



Use of narratives to communicate organics with commodity grain farmers

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Abstract

While grain farming has seen a major shift toward organic production in recent years, the USA continues to lag behind with domestic demand continuing to outpace domestic supply, making the USA an all-around net importer. The Midwestern USA is poised to help remedy this imbalance; however, farmers continue to slowly transition to organic production systems. Existing literature has identified three prevalent narratives that farmers use to frame their organic transition: environmentalism, farm-family legacy and economic factors, in addition to a fourth and untested religiosity narrative. This study sought to better understand how these different narratives frame grain farmers' thought processes for transitioning from conventional production systems to certified organic production systems. We co-created narratives around organic production with farmers, which resulted in four passages aligned with the literature: *farm-family legacy*, *economic values*, *environmental values* and *Christianity and stewarding Eden*. Then, we mailed a paper survey to conventional, in transition and certified organic Indiana grain farmers in order to test how these different narratives motivated organic production. We found that the most prevalent narrative around organic production is the farm-family legacy, which specifically resonated with midsize farmers. We also found that the religious stewardship narrative resonated with a substantial number of organic and mixed practice farmers, which is likely due to Amish farmers within the sample. These results shed light on the role that narratives and associated values play in organic practice use and can inform the organic efforts of agricultural professionals.

Introduction and literature review

Certified organic commodity grain crops (such as corn, soybeans and wheat) are highly sought after, with US consumer demand for organic products having grown by double digits nearly every year since the 1990s. Organic products make up roughly 6% of total food sales in the USA (Shahbandeh, 2022), while only roughly 2% of total US farmland is certified organic (FSA, 2020; NASS, 2020), creating considerable economic opportunity for growers (Greene, 2009). Additionally, empirical evidence shows that organic techniques tend to reduce the incidence and magnitude of deleterious environmental impacts associated with conventional¹ agriculture production systems (Pimentel *et al.*, 2005; Gomiero *et al.*, 2011; Kremen and Miles, 2012; Wortman *et al.*, 2012) at yields that can be comparable to conventional production (Seufert *et al.*, 2012). Organically grown crops have also been found to perform better in both drought and excessive rain conditions, eliminate pesticide runoff and improve long-term soil and plant health (Scialabba and Müller-Lindenlauf, 2010). However, the growth of the organic market continues to be inhibited by shortfalls in domestic supply (Greene, 2009; Delbridge *et al.*, 2017). Therefore, an organic farming transition, particularly among grain farmers, provides farmers with an underutilized market opportunity, lessens deleterious environmental impacts caused by current conventional practices (OTA, 2016), and would additionally bolster the USA's capacity and ability to compete with international growers (Dimitri and Oberholtzer, 2009). But in order to develop effective programs, policies and messaging that facilitate the adoption of organic practices, we must first understand the factors that impact farmer decision-making in the transition from conventional commodity grain production to organic systems, specifically, certified organic production.

¹We recognize that the use of 'conventional' is problematic in that it normalizes industrialized, high input row crop agricultural systems. However, we use this term since it corresponds to the language that farmers themselves use and because it reflects the wording in this study's survey of farmers.

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Much research on organic transition has focused on specialty crop farmers (mainly fruit and vegetable growers) (Cranfield et al., 2010; Farmer et al., 2014; Veldstra et al., 2014; Torres and Marshall, 2018), livestock farmers (Cranfield et al., 2009; Läßle, 2013) and farmers engaged in alternative food systems (Farmer et al., 2014; Bruce, 2019). While useful, these types of research either have limited generalizability to larger-scale, commodity grain producers or are too broad to provide specific insights for extension. Consequently, the study of commodity grain crops and farmer transition to organic practices and certification is paramount given that the bulk of US farmland is in commodity grain production and that grain production is central to the major sources of agricultural environmental impacts, including fossil fuel inputs through synthetic fertilizer (Stocker et al., 2014), non-point source pollution (Boardman et al., 2019) and animal feedstuffs (Felix and Dubois, 2012).

To assess farmer decision-making in the context of the organic transition, we can broadly divide influences into two types: logistical and non-logistical. On logistical barriers, research has identified technical limitations, financial constraints or lack of adequate financial incentive and incompatibility with existing farm systems as key barriers to organic adoption (Cranfield et al., 2010). Logistical barriers to organic certification vary by region and have changed over time due to the rapid growth of the organic market and increased federal support for organics (Farmer et al., 2014). Additionally, characteristics like farm size, market access and land tenure can influence farmer decision-making, but influences from gender, education and experience (Carolan, 2005) may include both logistical and non-logistical influences. Non-logistical influences can broadly include a farmer's values, motivations, worldview, mental model, management styles or narratives (Druckman, 2001; Brodt et al., 2006; Shipley et al., 2022).

Narrative framing offers a departure from logistical-focused influences to change farmer behavior, and it instead focuses on how to connect decisions with a farmer's motivations or mental models. By 'narrative framing', we mean the story and/or motivation that shapes a farmer's decision frame, which Tversky and Kahneman (1985) define as 'the decision maker's conception of the acts, outcomes, and contingencies associated with a particular choice.... controlled partly by the formulation of the problem and partly by the norms, habits, and personal characteristics of the decision maker'. Existing work across regions has investigated how farmer narratives relate to decision-making around regenerative agricultural practices (Kenny & Castilla-Rho, 2022), climate change (Houser, 2018), herbicide resistance (Dentzman, 2018), farmer aspirations (Dilley et al., 2021) and the use of positive or negative associations in farmer animal welfare (Vigors, 2019), to list a few. These works broadly demonstrate that farmer decision-making is shaped by internalized narratives and can be further influenced by externally presented narratives.

In the context of US organic farmers, three major farmer narrative frames have emerged from the literature: environmental values, economic values and farm-family legacy. In the past, farmers transitioning to organics shared unique characteristics and primarily framed their decisions through a commitment to environmental values (Cranfield et al., 2010). However, more recent entrants have a more pragmatic narrative grounded in financial motivations, efficiency and a desire to reduce their exposure to harmful chemicals (Constance and Choi, 2010; Farmer et al., 2014; Bruce, 2016; Shipley et al., 2022). More recent literature has also found evidence that organic production can be motivated

by a generalized 'my or my family's values' framing (Stephenson et al., 2017; Lloyd and Stephenson, 2020), and more specifically organic farmers can be motivated by the value of family farming and generational transfer which emphasizes stewardship of land for future generations (Shipley et al., 2022). A largely unexamined but potentially salient fourth narrative for organic farming is religiosity, particularly in the case of Amish farmers where stewardship motivated by Christian Anabaptist religiosity can motivate land conservation for Amish farmers (McConnell and Lovelass, 2018).

In order to explore these narratives further, we surveyed Indiana commodity grain farmers to examine how these four narratives from the literature, which we convergently co-produced with farmers, resonated with respondents and their perspective on organic production and transition. Specifically, we sought responses from conventional farmers, those with some certified organic cropland and those who were entirely organic in their grain production. Our focus on value narratives was to understand how messages focused on *farm-family legacy*, *economic values*, *environmental values* and *Christianity and stewarding Eden* may resonate differently with the various types of commodity grain farmers. Additionally, we wanted to better understand the endogenous and exogenous factors that correlate with the farmers' selection of the various narratives, such as farm size, revenue, farmer age and other demographics.

This paper builds off the existing literature by explicitly testing the applicability of these four narratives to organic transition decisions, using words generated by fellow farmers. Our approach is the next step in the existing literature, in that we effectively incorporate the outcome of prior work, the convergence of farmer narratives in a few key narratives, into a quantitative study of how applicable those narratives are to Indiana grain farmers. In particular, our study provides quantitative evidence on the applicability of the *Christianity and stewarding Eden* narrative to organic production. More broadly, this work also contributes to knowledge on the organic production decisions of grain farmers, which is understudied compared to organic specialty crop producers.

Applied research methods

Narrative analysis

We employed the use of narratives to better understand policy issues at the individual (micro) level, at the farm level. Narrative analysis, and narrative policy framework analysis, is an emerging method that allows for a quantitative and generalizable approach to studying critical policy issues at the macro, meso and micro levels (Knackmuhs et al., 2019). We utilized micro-level narratives to understand how various groups (conventional, in transition and certified organic) of farmers may liken their perspective and motives to various contexts (the narratives). While this article did not follow a strict narrative policy framework, it laid the groundwork for narrative development and quantitatively testing and comparing four various narratives across three varying groups of farmers. We opted to use a narrative framework for a critical piece of this study in order to better understand how critical themes from the literature and our conversations with farmers resonate, or do not, with three specific groups of farmers. This in turn will allow for a deeper understanding of motives and values affecting on-farm decision-making to pursue (or not) the adoption of organic methods and certification amongst Indiana grain farmers.

Study site

Indiana is in the Midwestern USA and boasts a successful and historic contribution to agriculture in the USA, ranking fifth in corn and fifth in soybean production as of 2019. However, Indiana is far from a leader in the proportion of certified organic operations (USDA, 2017). Organic certification rates are spatially clustered in the USA, with some areas deemed 'organic hotspots', in contrast to areas where certification lags behind (Marasteanu and Jaenicke, 2016). This dynamic is illustrated by the higher rates of organic adoption in the neighboring state of Ohio. Ohio has 24% more certified organic farms than Indiana (USDA, 2019), and a strong farmer-based organization that supports organic efforts, the Ohio Ecological Food and Farm Association (OEFFA). OEFFA provides a variety of education, social support, networking and organic certification to farmers in the region, and was a partner in past SARE-funded projects and other initiatives that foster partnerships among organic farmers, researchers and extension at The Ohio State University.

Instrument development

The questionnaire was developed in a collaborative process that included a team of four researchers, two extension specialists, two agricultural professionals who work for organic certifying agencies and five grain farmers (including certified organic and conventional). The questionnaire included four distinct sections with a total of 31 questions. Section 1 focused on farm-level and farm operator questions. Section 2 centered on a series of Likert scales directed at understanding motives for, barriers to and facilitators of different farm practices. Section 3 entailed an exploration of narratives associated with transitioning to organic systems. The four narratives used in section 3 were originally crafted by the farmers in a brainstorming session (see Appendix A), where they were charged with developing narratives that made the case for why someone should transition to organic production. Each narrative had a focused theme, with one narrative focused on *farm-family legacy*, a second on *economic values*, the third on *environmental values* and the final one on *Christianity and stewarding Eden*. We started with the farmers own words about motivations and the process of deciding to pursue organic certification and methods. Final narratives were edited by the researchers for consistency in length and style, and are reported in Appendix A. Farmers reviewed and commented on the final narratives prior to the usage in the survey. Study participants were asked to review the four narratives and select the one that most 'strikes a chord with' or 'speaks to' them. Finally, section 4 solicited demographic data.

Date collection and analysis

We used four convenience sampling approaches to collect data via paper surveys from a range of farmers. First, we solicited data from conventional-only farmers attending the 2017 Indiana Farm Bureau's annual meeting. These farmers tend to use conventional farming methods. Second, we solicited data from farmers transitioning acreage to certified organic via our contacts at OEFFA and Eco-Cert. In transition, farmers without any actual certified acreage are difficult to identify as they are not listed in the USDA Organic Integrity Database. That is why we worked with the two largest certifiers in Indiana, listed respectively. Third, we solicited data from farmers who already have certified organic acreage by sending a paper questionnaire to all Indiana

grain and pulse farmers listed in the USDA's Organic Integrity Database. Fourth, we solicited survey responses through attendance at Purdue Extension-hosted Private Applicator Recertification Program (PARP) training sessions in hopes of capturing a larger sample of the conventional only farmers. These farmers tended to be conventional-only. A \$5 cash incentive was used across all groups in order to incentivize participation.

A Qualtrics online survey was developed for data entry. Data were cleaned and organized for analysis in SAS 9.4. We focus our analysis on the differences between the conventional, mixed/transitioning (those farming only some of their grain under organic certification) and organic farmers as they pertain to the four narratives. First, we analyzed the general demographic characteristics, producing descriptive statistics and bivariate analyses comparing the two groups. Second, we used bivariate analyses to compare differences between the two farmer groups as they pertain to selection of the narrative that most resonated with them. Third, we used factor analysis with our scale measurements in order to identify aggregate factors of farmer's perceptions and values (Bruce *et al.*, 2020). Factor loadings were used to determine which survey items should be grouped together, and summary scales were created by averaging across each group if items to create a composite for each person. Finally, we used binary logistic regressions to understand the significant variables that predict whether or not a farmer picked each of the four narratives. Variables considered for model selection included gender, education, age, farm size, number of people in household, percent and gross revenue from farming and attendance at religious services; and composite (based on factor analyses) scores for health and family considerations, barriers to organic production, benefits of organic farming, priorities of profits and ecological benefits. Variables were selected for the final models based on a stepwise regression procedure where a variable is included if significant ($P < 0.05$) in the model after adjusting for other significant variables in the model. Because some people selected more than one passage, we analyzed each passage separately. We excluded those who skipped this section of the survey ($n = 11$) and four people who indicated that a passage resonated with them but did not specify which passage, resulting in 339 people who selected at least one passage. Factor loadings and scale reliability measures for considered variables are included in Appendix B.

While we did not collect specific data on the number of Amish (or other sects of the Plain community) vs English farmers captured by our sample, we note that Amish growers may be over-sampled (compared to other states outside of the Midwest) amongst the organic farmer participants, since they are believed to dominate the organic sector in Indiana as they do in other states with sizeable Amish communities such as Michigan, Ohio, Wisconsin and Pennsylvania. In addition, in the list of names taken from the USDA's Organic Integrity Database, we found many common Amish names. Finally, in the Indiana context, Amish participants can sometimes be identified as households involved in organic production with a high school education equivalent or lower.

Results

The data included responses from a total of 384 Indiana grain farmers, which encompassed 95 conventional farmers and 288 farming at least some of their grain under organic certification (one farmer did not list their farming approach). Most respondents were male (94.8%), with >70% earning the majority of

Table 1. Demographics and farming approach

	Conventional only		Not conventional only		P-value
	(n = 95)		n = (288)		
	N	Col %	N	Col %	
Gender					<0.01
Male	83	91.21	281	97.91	
Female	8	8.79	6	2.09	
Education					<0.001
Less than high school diploma/high school diploma/GED	21	22.34	256	90.46	
Some college/2-year/technical degree	33	35.11	8	2.83	
4-year college degree/graduate degree (MS, MD, PhD, etc.)	40	42.55	19	6.71	
Age range					<0.001
Under 35 years	6	7.50	45	16.01	
35–44 years	13	16.25	111	39.50	
45–54 years	16	20.00	74	26.33	
55–64 years	23	28.75	35	12.46	
65 years and over	22	27.50	16	5.69	
Farm size (total acres)					<0.001
Small (\leq 100 acers)	11	11.58	177	61.89	
Median (101–1000 acers)	42	44.21	101	35.31	
Large (1000+ acers)	42	44.21	8	2.80	
Number of people in your household					<0.001
1–5 people	85	91.40	107	37.81	
6–10 people	8	8.60	149	52.65	
10+	0	0.00	27	9.54	
Percentage of income from farming in 2017					0.338
<50%	25	28.41	64	23.27	
50–99%	44	50.00	131	47.64	
100%	19	21.59	80	29.09	
Gross revenue from farming operation in 2017					<0.001
Less than \$50,000	17	19.32	72	25.35	
\$50,000–\$349,999	32	36.36	194	68.31	
\$350,000–\$999,999	17	19.32	10	3.52	
\$1,000,000+	22	25.00	8	2.82	
How often you attend organized religious services					<0.001
Never/1–2 times a year/once a month or less	20	21.28	14	4.98	
2–3 times a month/at least every week	74	78.72	267	95.02	

Due to a less than 100% response rate on some questions, totals do not sum to 100% of sample.

their household income from the farm. [Table 1](#) presents a descriptive comparison of respondent and household demographics, highlighting differences between conventional farmers vs those growing solely or partially organic. We found statistical differences from χ^2 tests and Fisher's exact tests between demographics categories, including gender, education, age, number in household, gross revenue and religiosity ($P < 0.01$ for gender, $P < 0.001$ for others). The only variable without a significant difference was

the percentage of income derived from the farm ($P = 0.338$). Additionally, the two groups of farmers statistically differed in the number of acres in production ($P \leq 0.001$). Most participants that were farming organically produced on smaller acreage totals (61.9% farmed ≤ 100 acres), with only 2.8% farming more than 1000 acres. Solely conventional farmers generally farmed greater amounts of acreage (87.1% farmed 101+ acres), with 43% farming in excess of 1000 acres. Furthermore, potential Amish participant

Table 2. Demographics and farming approach

	Conventional only		Not conventional only		χ^2 P-value
	(n = 89)		(n = 279)		
	N	Col %	N	Col %	
Passage about legacy					0.033
Not selected	54	60.67	133	47.67	
Selected	35	39.33	146	52.33	
Passage about economics					0.260
Not selected	63	70.79	214	76.70	
Selected	26	29.21	65	23.30	
Passage about environment					<0.001
Not selected	80	89.89	191	68.46	
Selected	9	10.11	88	31.54	
Christianity and stewarding Eden					<0.001
Not selected	76	85.39	158	56.63	
Selected	13	14.61	121	43.37	

presence is shown through the greater number of organic farmers with a high school diploma equivalent or less (90.5 vs 22.3% for conventional only) and the larger household size of organic farmers (62.2% have 6+ people vs 8.6% for conventional only).

Bivariate analysis of narrative selection

For the various narratives to select from, 181 (49.2%) farmers selected the *farm-family legacy* narrative. Second, 134 (36.4%) farmers selected the *Christianity and stewarding Eden* passage. Third, 97 (26.4%) farmers selected the third-ranked passage on *environmental values*. Finally, 91 (24.7%) farmers selected the *economic values* passage. We used a χ^2 test and a Fischer's test to compare the number of farmers who selected each of the passages that most resonated with them, testing for differences in conventional vs organic (Table 2). There was little difference in the rate of conventional vs organic farmers selecting the *Economic Values* passage. However, strong differences were detected for the other three passages. Organic farmers were more likely than conventional farmers to select the *farm-family legacy*, *environmental values* and the *Christianity and stewarding Eden* passages. Of all the narratives, conventional farmers most commonly resonated with *farm-family legacy* (39.3%) compared to other narratives.

Regression results

To understand the various factors affecting farmers' opinions and their relation to the narratives, we performed a stepwise logistic regression analysis based on farmer demographics, perceptions and priorities (Table 3). For the *farm-family legacy* passage, gross revenue is the only significant predictor ($P < 0.05$). Compared to the less than \$50,000 group, people with gross revenue in range \$50,000–\$349,999 and range \$350,000–\$999,999

Table 3. Stepwise logistic regressions for selection of each passage

	Odds ratio	95 % confidence limits		P-value
Passage 1 legacy (n = 181 and n = 187 did not)				
Gross revenue				0.001
Less than \$50,000	(ref.)	–	–	
\$50,000–\$349,999	2.24	1.34	3.74	
\$350,000–\$999,999	1.79	0.73	4.41	
\$1,000,000+	0.60	0.24	1.51	
Passage 2 economics (n = 39 selected and n = 277 did not)				
Percent income from farming (units = 10%)	0.88	0.82	0.95	<0.001
Passage 3 environment (n = 97 selected and n = 271 did not)				
Priority of family health and involvement (1–4)	2.47	1.35	4.52	0.003
Obstacles to organic production (1 to 4)	0.60	0.39	0.92	0.019
Ratio of acres leased (units = 0.1)	0.91	0.83	0.99	0.028
Passage 4 stewarding Eden (n = 134 selected and n = 234 did not)				
Years farming (units = 10)	1.28	1.06	1.54	0.010
Priority of family health and involvement (1 to 4)	1.82	1.13	2.93	0.013
Farming approach				<0.001
Organic only	(ref.)	–	–	
Conventional only	0.18	0.09	0.36	
Mixed/trans	0.84	0.49	1.44	

had significantly higher odds (2.24 and 1.79 times) of choosing passage 1, and people with gross revenue \$1,000,000+ had lower odds (0.60 times) of choosing passage 1.

The *economics* passage was selected more by farmers with a lesser share of off-farm income. Percent income from farming is the only significant predictor ($P < 0.05$) of this passage. A person with 10 percentage point higher income from farming had a lower odds (0.88 times) of choosing passage 2. Conversely, a person with 10 percentage point lower income from farming had 1.13 (=1/0.88) times greater odds of choosing passage 2.

For the *environmental values* passage, the final model includes the farmer's priority for health and involvement of the family, perceptions of obstacles to organic production and the ratio of land leased ($P < 0.05$). A person with one unit higher priority for health and family (1–4 scale) had a 2.47 times higher odds of choosing passage 3. A person one unit lower on the 1–4 scale of obstacles to organic production had 1.66 (=1/0.601) times higher odds of choosing this passage. A person with 0.1 lower ratio of land leased had 1.10 (1/0.905) times higher odds of choosing this passage.

For the *Christianity and stewarding Eden* passage, the final model includes years farming, priority for health and involvement of the family and farming approach ($P < 0.05$). A farmer with 10 more years in farming had 1.28 times higher odds of choosing the 'God' passage. A farmer one unit higher on the 1–4 scale for health and family considerations had 1.82 times higher odds of

choosing the ‘God’ passage. Compared to conventional-only farmers, and mixed/transitioning farmers, those with organic-only had higher odds (5.65 and 1.19 times) of choosing the ‘God’ passage.

Discussion

We find that four narratives provide differing but also overlapping ways for farmers to understand and motivate their own decision about whether to pursue organic farming. The results of this paper quantitatively support the three narratives highlighted by the existing literature (Constance and Choi, 2010; Cranfield et al., 2010; Farmer et al., 2014; Bruce, 2016; Stephenson et al., 2017; Lloyd and Stephenson, 2020; Shipley et al., 2022) and provide substantial support for the religious narrative of *stewarding Eden*. We provide additional evidence that the environmental narrative and motivation for organic farming has fallen in prevalence since early organic adoption trends (Cranfield et al., 2010), and that the *family-farm legacy* is now the most common narrative among both conventional and organic grain farmers, but less so for the largest farms.

The *environmental* benefits narrative was relatively less popular among both conventional and organic farmers, and more correlated with farm-family prioritization and farmers who leased less of their land. This profile may indicate that farmers who more directly work their land and involve their families will better resonate with environmental and health framings around organic practices. The mechanism for this preference could be greater exposure to agricultural harms and a more active role in land conservation and associated land value incentives for environmental stewardship. Furthermore, farmers who perceived greater barriers to organic farming were less likely to resonate with the *environmental* narrative. As a consequence, the *environmental* narrative is likely a poor one for broadly encouraging farmers to transition to organic practices, especially since existing conventional farmers may be less likely to value any environmental impacts from conventional production systems, even though they are more likely to suffer impacts to their health purportedly related to agro-chemical exposure (Khan et al., 2018).

Our finding that the *economics* narrative was the least prevalent stands in contrast to existing literature, which found broad prevalence of an economics and efficiency narrative in organic production (Constance and Choi, 2010; Farmer et al., 2014; Bruce, 2016; Shipley et al., 2022). This difference may be partially attributable to our focus on grain farmers as opposed to existing work on specialty crops, and grains may face lower organic profit margins than specialty crop growers. However, our results do indicate that the *economics* narrative is slightly more relevant for conventional compared to organic producers, and as a result this narrative may be a relatively effective one for communicating the benefits of organic practices to conventional farmers, especially those who resort to greater off-farm income as a potential consequence of the lower relative profit margins of their operation.

This study provides some of the first quantitative evidence of religious motivations for organic farming, specifically the *stewarding Eden* narrative which is based on Christian religiosity. While there has been minimal research in the intersection of religious values and organic agriculture, broader literature on pro-environmental behavior has affirmed that religiosity can be a positive motivator for environmental support (Sideris, 2003; Eom et al., 2021; Zemo and Nigus, 2021; Karimi et al., 2022). The prevalence of this narrative is likely due to a high prevalence

of Amish respondents in the sample, which in turn is due to the high proportion of Amish farmers in Indiana organic agriculture. A high correlation among Amish status, organic practices and religiosity is likely driving the greater resonance of the *stewarding Eden* narrative. In particular, the idea of religious stewardship of land is a key part of how many Amish communities’ religious beliefs relate to the environment (McConnell and Lovell, 2018), but it runs in opposition to the idea of a controlling god (Eom et al., 2021). A likely high proportion of Amish respondents in our sample could also help explain the correlation between family health and farm involvement with *stewarding Eden*, as Amish farm families tend to have larger households that participate in farm labor than do English farmers. As a consequence, while the study does indicate that religious values can be a favorable framing for organic practice, how religious narratives resonate with respondents with different religious affiliations is an open question. Therefore, it is unclear to what extent the *stewarding Eden* narrative is relatable for non-Amish vs Amish farmers.

Limitations, future research and practical implications

The two main sampling issues with our study that limit the generalizability of our findings are the lack of survey information on whether or not respondents were Amish and the nature of the convenience sample drawn, which is a difficulty many researchers face when working with farmers. A high proportion of Amish in the organic sample could be biasing our evaluation of the narratives in a particular way. At minimum, it seems unlikely that our results would extend to states without a significant Amish farming population.

This study creates ample avenues for future research. First, these narrative preferences could be explored in greater depth with farmer interviews, in order to identify and probe what aspects of each narrative are most appealing and what farmer experiences or preferences these narratives are connecting to in order to create resonance. Second, future research could implement narrative resonance using a survey experiment design that draws a representative sample of farmers. Alternatively, and on the education and extension side, better understanding of farmer values for adopting organic practices and instigating the pursuit of organic certification can help guide better collaborative efforts between farmers and educators/agriculture professionals. For instance, results from this line of inquiry could help guide participatory farmer-to-farmer peer learning program development, which is one of the most impactful methods for educating on sustainable agriculture (MacMillan and Benton, 2014). Peer-to-peer in person workshops that fore front these issues and pair farmers with others holding similar values and narratives could prove incredibly valuable (Stephenson et al., 2017).

Conclusion

Though small in scope, this research brings attention to how farm-level, demographic and attitudinal characteristics do or do not influence what narratives resonate with farmers and their use of organic agriculture production and certification. Our study tested four distinctive narratives and provides correlates for how each connects with farmers, shedding light on the significance of the value propositions of religiosity, environmental stewardship, family legacy and economics. In application, the study’s findings provide insights for extension educators and other agricultural professionals working to better understand those they serve,

seeking to build high-impact programs, and working to engage in farmer–researcher collaborations that co-produce knowledge to facilitate deeper understanding for emerging, critical issues.

Supplementary material. The supplementary material for this article can be found at <https://doi.org/10.1017/S174217052300025X>.

Data. The data that support the findings of this study are available on reasonable request from the corresponding author. The data are not publicly available due to privacy and identification concerns for respondents.

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