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Resident Perceptions of a Proposed Environmental Education Center and Demonstration Farm

Abstract

To gauge community support for a proposed environmental education center and demonstration farm, we surveyed 514 local residents. Our intent was to assess community members' support for the project and relevant programming interests and to determine the roles that level of community satisfaction, perceived economic impact, and demographics played with regard to project support. We found that most community members supported the development and that levels of community satisfaction, perceptions of economic impact, background, gender, and age were significantly associated with level of support. Our research also revealed that community members were most interested in programs about nature and growing and preserving food and were not interested in technology-based programming.

Keywords: [needs assessment](#), [community survey](#), [urban-rural interface](#), [connection to nature](#), [agricultural literacy](#)

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Introduction

In urban and suburban areas, places to learn about and experience nature and agriculture are often inaccessible (Coyle, 2005; Hudson, 2001). Yet access to such areas positively affects an individual's physical, mental, and spiritual well-being, including aspects such as fitness, health, creativity, and academic success (Allen, Varner, & Sallee, 2011; Doherty, 2005; Williams, 2017). These benefits align with a number of Extension goals, such as improving quality of life through nutrition education, community building, and improvement of agricultural and science literacy.

A 145-ac tract of land on the peri-urban edge of Lincoln, Nebraska, was donated to the University of Nebraska-Lincoln (UNL) Foundation for the purpose of preserving the land through education. The donation has provided UNL Extension with the opportunity to directly address the disconnect across people, agriculture, and nature with local, place-based education. To do this, UNL Extension is collaborating with nonprofit, private, and government organizations and other key stakeholders to develop the property, an effort with which our author team has been involved. This group of collaborators has proposed establishing an environmental education (EE) center and demonstration farm with teaching kitchen on the site. Educational programming at the proposed facilities would

focus on small-scale farming, local foods, nutrition, rural cultural heritage, nature, and sustainability. Also envisioned are agritourism activities, such as a community supported agriculture crop-sharing program and a beginning farmer training program, along with a variety of nutrition, sustainability, art, and cultural initiatives, all of which would model and facilitate entrepreneurship. School field trips to the center are anticipated as well. Moreover, it is expected that such a development would increase local tourism, thereby providing economic benefits and contributing to the preservation of natural and cultural resources (Jurowski, Uysal, & Williams, 1997).

The success of new local recreation, education, and tourism venues depends largely on whether community members support and use the new facilities and programs. Such developments may affect local communities both positively, through more community amenities, and negatively, via increased traffic and higher tax rates (Jurowski et al., 1997). Previous research has suggested that local community members are more likely to support local tourism if they stand to gain economically from the developments and approve of how local resources are used (Barbieri, Sotomayor, & Aguilar, 2017; Jurowski et al., 1997). Similarly, individuals more satisfied with their communities are more likely to participate in neighborhood improvement and community action (Theodori, 2004). Therefore, if community members are satisfied with the new developments and see them as a benefit, they may have a greater desire to participate in associated new programs.

Collaborating early with community members and stakeholders by gathering their opinions and including them in the development process increases participation in, acceptance of, and satisfaction with new endeavors. Collaborating early also is useful for building desirable programs in realms where consensus is lacking initially and for identifying and addressing unmet needs and concerns (Kelsey & Mariger, 2003; Woosnam, Jodice, Von Harten, & Rhodes, 2008; Yang, Fetsch, McBride, & Benavente, 2009). In our case, we were concerned that rural residents may not favor the proposed EE center and farm.

Therefore, the purposes of the work discussed herein were (a) to assess local residents' support for the proposed development; (b) to determine whether existing levels of community satisfaction, perceptions regarding economic benefits of the development, or demographics were predictors of support; and (c) to examine residents' desires for experiences and educational programs that could be provided at the proposed facilities (Frierson, Hood, & Hughes, 2002; Scriven, 1967; Stup, 2003).

Methods

To measure local support for the EE center and farm, we conducted an assessment in the form of a mail survey. The survey instrument contained Likert-type scaled items, for which 1 was the most negative response and 5 was the most positive, and items pertaining to participant demographics. The questionnaire was organized in six sections addressing the following variables:

- interest in types of programs—18 items;
- perceived economic impact of the proposed development—five items (Jurowski et al., 1997), with responses averaged to create the perceived economic impact variable;
- community satisfaction—19 items (Kaplan, 1985; Kearney, 2006; Theodori, 2004) used to create three variables, namely a nature-based amenities variable (an average of responses to six community satisfaction items), a negative social impacts variable (an average of responses to four other community satisfaction

items), and a community satisfaction variable (an average of responses to the remaining nine community satisfaction items);

- support for the EE center and farm (2 items); and
- demographics (5 items).

The sample was derived from a mailing list purchased from the county. We decided to survey residents having mailing addresses within a 2-mi radius of the property as these stakeholders would be more likely to care about proposed nearby development and lived in the peri-urban edge of the city; the resulting sample size was 1,815. We used the scheduled mailing protocol recommended by Dillman (Dillman, 2000; Dillman, Smyth, & Christian, 2014). First, we sent all potential participants a letter explaining the study, requesting voluntary participation, and stating the institutional review board approval number. One week later, we sent the questionnaire. Two weeks after sending the initial letter, we sent a reminder postcard to nonrespondents. One week after sending the reminder postcard, we sent a second questionnaire to the remaining nonrespondents ($n = 1,350$). We entered data as questionnaires were returned and analyzed the data using SPSS 22. In all, 465 residents responded to the initial questionnaires, and the reminders resulted in an additional 49 responses.

Results

A total of 514 surveys were returned, for a response rate of 28%. The majority of the participants were Caucasian (97%), with an equal proportion of males (50%) and females (50%). Seven percent had a high school diploma or less, 14% had an associate's or technical degree, 16% had some college, 32% had a bachelor's degree, 7% had some graduate school, and 24% had a graduate or professional degree. Twenty percent reported having an agricultural or farming background, and 31% identified as rural, 36% as suburban, and 13% as urban.

The majority of the respondents supported the establishment of both an EE center and a demonstration farm (65% and 69%, respectively). Only 10% of responding community members were opposed to the EE center, and 8% were opposed to the farm. Figures 1 and 2 provide more details.

Figure 1.

Support for and Opposition of the Establishment of an Environmental Education Center

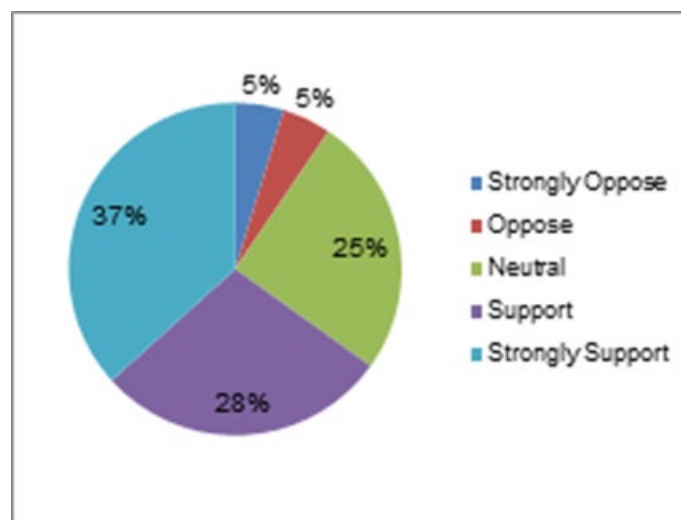
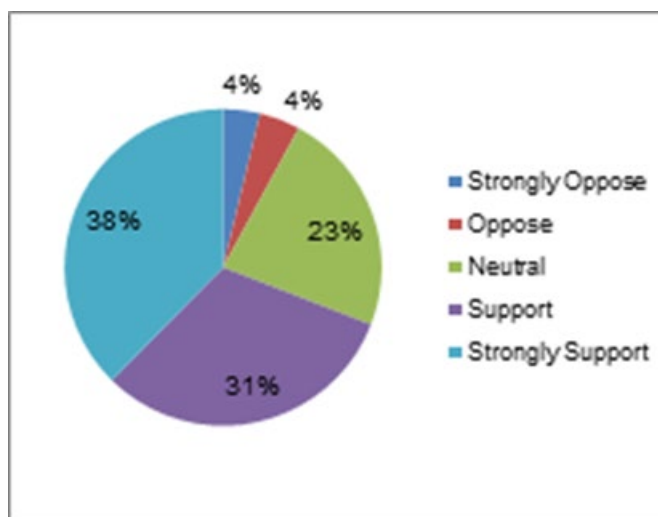


Figure 2.

Support for and Opposition of the Establishment of a Demonstration Farm



We used regression analysis to test whether community satisfaction was a predictor of support for the EE center and farm. The results indicated that existing community satisfaction was a significant predictor of support, explaining 18.4% of the variance, $R^2 = .034$, $F(1, 504) = 17.56$, $p < .001$. More specifically, there was a significant positive relationship between satisfaction with existing nature-based amenities and support for the EE center and farm, $R^2 = .014$, $F(1, 499) = 7.33$, $p = .007$. Additionally, those who were not dissatisfied regarding the existing level of negative social impacts were more likely to support the development than those who were dissatisfied with the existing level of negative social impacts, $R^2 = .013$, $F(1, 499) = 6.67$, $p = .010$.

We also tested whether perception of economic impact was a predictor of support for the development. Those who perceived a negative economic impact from the development, both males and females ($M = 3.21$, $SD = .60$), were significantly less likely to support the EE center and farm, $r(479) = .55$, $p < .001$.

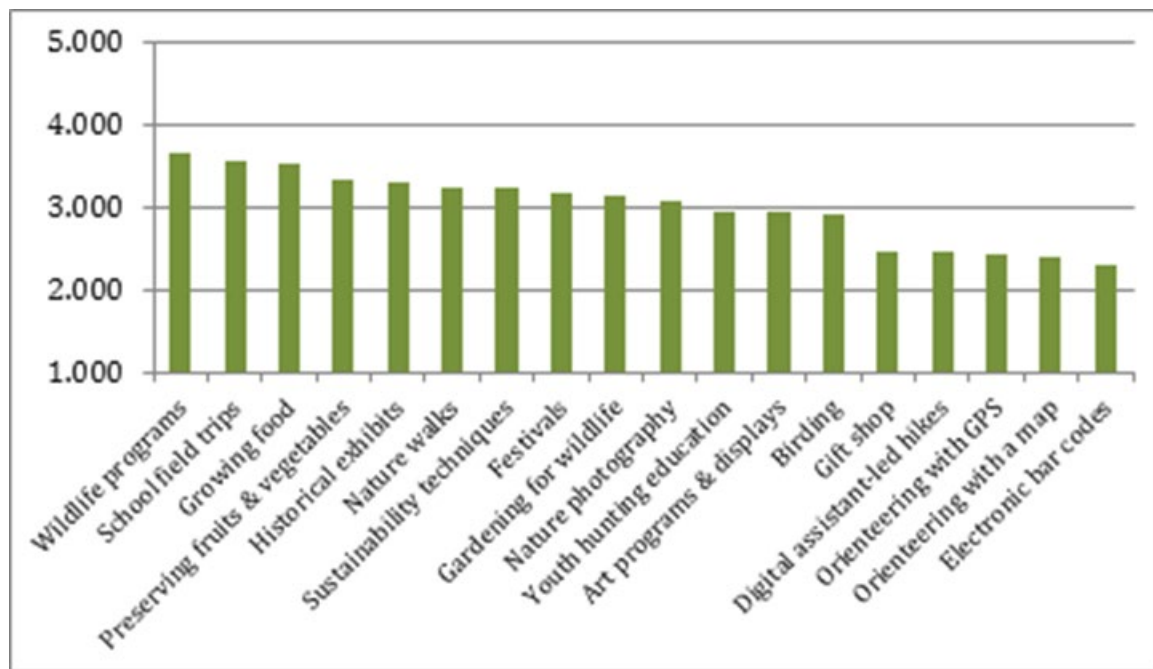
Additionally, background, gender, and age were significantly associated with support for the development. Those with an agricultural background were significantly less supportive than those with a rural, suburban, or urban background, $F(2, 497) = 6.19$, $p < .001$. Overall females of all backgrounds and age groups supported the center and farm, as background and age were not significant predictors of support by females—background $F(4, 244) = 4.29$, $p = .787$; age $F(1, 240) = .18$, $p = .672$. However, this was not the case for men. Males with an agricultural background ($M = 3.28$) were significantly less supportive than males with a rural background ($M = 73$) or suburban background ($M = 3.99$), $F(3, 243) = 5.88$, $p = .001$. Also, older males were significantly less likely to support the center and farm than were younger males ($p = .049$). In fact, the older the age group for males, the less support they showed for the development, $F(1, 239) = 4.70$, $p = .03$; R^2 for the model was .019, and the adjusted R^2 was .015. Overall for males, age significantly predicted support, $t(-2.17)$, $p = .03$; $R = .139$, $\beta = -.139$.

In terms of programming, levels of preference for most of the 18 types of experiences or programs presented were fairly similar (Figure 3). Participants were most interested in wildlife programs ($M = 3.65$), school field trips ($M = 3.57$), programs on growing food ($M = 3.52$), and programs on preserving fruits and vegetables ($M = 3.32$). People were least interested in options involving the use of technology in nature, such as electronic bar codes at

stations ($M = 2.31$) and digital assistant-led hikes ($M = 2.47$). This lack of interest in technology occurred regardless of age, $R(474) = .010$, $p = .834$.

Figure 3.

Mean Interest for Potential Programming Options



Discussion

Our findings led us to various conclusions about actions to be taken related to the development of the EE center and farm. Discussion of these conclusions may be of use to others in Extension faced with similar circumstances or considering like endeavors.

We found that most respondents supported the establishment of an EE center and demonstration farm. Community members who had high community satisfaction and those who perceived that the developments would bring economic gain to the community were more likely to support development.

Satisfaction with existing nature-based amenities played a significant role in support, as those satisfied with the existing physical and environmental aspects of the community were more supportive of the proposed EE center and farm. This finding aligns with those of previous studies. Hur and Morrow-Jones (2008) found that people satisfied with access to recreational, physical, and environmental characteristics of their neighborhoods were more positive about their communities overall. And positive community feelings promote local participation and community action (Theodori, 2004). Thus, respondents to our survey who expressed satisfaction with existing nature-based amenities may see the benefits of such amenities more readily and be more likely to take part in programming associated with the future development. Moreover, satisfaction also increases revisitation (Choo & Petrick, 2014).

Only 8%–10% of the survey respondents opposed the EE center and farm. Older males with an agricultural background were the only significant demographic who opposed the development. Perhaps these individuals did not anticipate any personal benefits from the proposed facilities; viewed the development as encroaching on farmland, thereby foreshadowing urban sprawl; or anticipated negative impacts, such as vegetation loss, noise,

traffic, and an increase in property taxes (Kline, Cardenas, Leung, & Sanders, 2007). Indeed, both males and females were less supportive if they perceived negative economic impacts. This finding indicated that UNL Extension needs to conduct further research with this population to get a better understanding of their concerns. UNL Extension also needs to continue to communicate with stakeholders and include them in the planning process to alleviate specific concerns and promote the potential benefits of agritourism, such as increased agricultural and environmental literacy, enhanced connection to agriculture and nature, increased appreciation for agriculture among urbanites, and economic benefits (Norby & Retallick, 2012; Sharp, Imerman, & Peters, 2002). This communication should lead to community members' viewing the proposed development more positively (Jurowski et al., 1997; Pizam, 1978).

In our study, females supported the EE center and farm more than males did. Other studies also have shown females to be more supportive of tourism-related offerings than males (Jurowski et al., 1997; Pizam, 1978). Kimura (2002) found that females have a propensity as nurturers, which causes an increased interest in health and community for future generations. This interest may lead females to be more supportive of a place where children can learn and grow. Again, understanding of this situation can help UNL Extension focus messaging and programming.

Community members were most interested in nature-based programming, school field trips, and food-oriented programming and least interested in technology-based options. With our areas of interest situated in the realm of natural resources, we view the low interest in technology-based activities as positive news indicating that people want to spend time outdoors without electronics. The interest in food production and preservation activities may be due to the current local foods movement and emphasis on nutrition (Loibl, Diekmann, & Batte, 2010; Timmons, Wang, & Lass, 2008) and highlights a need for UNL Extension to use the proposed endeavor to increase agricultural, food, and nutritional literacy. The proposed small-scale demonstration farm with teaching kitchen could be a reliable source of relevant information and a place for gaining domestic skills associated with literacy in these areas.

Future Implications for Extension Professionals

Our findings suggest that EE centers and demonstration farms are facilities that state and county Extension agents likely can develop with positive support from stakeholders. Such venues increase organizational visibility through high-impact programming on topics such as small-scale agriculture, residential yards and gardens, food, sustainability, and youth science education. Our results also reinforce for Extension professionals the idea that needs assessment and other forms of evaluation can be combined with other research efforts to advance knowledge in areas such as agritourism. And finally, our analysis indicates that there are those in the population who need further communication from Extension to alleviate concerns about potential programming and projects.

Conclusion

Although our survey showed that the majority of respondents were supportive of a new EE center and farm, there were concerns as well. Gathering citizen opinions in advance of development allows us to address the identified concerns and create programs the community wants. The proposed EE center and farm should provide many benefits to the community, including increased agricultural and nature-based literacy and connection to nature, while helping Extension fulfill its mission of improving the health and well-being of citizens through relevant and effective educational experiences.

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