

# Intergenerational Family Farm Leadership, Organizational Innovativeness, and Resiliency

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## **Abstract**

Family farms are central to the American agricultural economy and vital inputs to the prosperity and sustainability of rural communities. Yet, the resiliency of these farms is threatened by uncertainties associated with intergenerational leadership succession. The current study used a set of theoretical constructs from Rogers's (2003) Innovation Diffusion Model (centralization, formalization, interconnectedness, organizational slack, size) to guide a qualitative exploration of the implications of intergenerational leadership dynamics on the organizational innovativeness of six family farms in California's San Joaquin Valley. Three themes emerged across all six farms that bring nuance and complexity to the understanding of organizational innovativeness and intergenerational leadership dynamics within family farms. The themes together reveal the importance of routine ingenuity, the honoring of legacy, and conservative innovation on the longer-term resiliency of intergenerational family farms and the community systems in which they are positioned.

## **Introduction**

Despite growing concern over the global corporatization of agriculture, over 96% of the approximately 2.2 million farms in the United States (U.S.) are family owned and together account for 88% of national production yields (Whitt, et al., 2021). Family farms remain a critical element in the economic prosperity of American agricultural and rural communities (Darnhofer, 2010). Likewise, family farming is vital to the quality of life within many rural communities where the sector is often a sociocultural centerpiece (Horton, 2005; Smithers & Johnson, 2004). The long-term viability of family farms in the U.S. is nonetheless threatened by sector-wide intergenerational transition of ownership and uncertain succession outcomes (Suess-Reyes & Fuetsch, 2016).

The average age of a U.S. farmer has climbed to nearly 60 years, while the number of active farmers below the age of 40 years is in overall decline (USDA, 2017). It is worth noting

that there is some demographic nuance to these age patterns. In particular, the number of younger working adults choosing alternative agriculture (e.g., urban farming, local food production) as a career path is growing as concerns over environmental stewardship, food security and justice, and supply chain vulnerabilities continue to rise (Beckett & Galt, 2014). Nonetheless, general concerns tied to the aging of farmers and the persistence of more traditional, multi-generation family farms remain.

Specific to the current paper, access to resources (e.g., equipment, land, knowledge) and technology adoption have been found to be positively associated with younger family farmer retention and succession (Gullifer & Thompson, 2006; Mishra, et al., 2010; Pérez, et al., 2020; Suess-Reyes & Fuetsch, 2016). Yet, research on how organizational innovation (OI) influences the resiliency of inter-generational family farms (IFFs) and leadership succession from one generation to the next remains scant. OI is defined as the tendency within an organization to create and/or experiment with and if deemed valuable adopt products or processes that are new to it (Luk, et al., 2008). Specific to intergenerational succession, agricultural innovation adoption patterns vary by age with younger generations being more open to new technology and applications as compared to their older counterparts (Bae, et al., 2021; Howley, et al., 2012). Venkatesh, et al. (2012) echo this demographic variation when finding that older professionals rely heavily on their accumulated experience and habits when making decisions and thus approach OI more conservatively. Variations in innovation adoption by age (and generation) provide a compelling context from which to develop a more complex understanding of the dynamics between OI and IFF resiliency and leadership succession.

Accordingly, we qualitatively explored the intersection of OI and IFF resiliency and leadership succession through a multi-case study of six family owned and operated produce

farms in the Center California (CA) San Joaquin Valley. Our study was guided by two research questions: 1) What are the organizational characteristics that influence the innovativeness of IFFs?, and 2) How do intergenerational dynamics influence the OI of IFFs? With the insights generated, we propose a set of recommendations for developing relevant, context-specific OI practices and strategies aimed at bolstering both OI and firm- and community-level resiliency and transformation.

## **Literature Review**

Core attributes of family businesses such as IFFs include multiple generations of family members being directly involved in operations and strategic decision making, as well as the intent for ownership to remain with the family (Astrachan, et al., 2002). Leadership succession is a significant challenge to the persistence of intergenerational family businesses and the economic stability of surrounding communities (Earls & Hall, 2018; Gilding, et al., 2015). Succession planning is a complex transitional process that is vulnerable to conflict, inefficiencies, and counter-productive behaviors (De Massis, et al., 2008). Thus, intentional succession planning along with leadership development and transition activities are recommended (Bigliardi & Dormio, 2009). The inclusion of OI in the trajectory of family businesses is an important, but oftentimes missing element of intergenerational family succession strategies (Hauck & Prügl, 2015).

### *Family farm-community development dynamic*

IFF persistence and performance are critical to the competitiveness of the American agricultural economy, as well as the vibrancy and wellbeing of surrounding communities (Kurland and McCaffrey, 2020). Organizations and government agencies are collectively mobilizing to build the robustness of the IFF sector via strategies that range from lobbying for

small-to-mid-size farm friendly policies to economically incentivizing young farmer retention (Abdulai & Oppong, 2021; Mars & Schau, 2019; Plana-Farran & Gallizo, 2021). Greater technology adoption and OI have also been identified as critical inputs to young farmer retention, inter-generational leadership succession, and the overall resiliency of the IFF sector (Borychowski, et al., 2020; Bosworth & Wilson-Youlden, 2019). Yet, research on the inter-generational dynamics associated with IFF OI remains sparse.

Small-scale and family-operated farms are important economic drivers and quality of life inputs in many communities, especially those that are rural. Like other types of small businesses and local entrepreneurial firms (Fitzgerald & Muske, 2016; Moroney, et al., 2016), these farms are strong nodes in community-based entrepreneurship and innovation networks and reliable customers to other local enterprises. Reciprocally, the robustness and accessibility of community-wide social networks have been positively associated with the resiliency of IFFs and the launch of additional locally owned farms (Hersey & Adams, 2017).

### *Ingenuity, Innovation, and Transformation*

Ingenious ideas are those that emerge from routine practices with the aim of alleviating immediate economic, organizational, social, and/or technological challenges (Homer-Dixon, 2000; Mars & Schau, 2019). Ingenuity relies on the creative deployment of resources to solve pressing problems and overcome the constraints tied to organizational realities (Lampel, et al., 2014). As such, ingenuity is an expression of creativity that is spawned by specific problems that over time can evolve into sustainable and productive change (i.e., innovation). In a study of local food entrepreneurs, Mars (2020a) illustrated how ingenuity is a common feature of the routine work agriculturalists perform as they seek to overcome the organizational and technological challenges that regularly confront their enterprises.

In general terms, innovations are new products, services, and/or practices that are at first novel and over time create value for both organizations and the stakeholders they are designed to serve (Mars, 2013). Innovations vary in form, function, and impact according to organizational characteristics (e.g., size) and socioeconomic conditions (e.g., marketspace, sector-type) (Orlikowski, 2000). When ingenuity is a routine characteristic of the work performed in an organization, innovative outputs become more the norm than the exception (Lounsbury & Crumley, 2007). Innovations do not need to be radically disruptive to be impactful. Ingenious modifications to existing practices and/or the adoption of new technologies, no matter how disruptive, can accumulate significant value over time and thereby be innovative, especially in small- to medium-sized organizations (e.g., IFFs) (Camisón-Zornoza, et al., 2004).

Innovation adoption can incrementally transform organizations and in some cases the fields and systems in which they are positioned (Walker, et al., 2004). At the organization level, the accumulated impact of innovation can alter the beliefs and values that guide actor decisions and practices and reshape the ways in which work is performed, transforming the models, practices, and cultures that shape organizations (Hinings, et al., 2018). Further, the diffusion of innovations across organizations can transform the inter-organizational dynamics, relational rules, shared values, and core priorities of fields, sectors, markets, and community systems (Abernethy, et al., 2014; Hanelt, et al., 2021).

Transformation, whether at the organization or system level, does not inherently involve profound changes to or the outright displacement of foundational structures. Resilient organizations and systems are those that can change in ways that balance the transformation of certain arrangements with the sustainment of foundational structures (Frankenberger, et al., 2013; Walker, et al., 2010). The keeping of foundational cultural elements and practices and

honoring of knowledge and wisdom transferred from one generation to the next bolsters the adaptability and overall resilience of organizations and the fields and systems they collectively compose (i.e., honoring legacy) (Cabell & Oelofse, 2012). Worstell and Green (2017) describe this blending of change, especially in response to shifting conditions and external shocks, with organizational and system legacies as “conservative innovation” (p. 33). The current study contributes to the community development literature a new perspective on how ingenuity, innovation, and transformation dynamics and processes occur and influence IFFs and surrounding community systems, with particular emphasis being on legacy, resiliency, and conservative innovation.

### **Conceptual framework**

Our study is framed by a set of constructs from Rogers’s (2003) foundational theory on innovation diffusion. Rogers theorized that OI is most influenced by the following three characteristics: “(1) individual (leader) characteristics, (2) internal organizational structural characteristics, and (3) external characteristics of the organization” (p. 412). The first two characteristics align with the aforesaid literature on variations in user adoption demographics (Venkatesh, et al. 2003, 2012) and organizational composition (e.g., size) (Camisón-Zornoza, et al., 2004; Orlikowski, 2000). The third characteristic is complementary to the previously referenced dynamics between transformation and resiliency at both the organization and system levels (Abernethy, et al., 2014; Cabell & Oelofse, 2012; Frankenberger, et al, 2013; Hanelt, et al., 2021; Walker, et al. 2010; Worstell and Green, 2017). More specifically, five constructs included in Rogers’s model, each of which are described next, were used to guide our exploration of the conditions and factors influencing the OI of a sample of IFFs located in Central CA’s San Joaquin Valley.

Rogers (2003) theorized that *centralization and formalization* are negatively associated with OI. Centralization is the degree to which power and control are concentrated within an organization. The more concentrated power and control is within an organization, the less innovative it is likely to be. The logic underlying this negative association is that leaders with concentrated power and control over an organization have a narrow view of the operational realities that are routinely experienced by low-to-mid level employees. With limited viewpoints, senior leaders are unlikely to fully identify and effectively act on opportunities for innovation. Leaders with concentrated power and control are also less inclined to introduce processes and protocols that provide employees with the autonomy to experiment with and influence the adoption of innovations (Taneja, et al., 2016). Likewise, Rogers (2003) theorized that formalized decision-making and OI are negatively associated. The more rigid policies are on how innovation adoption decisions are made, the less innovative an organization is likely to be.

Rogers (2003) asserted that *organizational interconnectedness, slack, and size* are positively associated with OI. Organizational interconnectedness is the degree to which members of an organization are openly linked to external actors through interpersonal networks (Gupta & Rogers, 1991). Interconnectedness fosters OI through the open exchange of new ideas, knowledge, and strategies between organizations in common or intersecting fields. Organizational slack refers to the availability of resources for investment in innovative tools and strategies (Herold, et al., 2006). The logic stands that investment in innovation requires both available resources *and* the willingness to “take a chance” on prospective opportunities for change and disruption. Lastly, Rogers (2003) contended that size is positively associated with OI – the larger the organization, the higher the OI. The premise is that with size comes the financial

resources and intellectual capital to identify, evaluate, and invest in opportunities for innovation and absorb any failures that result from misguided investments.

## **Methods**

### ***Study design and site selection***

A multiple case study research design was used to qualitatively explore the two research questions (Yin, 2018). The cases were purposively selected using four pre-determined criteria (Patton, 2002): 1) family owned and operated farms, 2) intergenerational family participation in farming operations, 3) anticipated intergenerational succession of leadership, and 4) location within Central CA's San Joaquin Valley. The San Joaquin Valley was chosen as the community setting for two reasons. First, CA is the leader in agricultural production in the U.S. Second, the Valley itself is home to seven of the top 10 agricultural counties in CA according to the CA Agricultural Statistics Review (CDFA, 2018). There are nearly 4,000 farms operating in San Joaquin County, approximately 95% of which are family owned and operated (CDFA, 2017). Thus, the IFF sector is vital to the economic and sociocultural conditions of the Valley. Through preliminary field work, six family farms were selected as cases using the aforesaid criteria. All six farms grow fruits and/or produce with four being considered "large" in size and two being considered "small" in size. Size was determined based on annual revenue and number of employees. Per United States Department of Agriculture (n.d.) criteria, large family farms have annual gross incomes between \$250,000 and \$500,000, while small family farms have annual gross incomes under \$250,000. Each farm was assigned a pseudonym per the human subject protection protocol approved by our university's institutional review board. Figure 1 provides a brief description of each farm with its assigned pseudonym.

<b>Farm Pseudonym Name</b>	<b>Farm Description</b>
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Shoo Fly Fields	<i>Large Scale</i> Family Farm that grows Almonds, Olives, Pistachios, Pecans, Wine Grapes, Tree Fruit, and Citrus.
Stewart Family Farms	<i>Large Scale</i> Family Farm that grows Mandarins, Table Grapes, Almonds, and Pistachios.
Sugar Pine Ranch	<i>Large Scale</i> Family Farm that grows Oranges, Peaches, Apricots, and Wine Grapes.
Berry Rich Acres	<i>Large Scale</i> Family Farm that grows Blueberries, Blackberries, Table Grapes, and Almonds.
Brown Family Farms	<i>Small Scale</i> Family Farm that grows Tree Fruit, Table Grapes, Persimmons, Citrus, and Mushrooms.
Sleepy Hollow Farms	<i>Small Scale</i> Family Farm that grows Cherries, Boysenberries, Strawberries, Apricots, and Pomegranates.

Figure 1. Site pseudonyms and descriptions

***Participant sampling***

A purposive, theoretically oriented sampling strategy (Gerring, 2008; Patton, 2002) was used to develop a participant sample composed of individuals with intimate understanding of the dynamic between IFF operations and OI. The minimum participation criteria (Miles, et al., 2019) limited the sample to family representatives who were actively involved in the operations of their farms. Recruitment occurred through in-person, introductory site visits to each farm and through referrals to other family members made by initial participants (i.e., chain sampling) (Fusch & Ness, 2015). This sampling strategy generated a total of 12 participants. There is no precise threshold for the size of a qualitative study sample (Boddy, 2016). Participant recruitment in the current study was, consistent with the phenomena of focus (IFF and OI), limited to family members who were actively engaged in the operations and/or management of one of the six farm sites. Accordingly, the sample size was theoretically and empirically justified. Each participant was randomly assigned a pseudonym to protect their anonymity. Figure 2 briefing describes each

participant according to their pseudonym, IFF affiliation, and generational status. Younger and older generation categories reflect relational order - e.g., daughters and sons being “younger” and mothers and fathers being “older.” Further, participants identified in the older generation were all 60 years of age or older, while all identified in the younger generation were under 45 years of age. While each farm does not include a participant from each generation, the overall sample is equally divided between older generation and younger generation representation. Considering our focus was on IFF OI at *both* the organization *and* community levels, equal generation representation in the entire sample (as opposed to per farm) was prioritized.

<b>Pseudonym</b>	<b>Farmer Name</b>	<b>Farm</b>	<b>Generation</b>
Adrian		Sleepy Hollow Farms	Older Generation
Catherine		Brown Family Farms	Older Generation
Colin		Shoo Fly Fields	Older Generation
Grace		Berry Rich Acres	Older Generation
Jeffrey		Sugar Pine Ranch	Older Generation
Steven		Brown Family Farms	Older Generation
David		Sugar Pine Ranch	Younger Generation
Dolores		Shoo Fly Fields	Younger Generation
Greg		Stewart Family Farms	Younger Generation
Jake		Shoo Fly Fields	Younger Generation
Mike		Sugar Pine Ranch	Younger Generation
William		Sleepy Hollow Farms	Younger Generation

Figure 2. Participant pseudonyms, affiliations, and generational standings

### ***Data collection and analysis***

Data were collected from three sources throughout the spring of 2022. First, semi-structured interviews were conducted with each participant (Miles, et al., 2019). The interview protocol was derived from Rogers’s (2003) five constructs and thus designed to probe the organizational characteristics and intergenerational leadership dynamics that influenced the OI of each farm. The interviews were audio recorded and later transcribed for analysis. Second, site visits were conducted, when possible, to capture routine expressions of OI and intergenerational

leadership dynamics. Approximately 15 hours of direct observations were made across the six IFFs with insights recorded in field notes and later summarized in detail using a memo format (Maxwell, 2013). Third, artifacts that included marketing pieces, websites, and social media pages from each farm were collected and archived for analysis.

We used a hand coding strategy to provide more direct and intimate interactions with the data throughout the analysis (Ryan, 2009). A structured coding framework composed of the Rogers’s (2003) five OI constructs guided the deductive analysis of the data (Miles, et al., 2019) (see Figure 3). This framework enabled a structured approach to exploring the OI and intergenerational leadership dynamics at each farm through the informants’ perspectives and experiences, as well as through the nuances contained within the field notes and artifacts. Inductive analysis was also conducted using an open coding strategy to reveal any relevant patterns or themes that were not captured through deductive analysis (Corbin & Strauss, 2015). The strategy was carried out over multiple rounds that included both idiographic and nomothetic analysis (Gelo, et al., 2008). Several rounds of idiographic analysis were conducted to identify and characterize early-stage patterns and themes specific to each participant as a standalone micro-case (Gerring, 2007). Next, multiple rounds of nomothetic analysis were performed, which involved the emergent patterns and themes identified through the idiographic stage being compared across the participant sample and farm sites. By doing so, meta-themes were revealed and continually narrowed and refined until the final set of findings were established.

<b>Codes</b>	<b>Description</b>
Centralization (Cen)	Power & control in the organization are in the hands of one, or a few individuals.
Formalization (F)	Following the rules and procedures a company sets.
Interconnectedness (IC)	Enables organizations members to openly share and discuss new ideas and strategies.

Organizational Slack (OS)	The degree of freedom an organization has to utilize excess resources towards innovations.
Size (S)	How large or small a company is.
Large Scale Family Farm (LSF)	A family farm that grosses over \$500,000 annually (USDA, n.d.).
Medium Scale Family Farm (MSF)	A family farm that grosses between \$250,000 and \$500,000 annually (USDA, n.d.).
Small Scale Family Farm (SSF)	A family farm that grosses under \$250,000 annually (USDA, n.d.).
Innovativeness (I)	Organizational capacity to effectively engage in innovative activities and strategies.
Positive (+)	Positively associated with innovation.
Negative (-)	Negatively associated with innovation.

Figure 3. Internal characteristics of organizational structure codes

### ***Trustworthiness and limitations***

The trustworthiness of our study was enhanced in several ways. First, data analysis involved us as researchers reaching consensus on the emergent themes and patterns at the conclusion of each round of analysis (i.e., researcher triangulation) (Creswell, 2007). Second, we identified, noted in memo format, and tracked throughout the analysis intersections between the three data sources (i.e., data triangulation) (Leech & Onwuegbuzie, 2007). Together, researcher and data triangulation increased the credibility of both our analysis and the findings (Berg & Lane, 2014). Third, an audit trail that spanned the development of the design, application of the data collection protocol, and entire analytical process was systematically maintained to provide transparency and increase the potential replicability of the study (Creswell & Miller, 2000). Fourth, the findings were presented using thick descriptions to enhance the transferability of the study's findings (Lietz & Zayas, 2010).

The study is not without limitations. The perspectives and strategies expressed by the participants were unique to themselves and their farms and do not necessarily reflect those held by others. The six farms are in a common community and thus operate within a particular

environmental context that may or may not reflect similar conditions within other locales and regions. The relatively small sample size allowed us as researchers to intimately delve into the lived experiences and worldviews of the participants, adding depth and complexity to the insights generated (Boddy, 2016; Crouch & McKenzie, 2016). Nevertheless, as with all qualitative research, the findings are unable to be generalized with the rigor just described being instead directed at enhancing the transferability of the insights generated (Malterud, 2001).

## **Findings**

Three themes emerged across all six farms that bring nuance to the understanding of OI and intergenerational leadership dynamics within IFFs. First, a leadership dynamic that was generationally balanced and bounded within the authority of family members had the most influence over the OI and the IFFs. Second, resource slack strategies further evidenced an intergenerational leadership dynamic that fostered OI based on resourcefulness and ingenious problem-solving. Third, interconnectedness was local and regional in scope and again heavily focused ingenuity and shared problem solving. Common threads woven throughout all three themes were the influence of legacy on OI and an overall conservative approach to innovation.

### ***Intergenerational leadership dynamic***

The overall esthetics and levels of sophistication of the IFFs' artifacts (i.e., webpages, social media sites, marketing materials) varied widely from one farm to the next – e.g., one farm had no internet presence while another maintained a website with rolling announcements, multiple YouTube videos pertaining to their products and growing techniques, and a public discussion board. Those that highlighted growing techniques did so in ways that connected technological adoption with established and proven practices, signaling an intentional mix of stability and innovation. Moreover, the artifacts consistently emphasized a deep appreciation of

family traditions and operational foundations anchored in the knowledge, techniques, and wisdom accumulated and improved upon from one generation to the next (i.e., honoring legacy). For example, the webpages of four of the IFFs showcased photos of past generations alongside written narratives that chronicled the histories of the farms. This common link and honoring of legacy reflected a common intergenerational leadership dynamic that was further revealed across all six IFFs throughout the interviews and site observations.

Daughters and sons routinely served in mid-to-upper-level leadership positions, situating them to eventually assume control of the family farm. This positioning did not translate to the younger generation having immediate control over OI decisions - such authority was firmly retained by the older generations. Mike, a younger generation family farmer, stated, “My Father has the say when it comes to the decision making. He is old school and believes there is a right way and a wrong way of doing things.” Similarly, Steven, an older generation family farmer states, “I make all the decisions. I am open to suggestions, but the workers need to follow the program.” These quotes illustrated an overall pattern of centralized power and control among older generations.

The intergenerational leadership dynamic created a closed setting in which OI decisions were almost entirely confined to family members. Metaphorically speaking, OI decisions were not made in a board room, but rather in the family dining room. Within this setting, the younger generations had some input into OI decisions, acting as council to their older counterparts through intimate and informal family discussions. Several of the younger farmers indicated older leaders were more open to new ideas and opportunities for innovation in such settings. Greg, a younger generation farmer, stated,

The most important thing you can do in a family business is communicate. So, we are constantly talking, sometimes in formal ways like board meetings or regularly scheduled

meetings, but more importantly, informally over the course of the day during small discussions, having lunch together almost on a daily basis with the majority of our family members in the family business. That's how decisions get made. In informal settings everyone is more relaxed and easier to talk to which helps you get to better answers and arrive at better decisions.

Likewise, Mike stated,

Whenever there is a problem the family sits down at the breakfast table... and say, okay this problem needs to be dealt with what should we do? We then divide up the tasks and conquer them as a family unit. Dividing and conquering as a family is much more efficient than if one person was in charge and had to do all the tasks.

In some instances, family leadership circles were opened to outsiders in unique positions that involved specialized knowledge (e.g., agronomists). Inclusion was typically tied to persistent problems and involved the younger generation informally soliciting input from others, which in turn they brought back to the family forum where it was discussed relevant to past experiences, underlying values, perceptions of legitimacy, and so on. Grace, an older generation farmer at Berry Rich Acres, described this process as follows:

Decisions are made consulting with our team, the ranch foreman, our pest control advisors, and accountants. We also take into consideration historical trends of what we've done and what's worked in the past. We like to balance our decisions with a combination of input and proof of practice.

In general, the "breaking of bread" within informal family settings allowed for less incumbered dialogue between generations with ideas and suggestions being more freely exchanged.

While the older generation farmers had some trust in the judgment of their successors, they nonetheless remained most confident in their own insights and wisdom. For example, Jeffrey stated, "Youth and ambition is great, but it needs to be tampered with age and wisdom."

Mike stated,

My father has the final say in the decision-making process, but we're [younger family members] basically his right hand guys. We have a lot of input, but he's the ultimate deciding factor. All me and my brother do is give input like most other family businesses, the father runs the show, but does listen to his sons or daughters. Sometimes he doesn't

always agree with our inputs, but all you can do is put it out there and say, “it’s your decision. What do you want to do?”

Similarly, David, a younger member of a family leadership team stated,

We [younger generation] bring new technology to our father that we think would be cost effective to implement and that would increase efficiency [to operations]. What we think is a great idea might not be to our father. The planting of the idea seed in our dad’s mind is the main goal because over time that seed will grow into his own idea, which he will then implement into the company.

Overall, younger generation urges to engage in OI were moderated by older generation authority over decision-making processes, which was informed by a depth of knowledge and wisdom that was accumulated over many decades of individual and multi-generational experiences (i.e., honoring legacy). This balanced intergenerational leadership dynamic worked to integrate ingenuity with the operational foundations of the farms, as opposed to allowing for unbridled OI and extreme disruption.

### ***Legacy-informed ingenuity***

The IFFs pursued one of two strategies when any excess resources (i.e., slack) became available: 1) enhance the performance and extend the use of established practices and/or 2) accumulate ‘rainy day funds.’ Regarding the first strategy, Grace, an older generation farmer at Berry Rich Acres, stated,

We set aside funding for projects that make for more efficient practices that are geared towards cutting down expenses and cutting down on operating costs. Whether it be switching to crops that allow for more mechanization cutting down labor costs or hiring only laborers that have prior experience in picking a specific crop.

Slack extended beyond money to include salvaged equipment and materials that could be repurposed in ingenious ways. Adrian, an older generation farmer at Sleepy Hollow Farms, who stated,

We have very little slack resources and they seem to get smaller every year. The only reason that we have progressed forward is because I integrate a lot of the resources that I

have into maintenance of equipment. We build some of our own equipment from old sprayers or equipment that are broken on other farms or ranches and buy them and bring them back to life. This is a lot cheaper than going out and buying a new or used sprayer.

Similarly, Colin, an older generation farmer at Shoo Fly Fields, stated,

We have a bone yard of all our old equipment. Rather than selling them or taking the money from recycling them we use them for parts to fix our machinery that is being used today. My father showed me this practice and said everything can be utilized or repurposed and has some sort of value. Sometimes you just have to hold on to it to find out.

This ‘bone yard strategy’ symbolized a common pattern across all six IFFs in which ingenuity and forward-thinking problem solving were primary investments that often originated from the experience and wisdom of the older generation farmers.

When it came to banking funds in advance of unexpected challenges, Jeffrey, an older generation farmer and owner of Sugar Pine Ranch, stated, “A rainy day fund is important because you never know when something is going to break and when it does then you have the money to replace it.” The discipline and foresight to set aside resources as a future safety net, as well as ingeniously re-deploy otherwise expired physical resources, was further indication of the intergenerational balance of enthusiasm for change and progress with wisdom accumulated through experience. This balance further evidenced an intergenerational dynamic based on legacy that influenced OI in ways that favored pragmatic ingenuity and controlled transformation over disruptive innovation and change.

### ***Interconnectedness and ingenuity***

Each of the six IFFs were locally and regionally interconnected to include partnerships with colleges and universities, service on agriculture boards, and shared problem solving. Inter-organizational connectedness was focused on combatting common problems and sustaining

tightly woven communities of practice. Turning first to connectiveness with local and regional colleges and universities, Jake, a younger generation farmer at Shoo Fly Farms, stated,

We sponsor events for the betterment of milling. We sponsor educational seminars called master milling courses. We've ran two different master milling courses at Fresno State so far. We have also put together two-day courses with our head miller where we invite other millers and olive oil companies from up and down the state to come share and learn. It is a very open dialogue where we are able to share the problems we encountered and what actions we took to solve the problems. The olive oil community is a very small group in California so anything we can do to uplift the industry is very powerful.

More generally, local and regional universities were trusted sources of professional development among the farms' leadership circle and broader managerial staff. Colin, an older generation farmer at Shoo Fly Fields, stated, "we embrace education and try to utilize as many workshops and opportunities put on for those who have Pest Control Advisor Licenses and Qualified Applicator Licenses and Certificates by both state and UC institutions in California." Similarly, Steven stated,

I go to as many UC Extension field trials and seminars as possible. Just in the last month I have been to two and have traveled up to 200 miles to go to one of them. Information is understanding and you need that information to come up with proper solutions.

Professional development activities were aimed at both maintaining licensing and certification standards and enhancing the capacity for ingenuity (i.e., problem solving), thereby strengthening the farms' foundations for longer-term innovation and resiliency.

Interconnectedness also involved IFF leadership providing service to local and regional agriculture organizations and advocacy groups (e.g., farm bureaus). This type of service created opportunities for IFF leaders to have some influence over public policies relevant to agricultural and rural development issues. Greg stated,

I think that is really important to be a part of industry groups where you can talk about the things that are affecting our industry and have common voice. We are a part of many of those organizations and sit on the boards which I think are very important to participate in.

Similarly, Colin, an older generation farmer at Shoo Fly Fields, stated,

I am a part of two different Central Valley counties farm bureaus' Board of Directors. It is very important to stay involved in your local community because your family and your local community is who you will turn to when times are tough.

Community mobilization around common problems was further reflected by Adrian, an older generation farmer at Sleepy Hollow Farms, who stated,

We have a group of people in the cherry industry that we do quarterly and yearly meetings with. The industry is small enough that all the growers communicate and share information, for example there was a big problem with a particular worm getting into the cherries and some of the growers lost all of their crops. We hadn't experienced that, so they came out to our small ranch and wanted to know what we were doing differently. I told them that we don't spray and they said, okay you don't want to share the information. When in fact that's exactly what we were doing was nothing. Bigger companies spray knock down pesticides that kill off the natural resistance and predators of the pest. Once they saw that we actually were telling them the truth the larger companies started following our lead and converted to no spray for that particular issue.

Community engagement as described by Greg and Colin and the importance of inter-farm trust and knowledge sharing as described by Adrian reflected a willingness across all six IFFs to contribute to the success and resiliency of other farms and the broader regional farming sector.

Local and regional interconnectedness via collaboration and knowledge exchange is further illustrated through the participation of Sugar Pine Ranch in a viticulture co-op. Jeffrey, the owner of Sugar Pine Ranch, described the grower co-op as follows:

I am the head of a 17 grower co-op to grow for a particular winery. So, we have a reserved home for our product. This co-op pact protects all the growers so they are not at the whim of a large corporation like Gallo or larger wineries that can change the price of the open market with the snap of a finger. We work together in the co-op and share information about what our field workers are seeing with one another. In the co-op the farmers grow all of their own grapes, harvest them, and deliver them to the winery where they make it into an end product and sell them at bulk or wholesale prices. We supply one of the biggest cooking wine companies in the Western United States.

This tight knit community of growers served as an information hub through which participating farmers exchanged ideas for improving crop production and solving pressing (and often shared)

problems. Here again, collective engagement and collaboration served as a source of farm- and community-based ingenuity and in the aggregate longer-term innovation and resiliency.

### **Discussion and Recommendations**

The preceding findings complicate Rogers's (2003) generalizations of OI in several ways specific to IFFs. First, an intergenerational leadership dynamic rooted in legacy had the greatest influence on OI across all six IFFs. The accumulation and transfer of experience and wisdom from one generation to the next (i.e., honoring legacy) supersedes other organizational characteristics, such as size and wealth, when it comes to IFF OI. Second, family leadership circles centralized control over OI. Again, such centralization was directly rooted in legacy and thereby moderated more than stifled the OI of the IFFs. This adds contextual nuance to Rogers's generalized assertion that centralization is negatively associated with OI. Third, the utilization of excess resources favored everyday ingenuity and preparation for the unexpected over more risky investments in leading edge innovations. This observation extends the scope of resource slack in OI to include more cautious, yet influential investments that favor incremental transformation and long-term resiliency over radical transformation and disruption. Fourth, regional interconnectedness nurtured a community of practice centered on knowledge exchange, resource pooling, and joint problem solving. Consistent with Rogers's generalization that openness is positively associated with OI, such interconnectedness illuminates the relevancy and influence of collective ingenuity on the resiliency and transformative elements of community innovation systems.

At the firm level (e.g., individual farms), the findings show IFF OI to be firmly rooted in the legacy of older generation leadership. Consistent with Cabell and Oelofse's (2012) conceptualization of honoring legacy, the demands for innovation are moderated by a cultural

and strategic commitment to the knowledge and wisdom accumulated by the older generation through their years of experience and leadership. Such moderation fosters incremental change via pragmatism and resourcefulness and sustains a productive mix between organizational maintenance and everyday ingenuity that culminates over time in what Worstell and Green's (2017) notion of conservative innovation. In short, centralization of control did not stifle OI, as Roger's theory would predict, but rather shaped how it was approached and strategically managed.

The size and wealth of the farms had no apparent influence on firm-level approaches to OI. This contradicts Roger's (2003) generalized assertion that size and resource slack are positively associated with OI. Further, the strategic, yet cautious use of slack to sustain the organizational core and advance incremental change along the margins (i.e., conservative innovation) is consistent with the view of slack serving as a buffer to environmental shocks as theorized in the ecological resiliency literature (Worstell, 2020). Such buffering enhances the IFFs capacity to persist within uncertain conditions, whether climatic, economic, or socio-political in nature, and moderate change in ways that honor (and leverage) legacy while conservatively integrating innovation with established organizational and technological practices and strategies.

Our observations together reveal a limitation of Roger's theory, which is the oversight of how the unique characteristics and conditions of specific firm-types and sectors (e.g., IFFs, IFF sector) shape OI in ways that extend beyond broader generalizations. IFFs persist and evolve in firm- and sector-based ways that are guided by the continual occurrence, accumulation, and inter-generational transfer of experience, knowledge, and wisdom. To reiterate, these honored characteristics do not hinder, but rather influence OI in ways that promote controlled change and

long-term resiliency. We suspect our findings transfer to and vary across inter-generational family businesses more broadly and thus encourage further research on the OI of inter-generational family firms in ways like the current paper, but outside of the IFF sector.

Our findings have also revealed new insights into the complex ways in which OI intersects with inter-generational leadership succession. Rather than being a point of contention between generations, the facilitation of OI presented as a productive platform for transmitting knowledge and wisdom from older generation farmers to their younger successors. Elsewhere, the productive balance between tradition and innovation has been positively linked to the OI and overall performance of family businesses - farms or otherwise (De Massis, et al., 2016). Nevertheless, differences in perspectives on OI between generations may still slow or undermine succession planning. Accordingly, scholars who research the shifting demographics of the family farm sector and the associated implications at both the firm- and community-levels are encouraged to look outside their own literatures for new insights into the integration of OI strategies with established IFF practices and models.

Turning to the management information systems literature, for example, Venkatesh and colleagues' (2003, 2012) unified theory of acceptance and technology use explains how individual characteristics, including age and experience, influence one's willingness to adopt new information technologies. This theoretical perspective stands to inform how the differences in perspectives and positions between inter-generational leadership can enhance the intentional use OI as a succession planning and familial leadership retention tool. This and similar specialized theories of innovation have the promise of pushing both research and practice beyond the limitations of more generalized theories of innovation adoption, such as Rogers's (2003)

foundational theory, to include designing more targeted OI strategies that better account for the complex and nuanced undercurrents that shape certain firm-types and sectors.

The aforesaid assertion extends to community systems. Recall that the interconnectedness and openness between the IFFs and various regional groups and entities formed a community of practice based on knowledge exchange, resource pooling, and joint problem solving. This dynamic supports a culture of conservative innovation at the community level that resembles that which was observed across the six IFFs. Returning to ecological resiliency theory, such community-level conservative innovation promotes what ecologists refer to as connective modularity or the formation of communities within systems that collectively “safeguard[s] against the spread of [external] shocks” (Kharrazi, et al., 2020 p. 2). This modularity brings collective strength through IFF knowledge sharing and inter-organizational collaborations, while also retaining firm-level autonomy and resiliency vis- à-vis the honoring of legacy and commitment to conservative innovation. Such modularity and underlying conservative innovation forge a collective buffer that further aids the IFFs in moderating and responding to external disturbances (Worstell, 2020). In short, collective resiliency is strengthened, making the collapse of community systems and sub-systems (e.g., the IFF sector) in the wake of external disruptions less likely (Sundstrom & Allen, 2019).

Just as the economic prosperity of family businesses, including IFFs, is positively associated with openness and collaboration (Feranita, et al., 2017), so too is the vibrancy and well-being of surrounding communities and sectors (Borich & Korsching, 1990; Mars, 2020b, Spielman, et al., 2011). In the current paper, we have added nuance to this dynamic by highlighting the firm-to-community scope of conservative innovation and the importance of everyday ingenuity in bolstering firm- and system-level resiliency.

Lastly, further research that advances and refines the insights generated here is warranted. First, future studies that further explore IFF OI in locales and regions outside of Central CA are encouraged, as are those that consider agricultural contexts that extend beyond produce and fruit farming (e.g., fiber productions, dairies, ranches). Second, research that examines the integration of intergenerational family businesses, agricultural or otherwise, with community innovation initiatives and associated systems would be especially fruitful to the community development literature. For example, the use of social network analysis to map how IFFs and similar family enterprises are embedded in local and regional innovation systems would further inform community-centered strategies for increasing the OI and inter-generational succession of small and family-owned businesses, as well as enhancing robustness and well-being of surrounding economies and communities (see Balfour & Alter, 2016; Jackson, 2004). Third, there is an extensive literature on ecosystem modeling specific to new venture creation and economic development (Audretsch & Belitski, 2021). Yet, alternative views of innovation ecosystems centered on community transformation have been largely overlooked (Mars, 2020b). Thus, we call for research on holistic system-level innovation strategies and designs that link a diverse range of firm-based characteristics and strategies with community-based resources in ways that balance change with legacy and transformation with resiliency. We contend such firm- and system-level work can contribute to a more robust, relevant, and appealing foundation on which success of intergenerational family firm succession can occur.

## **Conclusion**

This study has revealed how legacy and conservative innovation influence the OI and resiliency of IFFs in ways that vary from the generalizations Rogers (2003) asserted in his foundational work on innovation diffusion. We have underscored the importance, illustrated the

relevant nuances, and encouraged the development of firm- and sector-specific OI strategies. By better understanding and more intentionally leveraging the nuances of IFF OI, scholars and practitioners alike are better positioned to encourage the OI needed to enhance the resiliency and longer-term vibrancy of IFFs. Such interventions are especially important in rural communities that are shaped and sustained by family farms, many of which are inter-generational.

Accordingly, we have provided recommendations that bring greater attention to the nature and importance of relevant, context-specific practices and strategies aimed at bolstering both OI and firm- and community-level resiliency and transformation.

## References

- Abdulai, A.-R., & Opong, A. (2021). Understanding the agriculture policy environment in Newfoundland and Labrador – A focus on farmer attraction and retention interventions. *The Journal of Rural and Community Development*, 16(2), 232-252.
- Abernethy, K.E., Bodin, Ö., Olsson, P., & Schwarz, H.A. (2014). Two steps forward, two steps back: The role of innovation in transforming towards community-based marine resource management in Solomon Islands. *Global Environmental Change*, 28, 309-221. <https://doi.org/10.1016/j.gloenvcha.2014.07.008>
- Astrachan, J.H., Klein, S.B., & Smyrnios, K.X. (2002). The F-PEC scale of family influence: A proposal for solving the *family business* definition problem. *Family Business Review*, 15(1), 45-58. <https://doi.org/10.1111/j.1741-6248.2002.00045.x>
- Audretsch, D.B., & Belitski, M. (2021). Towards an entrepreneurial ecosystem typology for regional economic development: The role of creative class and entrepreneurship. *Regional Studies*, 55(4), 735-756. <https://doi.org/10.1080/00343404.2020.1854711>
- Bae, H., Jo, S.H., & Lee, E. (2021). Why do older consumers avoid innovative products and services? *Journal of Services Marketing*, 35(1), 41-53. <https://doi.org/10.1108/JSM10-2019-0408>
- Balfour, B., & Alter, T.R. (2016). Mapping community innovation: Using social network analysis to map the interactional field, identity facilitators, and foster community development. *Community Development*, 47(4), 431-448. <https://doi.org/10.1080/15575330.2016.1153493>

- Beckett, J., & Galt, R.E. (2014). Land trusts and beginning farmers' access to land: Exploring the relationships in coastal California. *Journal of Agriculture, Food Systems, and Community Development*, 4(2), 19–35. <http://dx.doi.org/10.5304/jafscd.2014.042.008>
- Berg, B. L., & Lane, H. (2014). *Qualitative research methods for the social sciences* (8<sup>th</sup> ed.). Pearson Education Limited.
- Bigliardi, B., & Dormio, A.I. (2009). Successful generational change in family business. *Measuring Business Excellence*, 13(2), 44-50. <https://doi.org/10.1108/13683040910961207>
- Boddy, C.R. (2016). Sample size for qualitative research. *Qualitative Market Research: An International Journal*, 19(4), 426-432. <https://doi.org/10.1002/nur.4770180211>
- Borich, T.O., & Korsching, P.F. (1990). Community image and community innovativeness. *Community Development*, 21(1), 1-18. <https://doi.org/10.1080/15575339009489968>
- Borychowski M, Stępień S, Polcyn J, Tošović-Stevanović A, Čalović D, Lalić G, and Žuža M. (2020). Socio-economic determinants of small family farms' resilience in selected Central and Eastern European countries. *Sustainability*. 2020; 12(24):10362. <https://doi.org/10.3390/su122410362>
- Bosworth, G., & Wilson-Youlden, L. (2019). Women tourism entrepreneurs and the survival of family farms in North East England. *Journal of Rural and Community Development*, 14(3), 126-145.
- Cabell, J. F., and M. Oelofse. (2012). An indicator framework for assessing agroecosystem resilience. *Ecology and Society*, 17(1), 18. <http://dx.doi.org/10.5751/ES-04666-170118>
- Camisón-Zornoza, C., Lapiedra-Alcamí, R., Segarra-Ciprés, M., & Boronat-Navarro, M. (2004). A meta-analysis of innovation and organizational size. *Organization Studies*, 25(3), 331-361. <https://doi.org/10.1177/0170840604040039>
- CDFA (2017). Farms + data: Most California farms are family-run, and farmers are aging, Retrieved June 24, 2022, from <https://plantingseedsblog.cdfa.ca.gov/wordpress/?p=10909>
- CDFA (2018). California agricultural statistics review, 2017–2018, Retrieved June 24, 2022, from <https://www.cdfa.ca.gov/statistics/PDFs/2017-18AgReport.pdf>
- Corbin, J., & Strauss, A. (2015). *Basics of qualitative research: Techniques and procedures for developing grounded theory* (4th ed.). Sage.
- Creswell, J.W. (2007). *Qualitative inquiry and research design: Choosing among five approaches* (2nd ed.). Sage.

- Creswell, J. W., & Miller, D. L. (2000). Determining validity in qualitative inquiry. *Theory into Practice*, 39(3), 124-130. [https://doi.org/10.1207/s15430421tip3903\\_2](https://doi.org/10.1207/s15430421tip3903_2)
- Crouch, M., & McKenzie, H. (2106). The logic of small samples in interview-based qualitative research. *Social Science Information*, 45(4), 483-499. <https://doi.org/10.1177/0539018406069584>
- Darnhofer, I. (2010). Strategies of family farms to strengthen their resilience. *Environmental Policy and Governance*, 20(4), 212-222. <https://doi.org/10.1002/eet.547>
- De Massis, A., Chua, J. H., & Chrisman, J. J. (2008). Factors preventing intra-family succession. *Family Business Review*, 21(2), 183-199. <https://doi.org/10.1111/j.17416248.2008.00118.x>
- De Massis, A., Frattini, F., Kotlar, J., Petruzzelli A.M., & Wright, M. (2016). Innovation through tradition: Lessons from innovative family businesses and directions for future research. *Academy of Management Perspectives*, 30(1), 93-116. <https://doi.org/10.5465/amp.2015.0017>
- Earls, A., & Hall, H. (2018). Lessons for Succession Planning in Rural Canada: A Review of Farm Succession Plans & Available Resources in Haldimand County, Ontario. *Journal of Rural and Community Development*, 13(4), 25-42.
- Feranita, F., Kotlar, J., & De Massis, A. (2017). Collaborative innovation in family firms: Past research, current debates and agenda for future research. *Journal of Family Business Strategy*, 8(3), 137-156. <https://doi.org/10.1016/j.jfbs.2017.07.001>
- Fitzgerald, M. A., & Muske, G. (2016). Family businesses and community development: the role of small business owners and entrepreneurs. *Community Development*, 47(4), 412-430. <https://doi.org/10.1080/15575330.2015.1133683>
- Frankenberger, T., Mueller M., Spangler T., & Alexander S. (2013). *Community resilience: Conceptual framework and measurement feed the future learning agenda*. Westat.
- Fusch, P.I., & Ness, L.R. (2015). Are we there yet? Data saturation in qualitative research. *The Qualitative Report*, 20(9), 1408-1416.
- Gelo, O., Braakmann, D., & Benetka, G. (2008). Quantitative and qualitative research: Beyond the debate. *Integrative Psychological and Behavioral Science*, 42(3), 266–290. <https://doi.org/10.1007/s12124-008-9078-3>
- Gerring, J. (2007). *Case Study Research: Principles and Practices*. Cambridge University Press.
- Gerring, J. (2008). Case selection for case study analysis: Qualitative and quantitative techniques. In J. Box-Steffensmier, H. Brady, & D. Collier (Eds.), *The Oxford handbook of political methodology* (pp. 645-684). Oxford University Press.

- Gilding, M., Gregory, S., & Cosson, B. (2015). Motives and outcomes in family business succession planning. *Entrepreneurship Theory & Practice*, 39(2), 299-312. <https://doi.org/10.1111/etap.12040>
- Gullifer, J., & Thompson, A.P. (2006). Subjective realities of older male farmers: Self perceptions of ageing and work. *Rural Society*, 16(1), 80-97. <https://doi.org/10.5172/rsj.351.16.1.80>
- Gupta, A.K., & Rogers, E.M. (1991). Internal marketing: Integrating R&D and marketing within the organization. *Journal of Services Marketing*, 5(2), 55-68. <https://doi.org/10.1108/08876049110035558>
- Hanelt, A., Bohnsack, R., Marz, D., & Marante, C.A. (2021). A systematic review of the literature on digital transformation: Insights and implications for strategy and organizational change. *Journal of Management Studies*, 58(5), 1159-1197. <https://doi.org/10.1111/joms.12639>
- Hauck, J., & Prügl, R. (2015). Innovation activities during intra-family leadership succession in family firms: An empirical study from a socioemotional wealth perspective. *Journal of Family Business Strategy*, 6(2), 104-118. <https://doi.org/10.1016/j.jfbs.2014.11.002>
- Herold, D.M., Jayaraman, N., & Narayanaswamy, C.R. (2006). What is the relationship between organizational slack and innovation? *Journal of Management Issues*, 18(3), 372-392.
- Hersey, A., & Adams, M. (2017). Using contribution analysis to assess the influence of farm link programs in the US. *Journal of Agriculture, Food Systems, and Community Development*, 7(3), 93-103.
- Hinings, B., Gegenhuber, T., & Greenwood, R. (2018). Digital innovation and transformation: An institutional perspective. *Information and Organization*, 28(1), 52-61. <https://doi.org/10.1016/j.infoandorg.2018.02.004>
- Homer-Dixon, T. (2000). *The ingenuity gap*. Knopf.
- Horton, M. (2005). Rural crisis, good practice and community development responses. *Community Development Journal*, 40(4), 425-432. <https://doi.org/10.1093/cdj/bsi087>
- Howley, P., O'Donoghue, C., & Heanue, K. (2012). Factors affecting farmers adoption of agricultural innovations: A panel data analysis of the use of artificial insemination among dairy farmers in Ireland. *Journal of Agricultural Science*, 4(6), 171-179. <http://dx.doi.org/10.5539/jas.v4n6p171>
- Jackson, E.T. (2004). Community innovation through entrepreneurship: Grantmaking in Canadian community economic development. *Journal of the Community Development Society*, 35(1), 65-81. <https://doi.org/10.1080/15575330409490122>

- Kharrazi, A., Yu, Y., Jacob, A., Vora, N., & Fath, B.D. (2020). Redundancy, diversity, and modularity in network resilience: Applications for international trade and implications for public policy. *Current Research in Environmental Sustainability*, 2, 100006. <https://doi.org/10.1016/j.crsust.2020.06.001>
- Kurland, N.B., & McCaffrey, S.J. (2020). Community socioemotional wealth: Preservation, succession, and farming in Lancaster County, Pennsylvania. *Family Business Review*, 33(3), 244-264. <https://doi.org/10.1177/0894486520910876>
- Lampel, J., Honig, B., & Drori, I. (2014). Organizational ingenuity: Concept, processes and strategies. *Organization Studies*, 34(4), 465-482. <https://doi.org/10.1177/017084061452532>
- Leech, N.L., & Onwuegbuzie, A.J (2007). An array of qualitative data analysis tools: A call for data analysis triangulation. *School Psychology Quarterly*, 22(4), 557-584. <https://doi.org/10.1037/1045-3830.22.4.557>
- Lietz, C. A., & Zayas, L. E. (2010). Evaluating qualitative research for social work practitioners. *Advances in Social Work*, 11(2), 188-202. <https://doi.org/10.18060/589>
- Lounsbury, M., & Crumley, E. T. (2007). New practice creation: An institutional perspective on innovation. *Organization Studies*, 28(7), 993–1012. <https://doi.org/10.1177/0170840607078111>
- Luk, C.L., et al. (2008). The effects of social capital and organizational innovativeness in different institutional contexts. *Journal of International Business Studies*, 39(4), 589-612. <https://doi.org/10.1057/palgrave.jibs.8400373>
- Malterud, K. (2001). Qualitative research: Standards, challenges, and guidelines. *The Lancet*, 358(9280), 483- 488. [https://doi.org/10.1016/S0140-6736\(01\)05627-6](https://doi.org/10.1016/S0140-6736(01)05627-6)
- Mars, M.M. (2020a). From within the shadows of the everyday: Localized entrepreneurship and the dilemma of scale. *Community Development*, 51(5), 628-645. <https://doi.org/10.1080/15575330.2020.1825504>
- Mars, M.M. (2020b). Inter-organizational dynamics and the ecology of localized entrepreneurship. *Community Development*, 51(1), 53-71. <https://doi.org/10.1080/15575330.2020.1713835>
- Mars, M.M., & Schau, H.J. (2019). The jazziness of local food work: Organization level ingenuity and the entrepreneurial formation and evolution of local food systems. *Rural Sociology*, 84(2), 257-283. <https://doi.org/10.1111/ruso.12244>
- Mars, M.M. (2013). Framing the conceptual meaning and fundamental principles of innovation. In M.M. Mars & S. Hoskinson (Eds.), *A cross-disciplinary primer on the meaning and principles of innovation* (pp. 1-12). Emerald Group Publishing Limited.

- Maxwell, J.A. (2013). *Qualitative research design: An interactive approach* (3<sup>rd</sup> ed.). Sage.
- Miles, M.B., Huberman, A.M., & Saldaña, J. (2019). *Qualitative data analysis* (4<sup>th</sup> ed.). Sage.
- Mishra, A. K., El-Osta, H. S., & Shaik, S. (2010). Succession decisions in U.S. family farm businesses. *Journal of Agricultural and Resource Economics*, 35(1), 133–152.
- Moroney, A., O'Reilly, S., & O'Shaughnessy, M. (2016). Taking the leap and sustaining the journey: Diversification on the Irish family farm. *Journal of Agriculture, Food Systems, and Community Development*, 6(4), 103-123. <https://doi.org/10.5304/jafscd.2016.064.004>
- Orlikowski, W. (2000). Using technology and constituting structure: A practice lens for studying technology in organizations. *Organization Science*, 11(4), 404–428. <https://doi.org/10.1287/orsc.11.4.404.14600>
- Patton, M.Q. (2002). *Qualitative research & evaluation: Integrating theory and practice* (3<sup>rd</sup> ed.). Sage.
- Pérez, R.D.G., Sendra, M.J.M., & López-i-Gelats, F. (2020). Strategies and drivers determining the incorporation of young farmers into the livestock sector. *Journal of Rural Studies*, 78, 131-148. <https://doi.org/10.1016/j.jrurstud.2020.06.028>
- Plana-Farran, M., & Gallizo, J.L. (2021). The survival of family farms: Socioemotional wealth (SEW). *Agriculture*, 11(6), 520. <https://doi.org/10.3390/agriculture11060520>
- Rogers, E. M. (2003). *Diffusion of innovations* (5<sup>th</sup> ed.). Free Press.
- Ryan, M.E. (2009). Making visible the coding process: Using qualitative data software in a post-structural study. *Issues in Educational Research*, 19(2), 142–61.
- Smithers, J., & Johnson, P. (2004). The dynamics of family farming in North Huron County, Ontario. Part I. Development trajectories. *The Canadian Geographer*, 48(2), 191-209. <https://doi.org/10.1111/j.0008-3658.2004.00055.x>
- Spielman, D.J., Davis, K., Negash, M., & Ayele, G. (2011). Rural innovation systems and networks: Findings from a study of Ethiopian smallholders. *Agriculture and Human Values*, 28(2), 195-212. <https://doi.org/10.1007/s10460-010-9273-y>
- Suess-Reyes, J., & Fuetsch, E. (2016). The future of family farming: A literature review on innovation, sustainable and succession-oriented strategies. *Journal of Rural Studies*, 47(Part A), 117-140. <https://doi.org/10.1016/j.jrurstud.2016.07.008>
- Sundstrom, S.M., & Allen, C.R. (2019). The adaptive cycle: More than a metaphor. *Ecological Complexity*, 39, 100767. <https://doi.org/10.1016/j.ecocom.2019.100767>

- Taneja, S., Pryor, M.G., & Hayek, M. (2016). Leaping innovation barriers to small business longevity. *Journal of Business Strategy*, 37(3), 44-51. <https://doi.org/10.1108/JBS-12014-0145>
- USDA. (n.d.). *National Institute of Food and Agriculture*. Family Farms | National Institute of Food and Agriculture. Retrieved June 24, 2022 from <https://nifa.usda.gov/family-farms>
- Venkatesh, V., Morris, M.G., Davis, G.B., & Davis, F.D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly*, 27(3), 425–478. <https://doi.org/10.2307/30036540>
- Venkatesh, V., Thong, J. Y., & Xu, X. (2012). Consumer acceptance and use of information technology: extending the unified theory of acceptance and use of technology. *MIS Quarterly*, 36(1), 157-178. <https://doi.org/10.2307/41410412>
- Walker, B., Holling, C.S., Carpenter, S.R., & Kinzig, A. (2004). Resilience, adaptability and transformability in social-ecological systems. *Ecology and Society*, 9(2), <http://www.jstor.org/stable/26267673>
- Walker, B., Sayer, J., Andrew, N.L., & Campbell, B. (2010). Should enhanced resilience be an objective of natural resource management research for developing countries? *Crop Science*, 50(S1), S-10-S-19. <https://doi.org/10.2135/cropsci2009.10.0565>
- Whitt, P. B., Bailey, B., & Harris, M. (2021, July 29). A Look at America's Family Farms. Retrieved June 24, 2022 from <https://www.usda.gov/media/blog/2020/01/23/look-america-family-farms>
- Worstell, J. (2020). Ecological resilience of food systems in response to the COVID-19 crisis. *Journal of Agriculture, Food Systems, and Community Development*, 9(3), 23-30. <https://doi.org/10.5304/jafscd.2020.093.015>
- Worstell, J., & Green, J. (2017). Eight qualities of resilient food systems: Toward a sustainability/resilience index. *Journal of Agriculture, Food Systems, and Community Development*, 7(3), 23–41. <http://dx.doi.org/10.5304/jafscd.2017.073.001>
- Yin, RK (2008). *Case study research: Design and methods*. Sage.