Suggested Models for sharing Information With, and Providing Assistance to Farmers	40

4.2.2	Act 64 and Vermont’s Required Agricultural Practices Rule.....	43
4.2.3	Extension’s Role in Education Around Change	44
4.2.4	Funding the Programs	44
4.3	The Current UVM Farm Viability (Agricultural Business) Program Mode	46
4.3.1	Introduction	46
4.3.2	The Initial Contact.....	47
4.3.3	The Process of Providing Business Coaching	47
4.3.4	The need for a New Program	50
4.4	A Case Study in Management Teams and the Willingness To Pay	51
4.4.1	Discussion.....	54
4.4.2	New Program Applications and Next Steps	56
4.4.3	Not for Everybody	57
4.4.4	An Interview with UVM Extension Director Charles Ross	58
4.4.5	Conclusion	59
	REFERENCES CITED	61

LIST OF FIGURES

Figure 1: Responses to the Survey Question "Where Is Your Business Today as a Result of Working with the Program?"	26
Figure 2: Responses to the Survey Question "Would You Benefit from Participating in the Program Again?"	27
Figure 3: Responses to the Survey Item "Select the Future Program Option and Fee That Best Fits Your Needs"	28

CHAPTER 1: INTRODUCTION

1.1 Background

As the total number of dairy farms in the U.S. continues to decline, those remaining are making changes in how their farms are managed. The total number of operating dairy farms in the US has decreased by 74.1% over the past 25 years, dropping from 155,339 in 1992 to just 40,219 in 2017. The trend for Vermont dairies has generally followed national trends, showing a 67.1% decline in farm numbers, dropping from 2,370 in 1990 to 780 in 2017 (National Agricultural Statistics Service, 2017). It has been our observation that an increasing amount of farm business education is being supported through granting organizations and private funders while base-funded Extension programs continue to decline.

University of Vermont Extension's Farm Viability/Agricultural Business program serves farms of all types and sizes. Currently, program offerings are primarily grant-funded, and staff, although classified as "University employees, are considered as "soft funded", meaning that their positions are dependent on securing sufficient grant funds to support 85% - 100% of employee costs (C. Ross, personal communication, October 15, 2019). Given the climate of declining base funds, increasing emphasis is placed on the need to keep a steady flow of state, federal and private grant and donor funds coming in to pay staff (Hughes and Ledbetter, 2009). Simply put, as base funds decline, and grants become more competitive, new methods of funding high value programming serviced by Extension Staff must be created to keep these high value programs functioning.

This thesis examines the willingness to pay for Extension agricultural business programming by program participants who seek additional services outside the guidelines of existing programs, how much they would be willing to pay, and what kind of model program would suit both parties. The thesis has two outcomes; a journal article that analyzes the findings of a survey of past University of Vermont Farm Viability participants designed to gauge program satisfaction, future programming needs, and the willingness to pay for those future services; and a reflective essay designed to outline present Farm Viability (now Agricultural Business) program structure and procedure, the value that is added to program participants, and propose a new farm business program designed to address the future needs of past program participants.

University Extension organizations nationwide are experiencing declining base funds and are in need of finding new ways for cost recovery while continuing to add new programming that has relevance to farm business owners' needs and has value to the participant. Past program participants will be surveyed to gauge their level of satisfaction and future programming needs, as well as for how much they would be willing to pay for those services.

Program managers are successfully sourcing external grant funds to maintain one-on-one farm business outreach education programs. External funding has enabled the provision of farm business planning and business analysis support at no cost or through nominal application fees (i.e., \$75 per application) (Cannella, Dolce and Kitsos, 2017). This approach differs from situations in which independent farm

and ranch business education associations operate on a fee-for-service or membership basis. Program leaders are increasingly voicing the challenges of maintaining external grant funding for the same programs year after year. Extension professionals must consider unique ways to sustain or adapt popular programs as the availability and logistics of funding change over time. Articles for Willingness to Pay (WTP) (Odalele, 2008, Weinand and Conlin, 2003, Cannella, Dolce and Kitsos, 2017, Barth, et. al., 1999, Houser, et. al., 2018) focused on clients paying for workshops and programs at a very low rate (<\$100) per workshop or for programming associated with other states, no research was found that addresses willingness to pay for university Extension services in Vermont. Some research showed Vermont farmers recognize that unsubsidized business planning services are unsustainable if they remain dependent on base funds and traditional funding streams through extension (Cannella, Dolce and Kitsos 2017).

Vermont Extension programs are delivered by outreach professionals (OP) and principal investigators (PI), and the old “county agent” structure no longer exists (C. Ross, personal communication, October 15, 2019). Each OP is paid largely by specific grants and very little department base funding. Therefore, Extension outreach education delivery is currently dependent on principal investigators and program directors securing grants to fund programs, pay employees and purchase materials to use in workshops. While there has been some base and outside stakeholder funding in the past to pay for a facilitation program for Vermont dairy farmers wishing to use advisory teams to assist with strategic planning, those sources have been reduced or eliminated.

If these programs have value and are to continue to be offered, new ideas for funding must be developed. Federal and state funding to university extension has declined over the years to extensions nationwide. In order to deliver outreach education, extension must seek and develop new strategies to pay for programming. Extension typically offered outreach education by running workshops, producing fact sheets and establishing field trials, methods that bring groups of farmers together to learn about specific farming topics. Researchers have identified more modern methods of delivering this education by establishing webinars, blogs, web pages and other means of technology. These tools are best suited to deliver more general information to a broader audience. One-on-one business education in Vermont is being delivered via UVM Farm Viability (now Agricultural Business), a one-on-one educational approach that offers individualized business education services to farmers, providing business outreach education specific, targeted and tailored to their farms. Each farm that participates in this type of programming chooses to divulge sensitive information about their farms, both personal and proprietary. Those farms who wish to use management or advisory teams to do strategic planning need independent facilitators that respect confidentiality to help manage their meetings. These types of services are being delivered by trained business and management advisors, which come at a fairly high cost relative to traditional workshop delivery methods offered at very low rates.

1.2 Article 1 Research Questions

1) Is the Vermont farmer willing to pay for one-on-one business planning program services (WTP)?

- 2) How much is a past participant willing to pay for future services?
- 3) What are the relevant factors associated with participant decisions to pay for programming?

1.3 Article 2 Research Reflections

1) How does the knowledge gained from Article 1 research inform outreach educators in implementing a programming model where the participant shares more of the cost for enhanced level of personalized service?

2) What funding model could work to support declining public, base and grant funds in delivering one-on-one outreach education programming?

3) A case study on how this can be implemented

CHAPTER 2: LITERATURE REVIEW

2.1 A Brief History of Extension Funding Sources

As predicted 20 years ago, the parameters of outside funders and the constraints of shrinking internal capacity force ongoing reassessment of a program's mission and its fit within Extension (Barth, Stryker, Arrington & Syed, 1999; Jackson & Johnson, 1999). This has certainly come to pass. Over the past few decades, university Extension funding has relied on local (within-state) sources (Wang, 2014). In Washington State, county extension offices typically rely on funding from county governments for a large portion of their budgets (Lawrence and Mandal, 2016). The recent period of general economic decline has forced local governments to cut expenses and shift revenues to balance budgets (Perlman and Benton, 2012, C. Ross, personal communication, October 15, 2019). Houser (2018) examined how Midwest agricultural producers valued and used information and recommendations presented to them by Extension outreach professionals. Farmers noted the in-state effects of funding decreases as being detrimental to Extension's ability to produce and disseminate relevant, non-biased and cutting edge results. Without adequate funding, Extension's information on nitrogen recommendations was found to be inferior to that of the private sector. Houser concluded that Extension services can play a powerful role in improving science literacy among farmers, giving them better awareness of the factors involved in N cycling and the rigorous scientific process university scientists adhere to in determining best practices.

An outcome of many of the shortcomings of public extension systems is persistent funding difficulties (Anderson and Feder, 2004). The public goods nature of many extension services makes cost recovery at the individual beneficiary level difficult, whereas the dependence on public funding is problematic because of weak political commitment. Scaling down field operations reduces not only the quantity of extension inputs but also their quality, as feedback from farmers is reduced and with it timely follow-up on farmers' issues (Houser, et. al., 2018).

In Vermont, this situation has led to cuts in Extension faculty, and has put more emphasis on outside grants to meet program costs. Vermont's 2018 budget consisted of approximately 22 million dollars, with only 4.4 million coming from state and federal funding and the remainder coming from outside grants (C. Ross, personal communication, October 15, 2019). Meanwhile, there is a growing culture of Extension professionals who accept the inevitability that farm managers will need to pay program fees more closely aligned to the value of the benefits they receive (Stup, 2003). Researchers have documented the transition and challenges of pursuing user fees for cost recovery within public Extension programs (Bloome, 1993; Lyons, O'Neill, Polanin, Mickel, & Hlubik, 2008; Murray, 1999; Serenari, Peterson, Bardon, & Brown, 2013). Rural farmers, while accessing information in a variety of ways, still place a high value on one-on-one contact that promotes dialogue and contextual problem solving for a particular situation (Millburn, Mulley, & Kline, 2010). Educators recognize that high-impact farm business analysis and education occurs in this individualized format. Program leaders need to understand how one-on-one programs

formerly supported by base funds and grant funds can be maintained in new ways. Farm business education programs are uniquely positioned at the intersection of public and private good. The Extension mission is based on providing meaningful education and facilitating the adoption of practices that benefit the public good. The presence of a robust agricultural economy is considered a public good that lends benefits through rural employment, economic development, food supply, and working land stewardship. The increase in farm performance and profitability, however, is a benefit that accrues privately to the farm owners served. Successful farm business programs demonstrate outcomes that include increased manager quality of life, improved decision making, improved profitability, and improved access to financing. These outcomes serve as reasonable justification that farm owners should pay an increasing portion of the costs for programs that provide an enhanced level of personal service (Miller, 2004).

2.2 Methods of Outreach Education Delivered by Extension

2.2.1 Traditional Forms

Extension programming takes on a variety of forms. Over the years, Extension has adjusted its delivery of services to accommodate changing conditions in society and new trends in education and technology (Chase, Ely and Hutjens, 2006, Barth, Stryker, Arrington and Syed, 1999, Hutjens, 2004, Lyons, O'Neill, Polanin, Mickel and Hlubik, 2008). In this section I outline some of the major changes to Extension programming in recent decades. One reason for this has been the increased availability of technologies for use in developing programming efforts. A second reason has been the shift toward more specific or targeted activities to meet the needs of specific clientele. Hutjens and

Baltz (2000) summarized survey results of shifts in extension program delivery methods. Key points included that there is a decrease in individual county meetings, an increase in use of multicounty meetings, and more use of agribusiness personnel in delivering programs. Raison (2014) outlined the major contrasts in Extension's traditional operations approach to corresponding new methods into 3 broad programming categories: rural vs. urban delivery, in-person vs electronic delivery and educator vs. facilitator/capacity builder role. In his analysis of the in-person vs. electronic delivery of information, he states that people questioned whether farmers would embrace the use of technology in their fields. Today's farmer/participant uses social media and the digital world to a much greater extent than in the past (Risdon, 1994, Stonerock, 2004, Varner and Cady, 1993). Ward, Woods and Wysocki, 2007). Technology is now the new and accepted method of delivering Extension education and outreach, and will be in the foreseeable future (Barth, Stryker, Arrington and Syed, 1999).

Enthusiasm and credibility of a presenter can also make a difference in how well an activity is received and how valuable it will be for learning (Francis and Carter, 2001). To reach a diverse audience, extension professionals may need to use specific strategies to target specific demographics. The example of millennials (people born between 1982 and 2000) can be used to demonstrate the concept of using research and data to create a strategy for engaging a distinct audience. Millennials as a group are under served by many cultural institutions and programs would like to reach this population (Dilenschneider, 2016). Although the average age of a farmer in Vermont is

58 years, there are many new young farmers entering into agricultural production, all seeking to communicate with methods most familiar to them.

The advent of the Internet and the use of CD_ROMs has become a useful tool to deliver dairy Extension programming, reaching clientele in non-traditional ways. Televideoconferencing also came on the scene as an outreach education tool in the early 1990's (Cady, et.al. 1992). Even though these approaches provided excellent information, many of these were not very successful. One problem was that the originators of the material were generally not available to the participants to respond to specific questions. The Extension learners' use of smartphones and apps are commonplace (Hutjens and Baltz, 2000, Chase, Ely and Hutjens, 2006, Guenther and Swan, 2011). The availability of Internet based resources also increased dramatically in recent years. Because of these factors, the production and use of videotapes as a program delivery method has decreased significantly. Online learning was seen as the coming wave of new outreach education approaches using the Internet (Hutjens, 2007, Risdon, 1994, Barton, et.al. 2017). Participants in The Illinois Dairy Certificate Program participated in five online classes and a laboratory section. Upon successful completion of the modules, participants received a Dairy certificate from the University of Illinois. Program materials included CD-ROMs, weekly assignments, and take home final exams. The program successfully trained approximately 350 students worldwide, and provided dairy education on an "as needed" basis. These forms of outreach are most applicable to general education dissemination, whereas specific recommendations regarding a farm's business and financial information is best done in a one-on-one

format (R. Levitre, personal communication, December 12, 2010). The need to deliver this sensitive and confidential information is not best delivered in a group format. Consequently, workshop attendance is low where the topics discussed are related to a farm's specific financial analysis.

Email is a format that most businesses and educators have access to, and participating on an email list serve can be an effective means to get connected to other producers who are having the same questions. Dairy-L (Varner and Cady, 1993) is a listserv-based system to which users must subscribe. It provides a method to facilitate communication among individuals interested in dairy cattle management. An individual sends a message to the listserv that then sends the message to all subscribers. Moderators monitor the system but do not alter the original messages sent by subscribers. At times, the moderators may limit additional discussion on a topic after a large number of responses to a specific question have been posted. Extension educators must continually look for the new and accepted ways of communicating and delivering outreach education that new clientele will engage in.

2.2.2 New Directions in Extension Programming and Funding

Agribusiness Extension programs at Land Grant Universities have built on a strong tradition and history of agricultural economics, and have grown successfully over the last 20 years, even in the in the face of budget cuts. There are still many challenges and opportunities that agribusiness extension programs face in the future. Programs need to build on their success of providing needed answers to a changing clientele to take them into a strong future (Ward, Woods and Wysocki, 2011). The

success of these programs is found in their ability to build upon what was done in the past, but reach out to new clientele with new programs, and will need to continue to evolve so that they continue to add value to their clientele. As the small and mid-size farm based businesses grow, so will the programs will need to grow along with them.

Needs assessments can inform Extension program leaders about, topics of most importance, target audience, and methods of delivery of information. Martins, Karle and Heguy (2019), in a needs assessment survey of California Grade A dairy producers found that the most preferable information delivery methods were newsletter or magazine articles (81%), half-day/short meetings (47%), and on-farm training/meetings (39%). Webinars and 2- or 3-d destination meetings were the least preferable methods (27 and 9%, respectively).

2.2.3 Alternative Funding Methods

Alternative funding sources break from the traditional reliance on state and federal funds to finance Extension programming and activities. Crowdfunding, the practice of funding a project or activity by raising small amounts of money from a large number of people who share similar interests, typically via the Internet, has roots as a means for funding individual projects primarily in the arts. It has now evolved into a powerful fund-raising tool (Agrawal, Catalini, & Goldfarb, 2013). In recent years, worldwide crowdfunding has seen rapid growth in use, with total moneys raised annually expected to be in the tens of billions (Hobey, 2015). Extension education programs have also benefitted from crowdsourcing funds for 4-H activities (Hill, Swadley and Esplin, 2017). Crowdfunding can provide benefits to Extension. It can

increase community involvement, alleviate some of the pressures of asking while still creating awareness of a need within Extension, and gauge the relevancy of certain projects based on an audience's actions and level of donation.

2.2.4 Dairy Management Teams As a Fee Based Program

As milk prices have fallen and become more volatile, profit margins have tightened, causing some farmers to leave the business due to low profitability. Furthermore, lower milk prices and rising costs are curbing capital investment abilities for producers. Profit margins are low and there is no room for mismanagement. When a manager operates on a day-to-day basis, strategic planning often gives way to operational planning and long term planning often takes a back seat. Holding regularly scheduled, facilitated management team meetings with trusted advisors can facilitate more strategic goal setting and achievement, improving overall business health (Heald, Holden and Hutchinson, 2001).

Vermont's Dairy Management Team program works with farmers to develop a team of specialist advisors who help them evaluate opportunities on the farm. Farmers are paired with a facilitator, and together they hold a pre-meeting to identify team members, topics to explore and gain an understanding of the farm's financial situation. Together they form a unique team based on the needs of the operation. Team members can include, but are not limited to bankers, agronomists, nutritionists, veterinarians, and other consultants. With the team in place, the program facilitator will schedule a series of meetings where the farmer and team members meet to identify issues and opportunities, develop strategies, and provide input for decision-making and long-term

strategic planning (Holden, 2019). The team examines topics concerning new and appropriate technology implementation, farm growth, financial success, long-term sustainability and other production enhancing measures. This is truly the producer's tool and they make the final decisions based on the team's recommendations (R. Levitre, personal communication, December 12, 2010).

In some of the larger dairy states, dairy management teams – also called dairy profit teams or dairy advisory teams - are used by progressive producers to increase their profitability (Weinand and Conlin, 2003). In 2018, Pennsylvania's Center for Dairy Excellence began funding their state's dairy producers for costs associated with advisory teams. Producers paid a one-time application fee of \$100 and, upon acceptance into the program, became eligible for up to \$3,000 reimbursement of funds used to pay facilitators and team advisors (Holden 2019). Minnesota dairy producers can access funds for their dairy profit advisory teams through the Dairy Development and Profitability Enhancement Program. In a 2016 report to the Minnesota state legislature, Weinand (2016) reported that there is an initial application fee of \$200 paid to the program by the farmer. The program then makes available up to \$600 to the team to pay for services associated with team goals. After an initial three year period of enrollment, producers are then invited to re-apply, with a projected cost of \$2,000 - \$2,500 per farm for facilitation services.

2.2.5 Fee Based Programming and the Willingness to Pay

Many Extension educators recognize that fee-based programming may be necessary to recoup at least some program costs, increase program capacity and create

program sustainability. It is important to understand that people will pay for programs that add value to participants' bottom lines, and that they should be prepared to pay for them (C. Ross, personal communication, October 15, 2019). If fees are to be charged, it is important to know who currently uses the programming, what the fees for similar services are, and what the relative financial health of the target community is, who would be most interested in the program, and are they likely to attend (Pellein, 2016). Also of high importance is the maintenance of an external funding strategy (Hughes and Ledbetter, 2009). A coordinated plan of asking relevant questions and speaking funders' language can increase chances of securing external funding critical for programmatic success. Having a fee-based program can give added flexibility to the overall financial picture of Extension's total pool of funds. A study of Turkish agricultural producers (Budak, Budak and Kacira, 2010) found that 52.5% of respondents were willing to pay for Extension services, and there was a positive relationship with herd size. And a survey of Vermont Farm Viability participants found that 435 of respondents who had previously participated in Extension agricultural business programming were willing to pay for some level of additional one-on-one services in the future. In attempting to compare the analysis of the dependent variable "willingness to pay" with the specific set of independent variables studied here was not found in the literature. Most research found focuses on purely descriptive demographic analysis, or does not deal with the specific question of how much is a participant willing to pay for Extension programming. Oladele (2008) examined what factors determined Nigerian farmers' willingness to pay. The study concluded that the willingness was very low and dependent on income. Lawrence and Mandal (2016)

examined the willingness to pay of Washington state Extension workshop users up to the \$60 level, but did not examine the question of one-on-one farm business management education. And Houser, et.al. (2018), in examining Extension's role as a valid information resource, did not examine how much farmers would be willing to pay for high value information.

2.3 Summary and Research Needs

Fee based programming in university Extension outreach education has largely been limited to lesser amounts with little or no meaningful reduction on the reliance of other, more traditional, funding sources. The typical fees that are charged are not tied to the value that can be added by these programs. Farm business analysis and farm strategic planning efforts require significant amounts of staff time and expertise devoted to farms on a one-on-one outreach education basis. This type of programming is much different than the "workshop" approach, where the class sizes are large, information is of a more general nature, and the fees charged are minimal. If Extension is to meet the evolving needs of a farm community that prefers one-on-one programming designed to address specific farm challenges, a fee-based model is needed to help replace declining funding. The model is relevant to Extension professionals who need to adapt the design and cost recovery strategies of their programs to serve repeat participants who would like to continue working with Extension.

Farmers, in order to remain competitive and profitable, continually need up-to-date research that can be implemented on their farms. Farm business analysis programs help individual farm business owners to analyze the financial impacts of

those strategies, helping them decide on which ones should be implemented. Advice in this arena must be timely, relevant and targeted to the specific problem faced by each individual farm. Research has shown that farmers recognize farm business education is being supported through granting organizations and private funders in a climate of declining public funds. Additional funding sources are needed from program participants to support the continuance of such programs. This research is intended to fill the research gaps in the following two ways.

The first article examines the willingness to pay for future services by past Farm Viability program participants. This project investigates demand and program pricing options for individualized farm business programs. The goal of this research is to determine what factors significantly influence a past participant's willingness to pay for future services. A survey instrument designed to collect range of information about the future needs of past participants is used, assessing their willingness to pay for such programming, how much they would be willing to pay, and the level of service for which they would be looking. Variables are analyzed for their individual and collective impacts on the central question of a willingness to pay for future programming. The findings are relevant to Extension professionals who need to adapt the design and cost recovery strategies of their programs to serve repeat participants who would like to continue working with Extension. The results offer insight into whether or not past program participants are willing to pay for future services, how much they would pay if willing, and how extensive a program would be needed to serve that participant population.

The second article is a reflective essay on proposed program designs that can have a high impact on farm success. The goal of this article is to outline what a high quality, unique and highly relevant farm business program looks like, how it adds the value for which participants are willing to pay, and how Extension programs can implement a fee-based structure that can supplement base, grant and public funds. The article offers insight in how Extension program managers can structure future services programming for past program participants, opening the door to a new population previously underserved.

CHAPTER 3: ARTICLE 1

Willingness to Pay for One-on-One Farm Business Programs

3.1. Introduction

3.1.1 Background

Extension farm business programs have maintained enhanced individualized services by using a variety of external funding strategies. These farm business programs are uniquely positioned at the intersection of public good and private benefit to the farms served. Meanwhile, there is an ongoing cultural shift among Extension professionals and farm owners who acknowledge that Extension programs cannot be sustained at low or no cost to participants. In this article, I draw on research involving a statewide survey and focus group interviews to address farm owner willingness to pay for business programs. Findings indicate an opportunity for new programs that match participant registration fees with external grant funds.

3.2 Literature Review

It is important to understand that people will pay for programs that add value to participants' bottom lines, and that they should be prepared to pay for them in the future (C. Ross, personal communication, October 15, 2019). It is also important to know who currently uses the programming, what the fees for similar services are, and what the relative financial health of the target community is, who would be most interested in the program, and are they likely to attend (Pellein, 2016). In this context, it follows that a sound fee-based format that supplements other funding sources can be a valuable

addition to a comprehensive and sustainable strategy for university Extension programming. Fee-based programming may be a useful tool to recoup at least some of the program costs, increase program capacity and augment program funding and sustainability. A coordinated plan of asking relevant questions and speaking funders' language can increase chances of securing external funding critical for programmatic success. Having a fee-based program can give added flexibility to the overall financial picture of Extension's total pool of funds. A study of Turkish agricultural producers (Budak, Budak and Kacira, 2010) found that 52.5% of respondents were willing to pay for Extension services, and there was a positive relationship with herd size. And a survey of Vermont Farm Viability participants found that 435 of respondents who had previously participated in Extension agricultural business programming were willing to pay for some level of additional one-on-one services in the future.

Also of high importance is the maintenance of an external funding strategy that supports the programs with the most positive impacts in the community (Hughes and Ledbetter, 2009). Historically, university Extension funding has relied on local (within-state) sources (Wang, 2014). The recent period of general economic decline has forced local governments to cut expenses and shift revenues to balance budgets (Perlman and Benton, 2012, C. Ross, personal communication, October 15, 2019). In Washington State, county extension offices typically rely on funding from county governments for a large portion of their budgets (Lawrence and Mandal, 2016). Farmers noted the in-state effects of funding decreases as being detrimental to Extension's ability to produce and disseminate relevant, non-biased and cutting edge information. And Houser, et. al.

(2018) examined how Midwest agricultural producers valued and used information and recommendations presented to them by Extension outreach professionals.

There is a growing culture of Extension professionals who accept the inevitability that farm managers will need to pay program fees more closely aligned to the value of the benefits they receive (Stup, 2003). Researchers have documented the transition and challenges of pursuing user fees for cost recovery within public Extension programs (Bloome, 1993; Lyons, O'Neill, Polanin, Mickel, & Hlubik, 2008; Murray, 1999; Serenari, Peterson, Bardon, & Brown, 2013). Rural farmers, while accessing information in a variety of ways, still place a high value on one-on-one contact that promotes dialogue and contextual problem solving for a particular situation (Millburn, Mulley, & Kline, 2010). Program leaders need to understand how one-on-one programs formerly supported by base funds and grant funds can be maintained in new ways.

Dairy management teams – also called dairy profit teams or dairy advisory teams - are used by progressive producers to increase their profitability (Weinand and Conlin, 2003). In 2018, Pennsylvania's Center for Dairy Excellence began funding their state's dairy producers for costs associated with advisory teams, with producers paying a one-time application fee of \$100. Upon acceptance into the program, participants became eligible for up to \$3,000 reimbursement of funds used to pay facilitators and team advisors (Holden 2019). Minnesota dairy producers can access funds for their dairy profit advisory teams through the Dairy Development and Profitability Enhancement Program. In a 2016 report to the Minnesota state legislature, Weinand

(2016) reported that there is an initial application fee of \$200 paid to the program by the farmer. The program then makes available up to \$600 to the team to pay for services associated with team goals. After an initial three year period of enrollment, producers are then invited to re-apply, with a projected cost of \$2,000 - \$2,500 per farm for facilitation services.

3.3 Methods

3.3.1 Data Collection

From 2012 to 2014, we researched the feasibility of transitioning low/no-cost business programs provided through the University of Vermont Extension Farm Viability Program to a pricing model in which a participant's payment would be closely aligned to the value he or she received. The research was completed in two phases. First, a survey instrument was sent to previous Agricultural Business participants. The survey was designed to collect demographic information as well as information about participants' preferences for future services requested from the Agricultural Business Program. Next, a focus group of willing survey respondents was assembled to provide exploratory rather than conclusive research data to understand not only what respondents think, but also how and why they think the way they did. The project did not meet the criteria to require full institutional review board oversight. A draft of the survey instrument was reviewed by four previous program participants, and then revised to obtain a final version.

In spring 2013, the survey was sent to 300 previous participants through both postal mailings and emails containing a link to the survey online. Follow-up contacts

were made in an attempt to increase the response rate. All surveys were collected using Survey Monkey. A total of 113 completed surveys were returned, producing a response rate of 38%. Of the returned surveys, four were not usable, bringing the number of usable surveys to 109 and the response rate to 36%. Recipients were farm owners who had completed a business planning or financial analysis project or had maintained a dairy management team from 2006 to 2012. The survey was targeted to participants of programs featuring over 6 hrs. of individualized contact in 1 year.

The survey included questions about the participant's business situation, educational outcomes from the program, and business changes influenced by participation in the program. This article closely examines results from a series of questions that explored farm owners' interest in re-enrolling in business programs and willingness to pay registration fees. Proposed registration fee options were informed through interviews with National Farm and Ranch Business Management Education Association members who provide business services to farm owners. Fee options also were informed by an internal analysis of the direct expenses for existing programs. The direct expenses that were analyzed included those for salaries, fringe benefits, travel, and supplies. The survey questions are included in the Appendix.

Phase two of the project included focus group sessions held at five locations throughout the state. Focus group members were selected on the basis of their indication through the initial survey that they were interested in re-enrolling in programs and were willing to contribute more information to the research. Applicable

survey respondents were contacted through their preferred choice (phone or email) and invited to attend a focus group session.

3.4 Statistics Used in Analysis of Data

3.4.1 Demographic Information

Seventy- one percent of the respondents were male, 27% were female, and three farm owners responded as male/female teams. The average age of respondents was 55 years. Less than 15% of the respondents were under 40 years old. Farms of participants represented a wide array of types of farming that included beef, dairy or organic dairy, diversified livestock, maple, and mixed vegetable, with dairy being represented in 85% of survey responses. The average farm size was 298 ac owned plus 175 ac rented. Approximately half of the respondents (55%) earned the majority of their household income from farming.

All data analysis was performed using SPSS and included frequencies, descriptive statistics, Chi² crosstabs, and binary logistic analysis. Dummy variables were created for 7 of the questions, as follows:

- Question 21, “Willingness to Pay” combined “no” and “unsure” responses into “all other responses = 0”, thereby isolating all “yes = 1” responses
- Question 22, “Level 1 User” combined “3-5 visits/\$500-\$1000” and 5+ visits/\$1,000+” responses into “All other responses = 0”, thereby isolating all “1-3 visits/\$250 - \$500 = Level 1 = 1” responses

- Question 2, “County” combined the 4 counties with the highest dairy numbers (Addison, Franklin, Orleans and Rutland = 1) to be tested against “all other counties = 0” to determine if respondents living in dairy counties significantly influenced “willingness to pay”
- Question 19, “Repeat User” combined “no” and “unsure” responses into “all other responses = 0”, thereby isolating all “yes = 1” responses
- Question 9, “Farming Style” was recoded into Conventional = 1 and organic = 2, as these represented mutually exclusive variables. Grass based and Value added choices were not mutually exclusive to other choices.
- Question 14, “What Projects Have You Completed” separated “Transfer Plan” = 1 from “all other responses” = 0
- Question 6, “What Type of Farm Are You” separated “Cow Dairy = 1” from “all other farm types = 0”

3.5 Results

3.5.1 Descriptive Analysis

The survey included a number of questions for measuring the impact of the programming on the respondent's business. Less than half of the respondents (41%) reported that they were more successful as a result of the program (Figure 1). Further investigation revealed that the majority of respondents who indicated that their business

was "the same" were commodity dairy producers (the dairy industry faced a historic cost-price squeeze from rising feed costs during the period of the research).

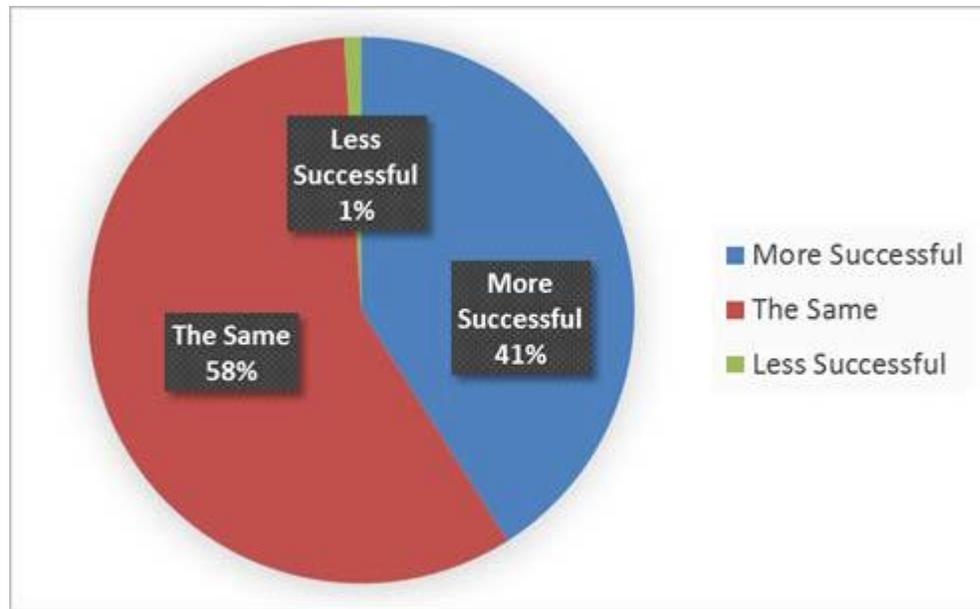


Figure 1.

Responses to the Survey Question "Where Is Your Business Today as a Result of Working with the Program?"

The most frequent positive outcome from working with the program, as reported by 68% of the respondents, was an increased use and understanding of financial records and financial management. Over half of the farm owners reported that they had increased their ability to maintain a cash flow (55%); likewise, over half had increased the ability of the farm to generate profits (54%). Forty-seven percent of respondents were successfully awarded loans and other financial resourcing as a result of the use of program materials and analyses completed through the program. Subsequent program

evaluations revealed that the approved loans averaged approximately \$90,000 for participants who completed loan applications. Program evaluations also demonstrated no less than a 90% loan approval rate each year.

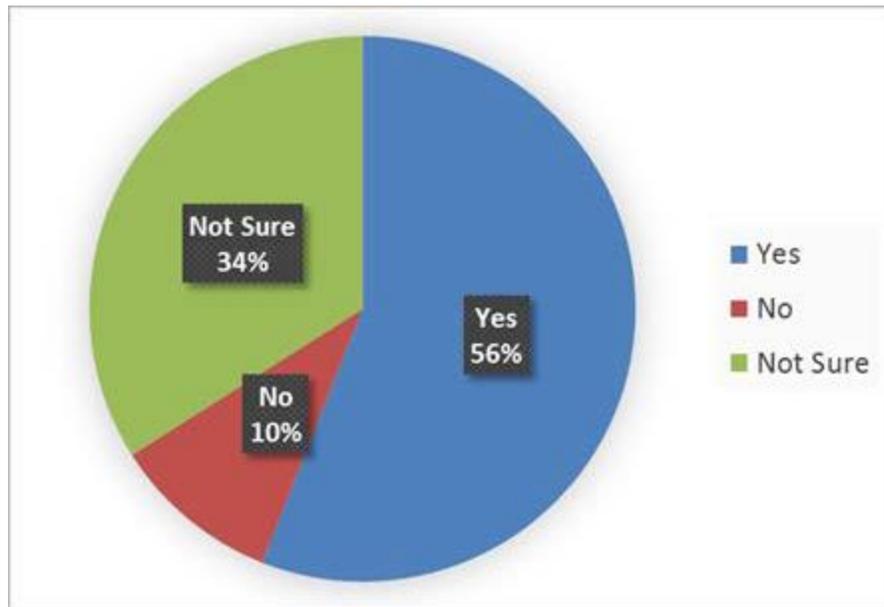


Figure 2.

Responses to the Survey Question "Would You Benefit from Participating in the Program Again?"

The survey included a series of questions for exploring the participants' demand for future educational services from Extension or other providers. Fifty-six percent indicated that they would benefit from participating in the program again (Figure 2).

In addition to indicating whether they would benefit from participating in the program again, respondents selected the types of future one-on-one programs that would serve them best (respondents were able to select more than one choice). About a

quarter to a third of the respondents indicated interest in future one- on-one programs addressing transfer planning (32%), budgeting assistance (32%), business planning (28%), and enterprise analysis (28%).

The survey included a question asking respondents about their willingness to pay more than the standard program application fee for these continued services. Response options were "Yes" (43%), "Not Sure" (38%), and "No" (20%). A follow-up question allowed respondents to indicate a preferred program option. The three options presented were based on the following parameters: at least 6 hr of annual direct contact, estimated salary/fringe of \$50 per hour (including administrative support), and a 75-mi round trip for each on-farm visit. The response options had overlap in the number of meetings because length or frequency of meetings can differ by farm adviser or participant. The majority of respondents selected the lowest cost option, which would provide one to three visits for a cost of \$250 to \$499 (Figure 3).

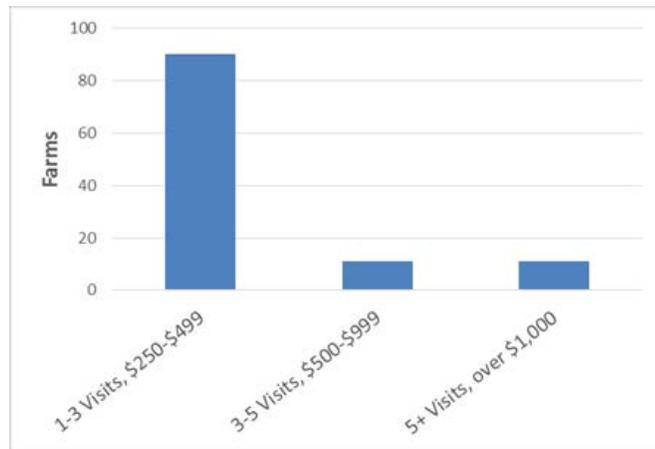


Figure 3.

**Responses to the Survey Item "Select the Future Program Option and Fee That
Best Fits Your Needs"**

Following the survey phase of the research, five regional focus group sessions were organized and were attended by a total of 23 farm owners. This number represents 21% of the survey respondents and 7% of participants who received the initial survey. Focus group participants received an overview of theoretical program options. Participating farm owners identified the specific services they felt were needed and indicated the fees they would pay for such services. The three most popular services were preparation of an annual balance sheet, preparation of an annual cash flow projection, and an annual visit to establish a short- term implementation plan.

Participants indicated that technical financial analysis and generalized business coaching would have positive impacts on their decision making. Focus group participants also stated that they greatly valued having a trusted outside party (not a commercial vendor) with whom they could share ideas, concerns, and possible solutions.

Final analysis of focus group members' responses indicated that most farm owners would pay within the ranges of \$20 to \$34 per hour for hourly services and \$100 to \$150 per management team meeting (a meeting including two or three additional specialists). These findings were compared to program accounting records for invoices paid to external consultants over the preceding 4 years. Consultant billing

ranged from a low of \$45 per hour to a high of \$125 per hour for business planning services. Business planning and analysis consultants were most commonly paid approximately \$70 per hour. Focus group findings were also compared to the internal direct cost estimation of the program that was set at \$50 per hour in 2013.

3.5.2 Chi Square Test of Independence

Many of the survey questions were structured with multiple responses possible by respondents. In order to test the null hypothesis that there is no relationship between willingness to pay and the independent variables defined below, selected survey responses were recoded to provide binary variables for statistical analysis. A chi-square test of independence was performed to the relationship between willingness to pay (no = 0 and yes = 1) whether or not respondents were from a dairy county (all others = 0 and yes = 1), was a repeat program user (all others = 0, and yes = 1), was of a specified farming style (organic = 0 and conventional = 1), had a preferred level of service (all others = 0 and 1-3 visits at \$250 - \$500 = 1), and experienced a specific level of success after working with UVM (less successful = 1, about the same = 2 and more successful = 3), and what percent of their income came from farming (less than 20% = 1, 20% - 50% = 2, 51% - 75% = 3 and 76% - 100% = 4). A p value of .05 was used to determine significance.

The relationship between willingness to pay and preferred level of service was significant, $X^2(1, N = 59) = 4.22, p = .04$, indicating that farms were willing to pay between \$250 and \$500 for 1-3 visits per year for an annual budget review and/or a financial statement update, and the null hypothesis that there is no relationship between

willingness to pay and whether or not a respondent was willing to pay for Level 1 services is rejected.

The relationship between willingness to pay and whether or not a respondent was a repeat user was also significant, $X^2(1, N = 93) = 6.00, p = .01$, indicating that if a farm had used UVM Farm Viability for a business planning service, there was a level of satisfaction high enough to make that respondent a repeat user who would be willing to pay for future services. Therefore the null hypothesis that there is no relationship between willingness to pay and whether or not a respondent was a repeat user is rejected.

There was no significant relationship between willingness to pay and dairy county, $X^2(1, N = 96) = .001, p = .976$, whether or not a business was more successful, $X^2(2, N = 89) = 5.56, p = .06$, percent of income from farming, $X^2(3, N = 91) = 1.45, p = .69$, whether a farm was conventional or organic, $X^2(1, N = 75) = .03, p = .55$. The null hypothesis for these variables, when tested for a relationship with willingness to pay, is retained. These findings suggest that respondents from typical dairy counties were no more likely to be willing to pay for future services than those from any other county in Vermont. Respondents who indicated that they milked cows ($X^2(1, N = 96) = .106, p = .30$) were no more likely to be willing to pay for future services than any other type of farm. This finding suggested that dairy farmers, representing 85% of respondents, were no more likely to be willing to pay for future services than any other type of farmer. Similarly, those respondents that reported completing farm transfer plans in their first experience with farm business planning were no more likely ($X^2(1, N$

= 96) = 1.34, $p = .25$) than those respondents that had not completed transfer plans in their first experience.

3.5.3 Regression Analysis

Regression analysis was used to test the collective significance of the following independent variables: whether or not respondents were from a dairy county (all others = 0 and yes = 1), was a repeat program user (all others = 0, and yes = 1), was of a specified farming style (organic = 0 and conventional = 1), had a preferred level of service (all others = 0 and 1-3 visits at \$250 - \$500 = 1), and experienced a specific level of success after working with UVM (less successful = 1, about the same = 2 and more successful = 3), and what percent of their income came from farming (less than 20% = 1, 20% - 50% = 2, 51% - 75% = 3 and 76% - 100% = 4) on whether or not a past participant was willing to pay (no = 0 and yes = 1) for future Extension programming. A p value of .05 was used to determine significance.

In summary, the results of the multiple linear regression indicated that there was not a collective significant effect between the individual predictors county ($Wald = 1.83$, $df = 7$, $p = .18$), relative age ($Wald = 1.53$, $df = 1$, $p = .22$), repeat user, ($Wald = .04$, $df = 1$, $p = .84$), farming style ($Wald = .05$, $df = 1$, $p = .83$), and degree of service offered ($Wald = 3.15$, $df = 1$, $p = .08$), on a respondent's willingness to pay. The sample size for the collective regression ($N = 46$) was very low, with 67 missing cases, indicating that only 46 of the 113 respondents chose to provide an answer to all of the survey questions (variables) in this analysis. With 5 independent variables tested against the dependent variable, a minimum of 50 responses to all 5 independent

variables was desired for a reliable prediction. Therefore it is difficult to say that, in the aggregate, the independent variables did *or* did not have a significant effect on a respondent's willingness to pay for future services.

3.6. Discussion

3.6.1 The Survey and Data Collection Process

The survey was designed and conducted by staff at the University of Vermont Extension's Farm Viability program on past Farm Viability participants. The research is part of Farm Viability's efforts to enhance program offerings to those participants who have gone through the first two year cycle and have reached the end of the program's commitment under the current funding model. The knowledge gained from responses to future needs and the willingness to pay for future programming will inform program managers in what a sensible fee structure can be that is consistent with participant's expressed needs. Data collection was challenged by the length of time and number of efforts it took to get a reasonable response rate. Farmers are constantly being surveyed by a wide variety of service providers, agencies and vendors, quite possibly creating "survey fatigue", requiring additional effort to reach a 35 – 40% response rate. Additionally, the length and complexity of this survey may have hampered many participants in their efforts at completing the survey more completely, which may have led to a less rigorous statistical analysis. The two-part nature of this survey – one being an assessment of past participant uses and satisfaction the other being an effort to assess future needs and new program directions – was used to collect data to help provide direction on what future services could be offered to past program participants. This

could've been a bit confusing to respondents as to what kinds of information we were actually looking for. A greater effort at receiving more, and more complete, survey responses must be made in order to make more valid and statistically significant conclusions of the information collected.

3.6.2 Statistical Analysis Options

The results of this survey have more power in qualitative descriptive statistics and are best suited to guide extension educators towards creating fee-based programming as a supplement to other funding sources. Logistical regression as a statistical analysis tool could not be used due to the smaller sample size when independent variables were tested in aggregate for their significance on a respondent's willingness to pay for Extension programming, as the number of respondents who took the time to answer the survey completely was low. Crosstabs Chi Square Test for Independence proved more useful as a tool to test each independent variable separately for their significance to the hypothesis that there is no influence of those independent variables, with sample sizes easily exceeding the minimum required to produce reliable results. Program participants live complex lives and operate complex businesses, making it difficult to point to any one factor or tendency as definitely being an "influencer" in making important business and financial decisions. Experienced extension educators must also call upon their own experiential learning to enhance the decision making process.

3.6.3 Relative Importance of Attributes

The survey did show that when looked at independently of all other variables, willingness to pay was influenced by the level of service being offered and the price one would have to pay for acceptance in a new program. This indicated that participants did gain value from enrolling in agricultural business programming, and did see that there could be value in continuing a relationship with Extension. It didn't matter where the participant was from, what type of farm they operated, whether or not they were approaching retirement or how much income came from the operation of their farming business, respondents who had good experiences with the first phase of the program were likely to go on to a next phase as long as the price was right and the time commitment wasn't too great.

3.7 Conclusion

Farm business program participants demonstrated a willingness to pay more for enhanced individual services despite having paid little or no fee for such programs in the past. Farm owners who had previously participated in programs were able to articulate the importance of business planning to the success of their businesses. The acute issue at hand, however, is that the amount participants were willing to pay for hourly service was approximately half of average market rates for farm business coaching and analysis (\$70 per hour). Moreover, the amount participants were willing to pay also was less than the direct operating costs of providing the program (\$50 per hour).

These findings show that it would not be feasible for an Extension business program to be transitioned immediately to a setup reliant exclusively on registration

fees. Rather, combining user fees and grant funds emerges as a reasonable approach. Our findings support a program funding structure that requires increasing participant fees from farmers to bring the overall program revenue closer to a 50/50 balance between payments from farm owner participants and other funding sources. This change could improve the recognition that farm business programs promote both private benefits and public good.

Extension program managers will face challenges to charging increased program fees for enhanced individual programs. One concern is that other nonprofit organizations will offer competing programs at no cost (100% grant funded) while Extension program managers attempt to increase fees. In addition, Extension programs no longer would be accessible to all farmers, resulting in a clear change in the Extension mission. The Extension quandary is further complicated by the knowledge that private consultants and firms already have tapped into a segment within the farmer population and are delivering services to these farm owners at rates of \$80 per hour and higher. This situation creates new questions about Extension program quality, competition with other service providers, and redefining of the target audience.

Despite these practical challenges, Extension program leaders must assess program registration fees before base or external funding dissolves. Advanced planning can facilitate the gradual increase of registration fees over time, the adaptation to program models aligned with participant willingness to pay, and even the graduation of participants to non-Extension programs.

CHAPTER 4: ARTICLE 2

Reflective Essay

*An Argument for Tailored, Team, and Fee-Based Service Provision for the Extension
Service of the Future*

4.1 Introduction

4.1.1 Focus of the Reflection

This reflection focuses on proposing to university Extension agricultural economics and agribusiness programs a model for a fee-based service program to serve repeat participants who would like to continue working with Extension. The findings are relevant to Extension professionals who need to adapt their programs with cost recovery strategies of their programs in mind. Program managers have been successful in sourcing and securing external grant funds to support programming at low or no cost to the participant. As the availability of these funds decline and securing them becomes more competitive, program managers and educators must consider unique ways to adapt the more popular and high value programs to meet these ever-changing times. Program fees must come more into alignment with the services requested and the value received by the participant (Stup, 2003).

4.1.2 Background

Extension programming takes on a wide variety of shapes and forms, all designed to bring the best and most current research to the rural communities of the

states they serve (Anderson, 2004, Ward, Woods and Wysocki, 2011). Specifically, agricultural business extension programs are designed to provide science based education to producers, helping them make better business decisions and become more successful. Chavas' presentation, titled "Outreach in Agricultural Economics: Historical Perspectives" (as cited in Ward, et. al., 2011), asserts that Extension educational programs have changed to better meet the evolving challenges producers face and the delivery methods used. In the early 1900's, extension agricultural economists focused on three areas: management (for both producers and agribusinesses), market analysis and intelligence, and policy analysis (Ward, Woods and Wysocki, 2011). During the period of 1900-1914, farm management issues dealt with globalization and land allocation issues. This gave way to volatile times and an emphasis on protectionism, getting out of the Great Depression, dealing with unstable markets and many policy innovations.

Farmers routinely face changing conditions related to production, regulation, markets, and other economic and environmental forces. In order to understand Extension's methods of delivering outreach education, a brief history of its beginnings is useful. The Smith Lever Act formalized extension in 1914, establishing USDA's partnership with land-grant universities to apply research and provide education in agriculture (Gould, Steele and Woodrum, 2014). Congress created the extension system to address exclusively rural, agricultural issues. Delivering such education at that time was challenging, given that more than half of the U.S. population lived in rural areas, and fully one-third of the workforce was engaged in farming. Extension's engagement

with rural America helped make possible the American agricultural revolution, which dramatically increased farm productivity, allowing fewer farmers to produce more food.

Extension's roots go back to the start of agricultural clubs and societies post-American Revolution. In 1819, an agriculture journal entitled *American Farmer* encouraged farmers to report on their achievements and their methods of solving problems. The Smith Lever Act formalized Extension in 1914, establishing USDA's partnership with land-grant universities to apply research and provide education in agriculture (100 Years of UVM Extension, 2012). Congress created the extension system to address exclusively rural, agricultural issues.

Through the late 1990's in Vermont, each county had 1-2 extension agents responsible for delivering outreach education to its farmers. Agents were educated in most all aspects of agriculture, akin to being the Jack of All Trades for their respective counties. The county agent's best tool for outreach education delivery was the workshop and fact sheet – two techniques that could be mass produced for distribution and delivered to large groups of farmers at one time. Information was of a general nature presented to address farming topics of the day.

Workshops demonstrated the best research of the day as conducted by university researchers. Fact sheets summarized findings and gave examples of how attendees could take that information back to their farms for implementation. There was an assumption that if the farmer wanted to know how to do something, they would attend a workshop or use a fact sheet. There was some one-on-one engagement between agent and farmer, but declining Smith Lever and Hatch grant funding from federal and state

government inhibited county extension offices from providing a full service to its farm clientele. Extension needed to find another way to fund its activities.

Land Grant colleges and Universities placed more emphasis on Extension to seek funding from non-traditional sources. A common thread throughout extension's history is to bring university research to the rural and farming communities. Program evaluations became an important analysis tool to assess whether or not participants gained knowledge after attending and also informed granting institutions on the relevancy and effectiveness of the programs they are being asked to fund.

4.2 Literature Review

4.2.1 Current Best Practices and Suggested Models for Sharing Information With, and Providing Assistance to, Farmers

Ward, Woods and Wysocki (2011) note that in the early 1900's, extension agricultural economists focused on three areas: management, market analysis and intelligence, and policy analysis. At that time, farm management issues dealt with globalization and land allocation issues. Agricultural economics specialists focused on differences in production techniques for commodities, and centered on assisting in the formation and dissemination of agricultural outlook reports for major farm commodities. Extension programming and advice is closely tied to the research and teaching that takes place at the university (Anderson and Feder, 2004), enabling land grant universities to serve diverse clientele bases. And Ritter, et. al. (2015) outlined extensive research by several authors on what it takes for farmers to make management

changes. That research reviewed the literature and found several articles with recommendations to enhance farmers' belief in the effectiveness of proposed strategies. Extension could best serve by promoting solid, evidence-based management recommendations, taking the most current knowledge into account, and provide information about the effectiveness of various strategies, customized for each farm (Brightling, Dyson, Hope and Penry, 2009). If reports are available, inform farmers on the success of implemented management strategies and comparable prevention and control programs (Ritter et al., 2015). Extension should also prepare farmers for the fact that it might take time to observe the positive effects of preventive measures, and set realistic goals for the decrease in disease incidence and prevalence (Lam, et al., 2013) and use demonstration herds or case studies/examples that support the effectiveness of the strategies (Ivemeyer, et al., 2015; Roche et al., 2015). These strategies hold true with any delivery of technical information, from agronomic practices and agricultural business management, to water quality regulation compliance and veterinary medicine recommendations.

Swanson and Rajalahti (2010) identify 4 separate and distinct extension models and approaches to delivering outreach education. These are 1) traditional technology transfer, where educators summarize research and disseminate results for application; 2) participatory approaches, where outreach educators bring together producers in a field or classroom setting and directly engage them in hands on learning, linking research to extension to producer; 3) market oriented approaches, where it is the growing market for high-value products—not research—that controls specific innovations that can be

successfully taken up by different farm households within local communities to improve their farm household income; and 4) non-formal education methods, designed to bring farmers into a field or classroom setting to deliver education. They concluded that extension must function as both a teaching and learning institution. Extension is charged with providing factual and proven information regarding the welfare of its state citizens and plays a more significant role in providing objective information that can be used when public opinions are forming. Extension must provide the forum for biological sciences to include demonstrative sciences in food production, thereby influencing society by exposing those who teach to a part of science that is not often considered (Stonerock, 2004).

In some of the larger dairy states, dairy management teams – also called dairy profit teams or dairy advisory teams - are used by progressive producers to increase their profitability (Weinand and Conlin, 2003). In 2018, Pennsylvania’s Center for Dairy Excellence began funding their state’s dairy producers for costs associated with advisory teams. Producers paid a one-time application fee of \$100 and, upon acceptance into the program, became eligible for up to \$3,000 reimbursement of funds used to pay facilitators and team advisors (Holden, 2019). Minnesota dairy producers can access funds for their dairy profit advisory teams through the Dairy Development and Profitability Enhancement Program. In a 2016 report to the Minnesota state legislature, Weinand reported that there is an initial application fee of \$200 paid to the program by the farmer. The program then makes available up to \$600 to the team to pay for services associated with team goals. After an initial three year period of enrollment,

producers are then invited to re-apply, with a projected cost of \$2,000 - \$2,500 per farm for facilitation services.

4.2.2 Act 64 and Vermont's Required Agricultural Practices Rule

In 2015, the Vermont legislature passed, and the Governor signed, Act 64: An Act Relating to Improving the Quality of State Waters. This act is designed to amend or enact multiple statutes related to water quality in the State. The act also amends several provisions regarding agricultural water quality. This Act gave rise to what is known as The Required Agricultural Practices (RAPs), a revision of The Accepted Agricultural Practices (AAPs) which became effective in 1995 and amended in 2006. They were amended again in 2016 to become the current Required Agricultural Practices (RAPs). The RAPs are practices and management strategies that all types of farms must adhere to in an effort to reduce the impact of agricultural activities on water quality. These standards, intended to improve the quality of Vermont's waters, are designed to aid in the reduction and elimination of cropland erosion, sediment losses, and nutrient losses in a variety of ways; improved farm management techniques, technical and compliance assistance, and where appropriate, enforcement (Vermont Agency of Agriculture, Foods and Markets, online at <https://agriculture.vermont.gov/rap>). In short, the passing of these RAP's means that Vermont farmers have to adapt their past farming practices that once were "accepted" to now being "required". And change can come at significant cost.

4.2.3 Extension's Role in Education Around Change

Can Extension play a significant role in helping farmers make the adjustments necessary for them to continue to be agriculture producers in the future? Rural farmers, while accessing information in a variety of ways, still place a high value on one-on-one contact that promotes dialogue and contextual problem solving for a particular situation (Millburn, Mulley, & Kline, 2010). Educators recognize that high-impact farm business analysis and education occurs in this individualized format. Program leaders need to understand how one-on-one programs formerly supported by base funds and grant funds can be maintained in new ways. Farm business education programs are uniquely positioned at the intersection of public and private good. The Extension mission is based on providing meaningful education and facilitating the adoption of practices that benefit the public good. The presence of a robust agricultural economy is considered a public good that lends benefits through rural employment, economic development, food supply, and working land stewardship.

4.2.4 Funding the Programs

If so, where will the funding come from? At one time, government funded the majority of research, considering it to be “a public good”. But the landscape of funding for university research has changed significantly (Jankhe, 2015). Boston University, for example, has seen its level of funding from sponsored programs (SPA) increase from \$13.5 million in 1971 to \$350 million in 2014. Compare that increase to the decrease in government funded research and development from \$160 billion in 2010 to \$140 billion in 2015 and one can see the need for alternative funding sources if research is to

continue. Alternative funding sources such as crowdfunding, the practice of funding a project or activity by raising small amounts of money from a large number of people who share similar interests, typically via the Internet, has now evolved into a powerful fund-raising tool (Agrawal, Catalini, and Goldfarb, 2013). Private donors (C. Ross, personal communication, October 15, 2019) can also make up for lost federal and state dollars. Donors often want to target their contributions to specific programs they deem important.

And how will we monitor the effectiveness of our programming designed to help educate farmers on the new way of doing things? Extension must include specialists from outside the organization to bring in expert and specific knowledge in the fields of agronomy, business planning, legal implications and grant writing to meet the changing needs of Vermont farmers. Workshops that feature such specialists are expensive, and cost recovery should be part of the conversation. Participants must exhibit a willingness to pay a higher price for this kind of education.

Most familiar to me is the one-on-one service provider model used by UVM Extension Agricultural Business and the Vermont Farm and Forest Viability Program. In this case, the Vermont Housing and Conservation Board (VHCB) is the major stakeholder who provides grant funding to Extension to deliver one-on-one business planning services. There are some workshops offered that present information of a more general nature, but the current model allows for specified training to be done with individual attention being its hallmark. This form of outreach education requires funds to pay high priced specialists for many hours of on-farm time. Cannella, Dolce and

Kitsos (2017), in a survey of past UVM Farm Viability participants, found that 43% of respondents were willing to pay for this kind of future service, and only 20% were not willing to pay. The majority of respondents selected the lowest cost option, which would provide one to three visits for a cost of \$250 to \$499.

4.3 The Current UVM Farm Viability (Agricultural Business) Program Model

4.3.1 Introduction

The UVM Extension Agricultural Business Program's Farm Viability program is designed to assist farms in the development of certain business planning tools designed to bring the farm business forward. The main goal of the program is to deliver outreach education to these farm business owners to make them better able to face the financial and management challenges in front of them. The following is a detailed outline of the current program at University of Vermont Extension. This model serves farm businesses throughout the state of any and all types that meet certain and specific criteria. The main goal of the program is to provide outreach education in farm business planning and management such that, upon completion, the participant completes one of the following deliverables; full business plan, cash flow plan, enterprise analysis, or a farm transfer plan. These deliverables are oriented to the betterment or advancement of the farm business, with varying levels of detail and focus, depending on the goals of the business. The program is entirely volunteer, with each participant clearly stating their reason for wanting to use the program.

4.3.2 The Initial Contact

Prospective applicants learn about the program in a variety of ways. Information can be found on the program's website, by brochures at statewide office locations, or by direct communication with a variety of farm service providers. The information is designed to lead the reader to make an initial contact with one of the program service providers (SP) or the program coordinator (PC). Once an initial conversation takes place, the PC provides an application for the client to fill out and return. Upon return, the PC meets with SP's to discuss the application for appropriateness to the program goals. It is at this juncture that a prospective applicant learns of their acceptance into the program. If it appears that it is not a good fit for their needs. Every effort is made to refer the applicant to a more suitable program for help.

4.3.3 The Process of Providing Business Coaching

Whole farm business coaching and planning is a series of meetings with the client. Upon acceptance to the program, applicants meet with their lead SP to go over the process for planning. Expectations of clients, as well as those of the SP, are discussed, and an initial timeline of work is established. This forms the basis for completing the work in a timely manner – work that is both effective and informative to both the client and the SP. Full financials, an analysis of strengths, weaknesses, opportunities and threats, a set of business goals, a mission statement and a marketing plan is required, along with a complete farm description of production units, buildings and land, personnel and machinery required to operate the business. Once all information is gathered, the owner meets with the SP to discuss the critical issues faced

by the farm, and how the plan intends on addressing those issues. The feasibility of the business, the plan, and any modifications recommended or desired are then assessed and a set of goals are developed. Once finalized, the goals are recorded and a set of action steps are detailed as a “to do” list that acts as a guide for the owner to use to implement the plan, thereby achieving the goals of the plan. The financials are then analyzed to determine if the plan can be financially achieved. What follows is a series of cycles of the above process, constantly critiquing the business, outlining action steps, recording changes proposed and reviewing the financial impacts, until a feasible plan is reached. A typical business plan takes at least 4-6 meetings that run 2 hours in length each, over a span of 9 – 18 months with plenty of behind the scenes work done by both the owner and the SP to ensure that each detail is discussed and addressed.

Cash flow planning is less in depth planning than that of full business planning. This style plan is specific to the current situation the business is in, and what the next year or two will look like given changes to specific income sources or expense categories. Typically no major changes are proposed, and minor business changes can easily be accounted for. The deliverable shows the business owner what the prospects are for the business over the coming year or two, how pay prices will affect business function, how production unit changes affect profitability, and how other similar changes to how money moves around the business will be affected by the coming foreseeable changes. This usually takes 3 – 12 months to fully complete, goal lists are more directly pertaining to the business as it currently exists, and deliverables are centered on financial performance of the business.

Enterprise analysis looks at comparing one specific method, activity or strategy against another to determine which one will produce a desired effect in a more efficient or profitable manner. Similar information as for cash flow analysis is needed, with the addition of an explanation of what is being compared, how the different ideas apply to the problem, how each affect the outcome, and conclude with which one makes the most sense. A good example is comparing how the farm brings new replacement animals into the milking string. One can either raise them in-house (house, feed, pasture, breed them), send them to a custom raiser (they do all the work and return the animal ready to be milked), or purchase replacement as needed on the open market. Each strategy is designed to supply the farm with replacement animals on an “as needed” basis, with varying management strategies and associated costs. The enterprise analysis will compare all three methods and present the owner with information sufficient to make an informed management decision. This usually takes a similar amount of time and effort as for a cash flow plan.

Farm transfer planning is an in-depth look at the current state of the farm business as well as a variety of family factors, in an effort to guide the participant towards transferring the farm business to the next generation or to a different owner. The business is assessed similarly to that in a full business plan, with the addition of an assessment of the family’s personal financial health - savings, retirement, social security, land holdings – to determine what, if anything needs to be done to ensure an adequate retirement. The process takes expertise not only in farm production and financial management, but also on family counseling, retirement knowledge, a basic

understanding of legal and estate planning, and a unique personal compassion that is sympathetic towards a family's desire to leave their children a sound legacy. The process can take anywhere between months and years to develop, and depending on the age and maturity of the business, even longer to implement.

Management team implementation is a tool used by farms to carry out the items set forth in the business' implementation plan, that is developed in a business plan. Farm owners will select a team of their trusted advisors to convene in a series of team meetings where all advisors have an opportunity to together help the farm perform strategic planning designed to bring the farm business forward. Teams meet 4-6 times per year to discuss critical issues facing the farm business, make recommendations to the owner to address those issues, help the owner develop an appropriate monitoring tool to assess the success or failure of a given strategy, and then challenge the business to continually improve management and profitability. The role Extension plays here is one of facilitator to the meeting. The facilitator produces the agenda, runs the meeting, takes minutes, disseminates post-meeting information to all team members, and maintains communications between and within the team members. Some teams will meet quarterly (4 times per year) on an ongoing basis, constantly updating their implementation plans.

4.3.4 The Need For A New Program

Each of the programs outlined here all have a finite length of time that Extension staff can work with any one participant on a one-on-one basis. In most cases, the time frame closes out after 2 years. Program managers and funders felt that the

program engagement, a function of funding, was finite, and that after two years a participant had received enough coaching and education to continue on their own as new needs arose. In a survey of past Farm Viability program participants (Cannella, Dolce and Kitsos, 2017), researchers found that 56% of respondents said that they would benefit from participating in the program another time. And 43% of respondents said that they would be willing to pay more than the standard application fee associated with the first program they engaged in. While there was interest from past participants to engage in future programming, and there was a willingness to pay for that programming, there was no “funded’ program available to them for which to apply. It became evident that program staff who work directly with the participants develop a certain trust – one that maintains high value service and advice, maintains the confidentiality needed to work with owners on such sensitive topics as farm finances and family planning, and that in order to continue to serve the farm business community of the state, a new program should be developed that serves repeat participants who wish to continue working with Extension.

4.4. A Case Study in Management Teams and the Willingness to Pay

Farmer Brown Inc. (FBI), a Certified Small Farm Operation (CSFO) S-corp dairy business, was a past UVM Farm Viability (FV) participant that, with FV’s assistance, developed a 5 year business plan 3 years prior to the passage of Vermont Act 64 (The Clean Water Act of Vermont) in 2015. The completed plan outlined how cash would flow on the farm in the face of an ever changing milk price and how certain management changes would grow milk output per cow. Balance sheet equity trends

were also projected, showing that if all farm payments were able to be made, by the end of the 5 year period the farm would be able to bring in the 3rd generation to the partnership. In the planning process, FBI would be able to work with a service provider in a one-on-one relationship for a period of 2 years to comb over historical production and financial data, work with lenders and farm tax advisors, and with the help of advisors of the business, put together this plan. The cost to FBI was a \$35 application fee.

In 2016, Vermont addressed Act 64 standards with the agricultural community by passing the Required Agricultural Practices (RAP) regulation, which took management practices that were defined as “accepted” and made them “required”. Specific geographical areas of the state were identified by the Department of Environmental Conservation (DEC) as “high priority”, and FBI sat squarely in those crosshairs. UVM, with a grant from National Risk Management Education (NERME) conducted a series of workshops designed to bring to Vermont farmers an understanding of what their legal rights and responsibilities were with respect to Act 64 and the RAP’s, and one of the FBI partners attended. As a result of what was learned at that workshop, Farmer Brown realized that he was operating I a new day and would have to make changes if FBI was to keep going. Again, their main goal of the plan was to make it possible for his son to enter the partnership. FBI was now faced with calling on another set of farm specialists to determine whether or not their operation would comply with the RAP’s “as is”, or would they need to make some immediate changes.

CSFO certification for any farm under 199 cows was dependent upon compliance with the RAP's for farms in that size category. Although federal and state funding was available to make improvements to reach compliance, FBI, like the typical CSFO, had little to no experience navigating the waters of grant application requirements, understanding who the important advisors would be, developing a timetable for the work to ensure compliance in a timely and acceptable manner, and what the final cost to the business would be. So FBI called his Extension business planner and the two of them decided that a barnyard project was most appropriate and would take care of the most important water quality concern. In an effort to get ahead of the curve, FBI decided to visit the local Natural Resource Conservation Service (NRCS) office to get an engineering determination of the project. NRCS said that the farm would have to use a Comprehensive Nutrient Management Plan (CNMP) to address any and all water quality concerns, as identified by an NRCS engineer, all at once. Initially, the simple fix solution to the barnyard was to cost less than \$30,000, with \$7500 being the farmer contribution (25%). As identified in the business plan, there was plenty of room to pay for FBI's end. Once the CNMP results were all in, the project cost had ballooned to over \$800,000. Included in the new plan was a new manure storage facility, and infrastructure to contain runoff from silages, barnyard and the milk house waste. The best grants could cover would leave FBI with a bill for \$150,000. This was not within the capabilities of the cash flow to pay for, and the farm, once optimistic, was now facing closure.

The Extension planner recommended that FBI use an advisory team to hash out the details and seek a more sensible solution to the problem. A series of 7 meetings were held with specialists from NRCS, Vermont Agency of Agriculture, Food and Markets (VAAF), Vermont Association of Conservation Districts (VACD) FBI's lenders, and their extension planner. In the end, the engineering plans were re-worked, the timetable for compliance was extended, additional grant sources were identified, and FBI's contribution was scaled back to a more manageable \$38,000 (from \$150,000). When asked if he would have the willingness to pay upwards of \$400 for continued planning assistance, Farmer brown replied, "Your recommendations just saved me over \$100,000 and probably staved off an auction. We only milk around 100 cows and would never have been able to cover my share of the cost. What do you think?"

4.4.1. Discussion

The take home message here is that extension professionals and service providers must be able to change and adapt education models to serve Vermont's farming community. They must:

- Be skilled at calling in all available resources to assist farmers, no matter what the cost
- have the credibility to be a "trusted advisor" and facilitator able to identify the new set of needs

- not be shy at harvesting both credit for their work and asking participants to pay for that kind of value.
- look beyond the typical program evaluation responses of “did you learn anything” and ask “did our delivery of information provide value to you”
- be willing to use program results so show future needs and therefore programming opportunities.

Stakeholders who fund the current model of extension must also be willing to change. They must:

- Clearly understand the needs of the client base they serve
- Be willing to support extension with the funding necessary to hire, train, and retain the most engaged work force to deliver this new style of outreach education.
- Learn from program evaluations where the new frontiers of outreach education need to go, and support extension’s efforts in getting there.

The case study is a good example of how the intersection of workshops and evaluations of those workshops informed extension service providers to what is important to the clients they serve and in what specific topic areas. It calls upon the traditional workshop approach to delivering information, a survey designed to query past program participants on their willingness to pay for future services beyond initial engagement, the one-on-one planning approach to assist FBI with an initial plan, and a

facilitation by the planner of an advisory team assembled to address compliance with a new set of regulations.

4.4.2 New Program Applications and Next Steps

In thinking of how this model can be applied to other farms, Extension would have to do more to advertise successes in their efforts to the wider farming community. Each year Agricultural Business works with 20-30 farms on some sort of one-on one basis. With 670+/- dairies and over 3000 agricultural businesses statewide, there is no end to how each business gains awareness to what extension is doing. The “business” of information is largely based on trust. It might not be necessary for a farm business to get information from Extension alone. There are different sources for similar programming. For instance, advisory teams are used on other dairies besides those working with Extension. They are facilitated by veterinarians and financial analysts at a cost to the farm. Agronomists working independently or for fertilizer companies have access to and provide farms with new information each year, with costs buried in the products they purchase. And agribusiness has a never ending supply of experts in the field, ready to deliver product information to their customer base.

If Extension is to thrive going forward, it must remain an impartial source of knowledge, not proprietary, and disseminated in a successful educational format. We always have an eye to broader engagement and need to do a better job harvesting this kind of credit.

This example did not, however, show that “willingness to pay” was actually accepted by the participant. Even though Farmer Brown indicated that there was plenty of savings to be found if he had to pay for the service, no fee was actually charged. Its one thing to say “yes, I would pay” and another thing to actually make an active decision to pay once you have to write the check for a service that was once free. The program used by the extension planner to deliver the “water quality advisory team” was funded by VAAFAM and no fees were allowed to be charged. That requirement went down as a missed opportunity.

Another population that should be queried to gauge interest in funding support for future services is the local agricultural business community. Vermont is populated with many national and international companies that sell to and serve farmers in a variety of ways. When milk prices are down and farm budgets are challenged, the farm community tends to seek out Extension farm business planning programs. Survey respondents clearly stated that they received quality business planning advice when working with an Extension business planner, with only 1% responding that their business was not better off after participation (Cannella, Dolce and Kitsos, 2017). An effective fund raising campaign that is targeted to local, farm-based businesses, would be more likely to be supported if their own customers showed some program ownership by paying a more fair share of the program cost.

4.4.3 Not For Everybody

Some farm businesses cannot afford to pay additional fees for services needed to help them get through tough financial times. The WTP model would work best with

farms that are considering continuing on in business or feel that they require ongoing services. The general business consulting community may lack the expertise to advise farm businesses on how to move forward. The effectiveness of new farming methods must be evaluated by experienced advisors, new production practices may need to be evaluated and verified over the long term. Farmers operating on tight margins may not have the financial strength to pay full freight for these kinds of services which can cost upwards of \$500 per month with some private consulting firms. The Future Services Survey (Cannella, Dolce and Kitsos, 2017) revealed that farms who were willing to pay for further engagement in farm business planning found a model where 1-3 visits at \$250 - \$499 per year was preferred. Blending this style of WTP model – when combined with dedicated base funding and supported by grants - can be a useful, accepted and effective method of program development of outreach education going forward.

4.4.4 An Interview With the Director

I interviewed Charles Ross, Director of Extension at the University of Vermont on the topic of funding - past, present and future on October 15, 2019. Traditional funding sources do not capture the real value of what we do. The nature of our funding leans heavily on research grant type funding. UVM Extension is an approximately 22 million dollar per year budget. Roughly 33% of that is funded at the federal and state level, the rest coming from research – type grant funding. Agricultural Business, a program within the Extension umbrella, most of its funds from these grant dollars, and we're designed to provide one-on-one business planning education. There are two main

obstacles in the Extension funding model. Traditionally the way Extension covered budget deficits, faculty who retired or left were not replaced. Savings went to fill gaps in future funding. This left the unit vulnerable to providing diminished services. The public, who use extension, have an expectation that we are there to answer every question they want an answer to. Director Ross feels that we cannot be all things to all people. We, as programming areas within Extension must continually focus on those programs that bring the greatest value to its clientele. He thinks that the WTP model can augment base and grant funding. Our customers will get what they pay for. There is a real question as to whether or not our program participants perceive value if they pay little to nothing for workshops and services. In the Future Services survey we did, (cite), those respondents said that they would be willing to pay up to \$400 per year for selecting from a suite of services provided by Agricultural Business programming. Currently they are only asked to pay \$75 for 2 years of business planning and follow-up. Many of the producers who use that service are asking for ongoing services from staff, with no funding to support that level of activity.

4.4.5 Conclusion

This research demonstrates that there is a need within the Vermont farming community for UVM Extension to provide a program for past farm business program participants who wish to continue on with one-on-one farm business coaching. Although creating space for a new program within an existing base budget that is constantly challenged to remain adequate and efficient, participant willingness to pay for such programming can be an attractive and important attribute that can enhance

external grant funding opportunities. The end result will be a more engaged farm community with Extension farm business programs, and a stronger financial position for both Extension and the farmers they serve.

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