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Local ownership of ethanol plants: What are the effects on communities?

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ABSTRACT

The rapid expansion of ethanol plants across the U.S. state of Iowa has fueled debate about the burdens and benefits of local (in-state investors) versus non-local ownership of biorefineries. Central to these concerns is the extent to which non-local, absentee owners might reap the benefits of the ethanol industry at the expense of local communities. A key argument within the rural development literature is that local ownership of firms has a positive effect on the long-term well-being and sustainability of the communities in which they are situated. This literature asserts that firms operate at different scales, with local firms embedded within local supply chains and institutions, and non-local firms embedded within national and international networks and institutions. Conversely, there is a growing body of work within the alternative agrifood systems literature that cautions against the 'local trap'; the assumption that the local scale is inherently good and therefore advantageous. Despite this broader debate, the literature on local ownership and renewable energy remains limited. This paper addresses this gap by drawing on case study research of the community effects of ethanol plant ownership structure from the perspective of community leaders. My findings suggest that differences between the structure and effects of local versus non-local ownership of firms on communities are rather more ambiguous than the literature asserts. Therefore, assumptions about the benefits of local ownership may be overstated and concepts of 'local' and 'non-local' may be inadequate for considering firm outcomes on the civic welfare and socioeconomic well-being of a community.

1. Introduction

In Iowa, the United States leader in ethanol production, the rapid expansion of ethanol plants has fueled debate among scholars and the public about the burdens and benefits of local (in-state investors) versus non-local (out-of-state or foreign corporate investors) ownership of biorefineries for rural communities [1–3]. Early development of the industry was spearheaded by farmer-owned cooperatives who built plants as a means to secure a market for local corn and add value to their agricultural products. Individual processors also played an important role, whereby local business people and wealthier individuals invested in plants [4]. In 2007, more than half of Iowa's 26 existing ethanol refineries were locally-owned. However, as the industry has expanded ownership has began to shift as major agribusiness companies and others, such as Cargill and Poet, have sought to take advantage of government subsidies for biofuels, the growth in national demand for ethanol, and its growing investor returns.

This shift has raised broader concerns —not just in the US but around the globe— about the extent to which out-of-state or corporate investors might reap the benefits of ethanol

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production at the expense of local communities [1–3,5]. A key argument within the international rural development literature is that local ownership of firms has a positive effect on the long-term well-being and sustainability of the communities in which they are situated [6–10]. This literature asserts that firms operate at different scales, with local firms embedded within local supply chains and institutions, and non-local firms embedded within national and international networks and institutions. Conversely, there is a growing body of work within the alternative agrifood systems literature that cautions against the 'local trap'; the assumption that the local scale is inherently good and therefore advantageous [11–17]. Despite this broader debate, the literature on local ownership and renewable energy remains limited [18]. This paper addresses this gap by drawing on case study research of the community effects of ethanol plant ownership structure from the perspective of community leaders. My findings suggest that differences between the structure and effects of local versus non-local ownership of firms on communities are rather more ambiguous than the literature implies. Therefore, I conclude that assumptions about the benefits of local ownership may be overstated and concepts of 'local' and 'non-local' may be inadequate for considering firm outcomes on the civic welfare and socioeconomic well-being of a community.

2. Local ownership and the community

The perspective that local ownership of firms has a positive effect on communities is based on several important assumptions. In particular, local ownership is viewed as fundamentally different in its organization and structure than non-local ownership due to the geographical scale and location of the firm and its supply chain. Non-local firms are embedded within —and benefit from— supply chains, institutions and organizational networks that are national and international. In contrast, local firms are associated with regional trade associations and a high level of integration and embeddedness within local community structures and organizations [7,10].

Scale and level of embeddedness then has important implications for local development [6,7,10]. In contrast to local industrialists and business owners, non-local firms are less involved and less interested in the day-to-day concerns and issues that affect the community and therefore do not invest in the local community [10]. Consequently, local exploitation of people and communities increases when firms are embedded within national or global economic and political systems since the firm's economic commitments lie outside the community [10,19]. Pointing to the coal mining communities of Appalachia among others, Lyson and Tolbert [7] argue that large corporations disrupt local economies since such businesses emphasize economic principles of efficiency, productivity, the free market and low costs.

Locally-owned businesses are then cast as a counterpoint to non-local businesses beholden to the neoclassical marketplace. Since locally-owned firms are embedded within the local community and economic structures they are in a better position to protect communities from the negative aspects of the market economy [7]. Moreover, local owner's "shared commitment to place" ([11], p. 171) allow them to surmount different social or economic interests to ensure that decisions are made that will improve the socioeconomic and environmental well-being of a particular place. Local control of firms contributes to the building of 'civic community' [7], empowering communities by providing residents with the opportunity to participate in shaping systems of production in a manner that supports "local interests" ([6], p. 328). In sum, local ownership is a positive anti-dote to the disempowering and homogenizing effects of non-local ownership, which is associated with corporate control and the perils of the free market. Through supporting local businesses, communities can gain greater control over their economic destiny which will "contribute to rising levels of civic welfare and socioeconomic well-being, revitalize rural landscapes, improve environmental quality, and ultimately, promote long-term sustainability" ([7], p. 232–233).

Within this framework there is a propensity to cast the benefits of local ownership as 'win–win' for small towns. Conversely, there is a growing body of work within the alternative agrifood systems literature that cautions against the 'local trap'; the assumption that the local scale is inherently good and therefore advantageous [11–17]. These scholars argue that we need a more reflexive, critical engagement with the concept of localism and I believe that their effort to problematize this concept is relevant to the question of ethanol plant ownership.

One of their concerns is how local is typically offered as a counterpoint to non-local, creating "static, binary assumptions" ([12], p. 35) where it is presupposed that social, political, or economic relations are directly related to a particular spatial relationship, what some call "the local trap" [14,17]. From this binary position, one imagines a local economy that is or could be segregated from the national or global economy and its concomitant legal-political institutions. Freed from the binds of free market institutions and social relations, local firms are associated with processes that are "good, progressive and desirable" ([12], p. 33) while non-local firms are not. One of the problems with the creation and defense of these dichotomous relationships is that "desirable social or environmental outcomes may not always map neatly onto the spatial content of 'local'" and thus any equivocal outcomes may be obscured ([12], p. 33). Furthermore, the local trap masks the fact that local places are not homogeneous communities organized around shared community interests. Nor can we assume that local social relations are inherently more just within communities or that greater levels of democracy and participation exist [11,12].

3. Methods

To investigate claims about the value of local ownership further, this paper utilizes a case study of ethanol plant ownership structure and its burdens and benefits to a community from the perspective of community leaders [20,21]. The city of Nevada (population 6658) is located at 42°01′09″N 93°27′06″W; 60 km Northeast of the state capital of Des Moines, Iowa. Nevada, Iowa was selected as the case study site on the basis that it had an existing biorefinery, Lincolnway Energy, LLC (LWE), and this plant was locally-

owned. The sample of case study participants was purposive rather than random [21,22]; 13 community and business leaders from Nevada were selected because they were considered knowledgeable about the plant's relationship to the community. The timeframe for this case was from March, 2004, when building the plant was first proposed, until the time of the interviews, which ranged from 24 to 30 months after the plant began operating.

In-depth, semi-structured interviews lasting an average of 1 h were conducted with each key informant between January 2008 and January 2009. Broadly, participants were asked a range of questions concerning LWE's role in the community and to identify what they perceived as the key costs and benefits of LWE to their community and how ownership structure had mediated these effects. The interviews were recorded, transcribed, coded using NVivo, and then analyzed. My goal was not to produce counts of responses but to rearrange the data into categories using codes that allowed me to identify major themes from the interviews [23,24]. The data were analyzed using the categories: economic effects, political effects, environmental issues, and ownership effects. Each category was then coded in relation to whether the tone of the effect was positive, negative, or neutral.

Contextualizing the case is critical to case study analysis [21] and in the next section my objective is twofold, first, to describe the development of LWE's ownership structure and second, to provide an overview of the public discourse that was used to advocate local ownership and its value to the community. The timeframe for this background is from the time LWE was proposed until the plant opened. In the following results section, I present the key themes from participants in terms of how they perceive the main benefits and burdens of LWE to their community and the role that local ownership played in this process. In the next section, I discuss how the results from this case suggest that assumptions about local ownership in the development literature may be overstated and thereby conclude that concepts of 'local' and 'non-local' are limited in their ability to help assess a firm's contribution to the welfare and well-being of a community.

4. Constructing a locally-owned ethanol plant

> "We've got a community-owned plant with no big outside guns to control the board," William Couser [25].

LWE was originally conceived as an ethanol plant that would be built, owned and controlled by the farmer-owned grain cooperative, Heart of Iowa Co-op (HOIC), which began considering the idea when rumors were circulating that a non-Iowa based company was thinking of building an ethanol plant in Nevada [25]. William Couser —a prominent, large-scale local farmer, who would later become LWE's first president— and others at HOIC organized a counter-effort to establish their own plant and in March 2004, the Lincolnway Energy Cooperative was established. The impetus for establishing the biorefinery was to strengthen the economic viability of HOIC and its members by providing a guaranteed market for their corn [26]. Their ambition was short-lived however. To be competitive, HOIC wanted a 189 $dam^3\ y^{-1}$ plant to match the size of most other new plants coming on line. The problem was that with a price tag of 83 M$, considerably more capital upfront was required than local farmers could provide [27,28]. The co-op's board of directors decided to change the ownership structure from a co-op, where under state law only farmers could invest, to a limited liability company (LLC), which allows any individual to invest and thereby share in the profits and on May 18, 2004 LWE was established. LWE directors decided to restrict investment to Iowans with no single shareholder able to own more than two percent of the outstanding units (shares) for sale [27]. They argued extensively in the press that this decision was to ensure that the plant would "be locally-owned and controlled" [29] and to ensure that profits did not "leave the community" [27].

LWE obtained US$44 million through grants and financing towards the cost of building their plant with the remaining 39 M$ to come from shareholders [30]. To raise the capital, a five week equity drive was launched with some 58 public meetings held across 14 counties. Remarks by LWE board members and its proponents about local investment opportunities were extensive. At these public meetings and in the local press, they emphasized that the plant would provide the local community with the opportunity to own, control, and profit from a business owned by themselves. Local ownership would ensure that "the whole community [was] involved" and "allow the community to share in the returns" [27,31]. Couser explained that "We've tried to set this up so anyone can invest, from main street business owners to farmers, business owners and regular working class people" [31]. An individual unit was valued at 1000 $ and the minimum investment required was 25 units. In just 53 days all 42,049 units on offer were sold [32]. Investors came from 66 of Iowa's 99 counties, with the majority from mid-Iowa, but only 11.5 percent from Nevada itself [33]. Once the plant began operations the Board decided that some shares could be sold to out-of-state investors, however, all sales would still require their approval to ensure local control.

LWE began operating on May 22, 2006. In addition to ethanol, dried distillers grains (DDGs), an important byproduct of ethanol production used as livestock feed, are also an important source of revenue. During the last fiscal year, which ended September 30, 2008, almost 17 percent of the plant's revenue came from the 118,842 tonne of DDGs it had produced. LWE pays two marketing companies to sell its ethanol and DDGs. Renewable Products Marketing Group (RPMG) purchases LWE's ethanol which is on sold to a handful of ethanol customers, including Shell and BP, while LWE's DDGs are marketed nationally and internationally by Hawkeye Gold, LLC [34].

The City of Nevada played a central role in LWE's development. In particular, the Nevada Economic Development Council (NEDC) worked to organize a range of economic incentives for LWE. The NEDC is made up of 15 board members —including Couser— who are business owners or managers within the community. The NEDC typically plays a leadership role in recruiting firms to the town and working with them to access local and state government development grants and other financial incentives [35]. Since most of the incentives that the NEDC offers new businesses involve public monies it works closely with Nevada's City Council before finalizing any deal.

The first challenge for the NEDC was to work with the city to annex some privately owned land that existed between Nevada and the plant's proposed location, 4 km west of the town. For LWE to access the city's services and financial incentives the plant needed to be within city limits and city land must be contiguous. Once the city had annexed the land the area was converted into an urban renewal tax increment financing (TIF) district. TIF is a mechanism designed to spur economic growth and development [37]. When an area has been designated as a TIF district the taxable value of the area is fixed at the value it was assessed at on the day of declaration. This is the tax *base* available to the city, county, and school district to tax from. For a pre-determined number of years, only the city —in this case Nevada— is able to collect taxes based on *the increment*. The increment is the additional value that is created as a result of further commercial development within the area. Importantly, however, these funds cannot be used for general purposes; they can only be used within the TIF district to pay for further development [38]. Annexation allows LWE to access essential municipal services such as "three phase electrical service, ample and inexpensive water supply, waste water discharge" and fire protection [36]. The city provided road and water improvements that the plant required at a cost of 1.2 M$ and it purchased a new 610 k$ platform fire truck equipped with technology necessary for extinguishing fuel fires [37,39]. In addition, all four city council members approved a 20-year property tax abatement agreement with LWE. The agreement authorizes a tax abatement of the assessed valuation of 75 percent for the first year, 60 percent for the second year, 45 percent for the third year, and 37 percent for the fourth to twentieth year [40].

5. Distributing the burdens and benefits: what difference does local ownership make?

As discussed above, the impetus to establish LWE was to strengthen the economic viability of HOIC farmers and from the perspective of participants in this study, the major beneficiaries of LWE are the local corn growers. Since HOIC was involved in the development of LWE it was well positioned to negotiate and then sign a 20-year contract with LWE to be the sole supplier of corn to the plant for which the co-op is paid a flat fee of 2.66 $ t^{-1} of corn. This agreement is perceived as mutually beneficial since it provides HOIC suppliers with a guaranteed market for their corn and since the cost of corn accounts for approximately 85–90 percent of all raw material costs needed to keep LWE in production, it minimizes one of the plants main operational risks [41]. In addition, ethanol plants in general have benefited farmers since the addition of a major new market for corn has helped drive up the price farmers receive for their corn. As one plant official explained:

> *Last year LWE bought 15 million bushels of corn* [1 bushel is equivalent to 0.0254 tonne] *US$2 a bushel higher than what farmers used to get so this gave US$30 million extra back to farmers. The more corn one grows, the greater the benefits. This income has not only increased income for farmers but also motivated some farmers who were considering leaving to stay instead.*

Participants from both the plant and the co-op explained that local ownership did not eliminate the tensions that can exist between two business organizations trying to get the best deal for its members. On the one hand, some participants directly involved believed that long-standing relationships among representatives of LWE and HOIC ensured that negotiations were always conducted in good faith. On the other hand, another participant explained that the interests of investors did not necessarily coincide with those of farmers:

> *The LLC in Nevada has an advantage because the local investors, a lot of them are friends professionally and personally, but again you could have a [University] professor that says I want to do whatever I can to make the most money out of the plant.*

Participants also viewed investors as major beneficiaries of the locally-owned LWE. At the time of the interviews, investors had received very good returns on their investment. For example, the first cash distribution in December, 2006 was 150 $ unit − 1, which meant that if you had invested the minimum of US$25,000 your return was US$3750. The second cash distribution in May, 2007 was US$200 per unit, in November, 2007 US$125 per unit, and in June, 2008 US$249.86 per unit [42]. The decision by LWE to use coal as its energy source, which is much cheaper than natural gas, was identified by several participants as one of the key reasons for these good returns. In addition, individual investors also received federal and state tax credits, which were developed to encourage investment in renewable fuels. One participant said "there were some good tax breaks on it too…I can't remember what the tax benefits were, but they were substantial… I know the first year I got all my state tax back."

Participants explained that during LWE's equity drive there was a lot of support and expectations within Nevada concerning the plant. One city official said that during this period "a lot of excitement was created, LWE was seen as a real opportunity for people and the town." While the majority of participants thought that farmers and individual investors had benefited, their assessment 2 years later on of LWE's value to the rest of the community was rather more subdued. First, participants believed that the benefits to the community were limited because there was no evidence that the financial rewards to farmers and investors had trickled down into the community. As one city official said "We can't say that we've seen any increase in business associated with LWE. Nevada is not a commercial town – people go to Ames to shop and spend their money." Similarly, another official said "Farmers are going to farm, are going to buy new equipment regardless of whether there is an ethanol plant here."

Second, participants believed that the benefits to the community were limited because employment opportunities at the plant were less than expected. Most participants explained that when the plant was initially proposed, their main hope was that it would benefit the community by providing a large number of good quality jobs, which would attract new people to Nevada and encourage young people to stay. As one participant put it "It was all the buzz when the plant was proposed, everyone was for it, I was even for it. I thought it would be a big boost, but it ends up that it's not a big employment opportunity." The demand for jobs in the area was demonstrated during a two-day job fair that LWE held in Nevada where more

than 300 people applied for full-time positions at the plant. While hundreds of workers were involved during the construction phase, most of them were itinerant workers who only provided a short-term boost to the local economy [43]. However, once LWE was up and running only 35 permanent positions were available [43]. In a context where communities across Iowa are losing population participants were appreciative of these new employment opportunities. Nevertheless, since the job numbers were relatively small and a number of them went to locals who were previously commuting elsewhere to work, participants did not believe that LWE could significantly impact growth in the local schools or turn around the long-term decline of Main Street.

The third reservation participants expressed about LWE's ability to benefit the wider community was that the plant had not stimulated any additional economic development in the town. One city official explained that the direct benefits to Nevada of ethanol and its byproduct DDGs are limited because they are produced for the national market rather than local consumption. He said "In theory, [LWE] should attract some additional cattle feeding operations, that has not happened. Today, most of the DDGs are actually being shipped out of the area." Regarding LWE, he went on to argue:

> *Its impact is not more or less than any other [company]. Basically, it's a tax giver to the community – it provides a tax base that is necessary to provide services to the residents. When the ethanol plant is built you get an influx of workers and a short-term economic boost. Ultimately, once it's up and running it has no other impact other than tax wise – at least with the city we've seen very little impact.*
> *So to say that ethanol is playing a huge role in economic stimulus in the area, I would say no. Their product goes out of state. It would be different if the ethanol plants were able to utilize what they manufacture locally and drive the costs down, for example, an outlet for ethanol here. They would have more of an economic impact if we had ethanol dumping right into the user here locally. If the price was lower it would lower transportation costs and create some [economic] stimulus.*

For the most part, participants did not think that LWE had any overt negative affects on the community. Nevertheless, three concerns were identified by multiple participants. The first concern was whether LWE's decision to use coal was detrimental to the well-being of the community and its environment. One business leader commented:

> *I would say that [the community] still view LWE in a positive way, just not as positive as they did and the concern is LWE is a coal fired facility, which is getting to have more and more play as relative to what does this coal do to the environment, are there any concerns relative to air quality, water quality?*

Second, several participants felt that the influence of those with a direct stake in the success of LWE, especially shareholders, has acted to quell any public debate about the potentially negative effects of the plant. One participant explained that when he had publicly expressed concerns about LWE's use of coal —among other things— he was pressured by investors in the plant to halt his critique. He said:

> *There are a lot of investors here…. But you know if they can't bear the truth, about the production of the product, it's not clean… The people that are invested heavily in it don't like to hear that stuff because of course it is going to get into their pocketbook eventually.*

The third —a more explicit critique— is that in contrast to other businesses LWE is not sufficiently involved in the community. For example, LWE is one of the few firms in Nevada that does not participate in local community fundraising activities. One business leader described his disappointment that "[LWE] have not really gotten real involved with supporting the community yet, they keep talking about maybe there will be some corporate donations." Another participant whose organization depends on contributions from the business community explained his surprise and frustration when LWE refused to contribute:

> *It is frustrating because we have this business in town that is making a good profit and they won't support the special things we do. So from a business stand point I am kind of like wow! I mean I looked at that coming in like anybody [in my business] would – as hopefully another source of revenue.*

According to this participant, both local and non-local companies typically contribute, however, LWE had used the fact that many of its investors are *not* local to justify its position. He continued "I have been told by [LWE] management that [they do not contribute] because their investors are from other places too and they don't feel it is fair to spend people's money in Nevada when not everyone is from Nevada."

Finally, in terms of the effects of local ownership, no one identified any specific contribution that it had made to the community. One city official argued that ownership structure was irrelevant to how the burdens and benefits of the ethanol plant were distributed within Nevada.

> *From the perspective of a community [ownership structure] is irrelevant. For local investors it's an excellent idea, so for individuals it's wonderful. But we treat it the same. Money travels in many circles and usually the returns from investment is reinvested so you don't see returns spent locally. Ownership is irrelevant, local people could be investing in a New York company producing widgets and then spend their money.*

According to participants, ownership structure played no role in the economic development process. For example, in terms of the city's economic incentive package, a participant explained "We do not determine the incentives based on ownership structure. The key issue we consider is is the business a good fit for our community? We believe that LWE is a good fit." Decisions made regarding the development of LWE and what costs would be borne by the community followed the standard blueprint for local economic development whereby discussions for the most part were conducted between the NEDC and the City Council. For example, the property tax abatement agreement with LLE was proposed and carried unanimously by the four city council officials at their regular monthly meeting. Participants explained (and the absence of any newspaper reports verified) that no public

meetings were organized to garner public input into LWE's development or how the costs and benefits would be distributed. As one interviewee explained:

> *There was never any public forum about it. Obviously we did hear stories. Bill Couser, who is big in this, was very vocal about the fact that this was going to be good for farmers, this was going to be good for local people, jobs and all of that. And then of course they held the investment meeting and…a large number of people in this area that were interested in investing saw this as an opportunity for their own economic gain.*

6. Discussion

Within the literature on rural development, a key assertion is that locally-owned firms are fundamentally different than non-locally-owned firms, which has important outcomes for communities. LWE's proponents similarly played on this dichotomy in their public discourse, emphasizing that their "community-owned plant" would ensure local control, community involvement, and local benefits. However, the interview results suggest that these assertions may be overstated. Participants certainly supported LWE and thought that it had provided important benefits to sectors of the community, especially corn farmers and investors, as well as employment within the plant (although far less than hoped for). Yet, for the most part, participants could not identify any of the broader benefits to the community that are emphasized in the development literature or LWE's public statements. The main theme that emerged here is that —beyond the opportunities presented to individual farmers and investors— participants did not consider that local ownership had influenced company practices or its socioeconomic impacts within the community.

The irrelevance of local ownership to participants suggests that in terms of the ethanol industry the structure and organization of local and non-local plants may be less dissimilar than assumed in the literature. The development literature cited above asserts that firms operate at different scales, with local firms embedded within local supply chains and institutions, and non-local firms embedded within national and international networks and institutions. However, this assertion is problematic since within the context of contemporary capitalism locally-owned ethanol firms do not operate in a vacuum separate and disconnected from national and global processes [15]. Ethanol is currently produced largely as a fuel additive for petroleum. Consequently, rather than local supply chains, LWE is intrinsically embedded within the national petroleum network because the major customers for ethanol are the handful of global corporations, such as Shell or BP, who have the capacity to blend the two products for the national market. Since ethanol is not an 'independent' energy product it cannot —as one participant explained above— be bought and sold locally as a cheap energy source to benefit residents or the local economy. As a small player within a vast supply chain over which it has little control, LWE is also constrained in its ability to set prices. Subsequently, the price offered to local corn suppliers and the returns to investors is shaped less by LWE than by major oil conglomerates, global oil prices, and government ethanol policy.

The results also challenge the assumption that who benefits from business development is strongly shaped by ownership structure. Within the literature, the practices of firms that are not locally-owned benefit outside investors —often at the expense of the local community— while the practices of firms that are locally-owned benefit the entire community. During its equity drive, LWE's discourse concerning who could invest and benefit was decidedly egalitarian and community centric. Rather than benefit the entire community, however, local ownership may act to reinforce the economic and social power of "local elites at the expense of other local actors" ([11] p. 20). While anyone from Nevada had the opportunity to invest, eligibility is not the same thing as ability to invest. In other words, 'community involvement' and 'local control' in LWE was limited to approximately 135 individuals from Nevada who had the financial resources to invest —and were prepared to lose (ethanol is considered a high-risk investment)— US$25,000, [33]. Ironically too, perhaps, local ownership was used as the rationale by LWE to not contribute to the community. In this case, the majority of local investors came from outside of Nevada and LWE officials were reluctant to invest in community projects since these projects would not necessarily reflect the concerns and interests of their investors outside of Nevada.

Proponents of local ownership assume that local places are homogeneous communities organized around shared community interests [11,44]. However, a fundamental principle of firms is that shareholders are legally entitled to a bundle of economic rights to benefit from the plant that may or may not be compatible with the opportunities or interests of other members of the community [45,46]. The decision by LWE not to sell DDGs in the local market highlights this potential conflict of interest. While there is no local market for ethanol, there is —or could be— a local market for DDGs. However, to ensure the best returns to its shareholders, LWE sells its DDGs to a firm that markets the product wherever it can get the best returns nationally or internationally. This was disappointing to one community leader since the sale of DDGs locally could benefit local livestock producers by reducing their input costs. Low-cost feed could also contribute to rural economic development by encouraging other livestock, diary or poultry producers to the area. In another example, LWE is one of the few ethanol plants in the country using coal rather than natural gas to reduce its costs. On the one hand, this decision was celebrated by one community leader as being a primary factor in ensuring good returns to shareholders while on the other hand, it had raised some disquiet among several participants about the possible negative effects of coal on the environment and health of Nevada's residents. The absence of shared interests was evident when certain investors acted to quell public critique of LWE's use of coal, which they felt was a threat to their financial interests.

Similarly, the economic incentives provided by the city may have benefited LWE's shareholders by enhancing the plant's profitability but the value to the community is less clear. Typically, economic incentives are used by cities to attract a firm that might be tempted to locate elsewhere. However, LWE's Board had chosen Nevada precisely because its agricultural landscape and suitable transportation infrastructure made it ideal for profitable ethanol production [36]. In this case, the tax abatement and other supports were given

to LWE despite the fact that the Board had made it clear from the outset that the plant was not going to locate elsewhere.

Economic development always involves various tradeoffs, however, it is not clear that Nevada's residents were made aware of what these would be. While proponents argue that local ownership provides a basis for greater voice and control by the community the evidence here suggests that simply changing the spatial scale does not necessarily mean that all voices will have the opportunity to be heard. Allan [11] and Hinrichs [12] argue that we cannot assume that greater levels of democracy and participation exist within communities since long standing social hierarchies can mean that local communities are less a place for different voices to be heard. In this case, the development of LWE proceeded in a 'business as usual' manner where the major discussions were organized between NEDC, LWE and the city council. While meetings for investors were organized, there were no special public forums arranged where residents were encouraged to discuss, for example, what economic incentives the city should provide the plant, what specific benefits the community could expect to see, what costs the community were expected to bear, or what the pros and cons of using coal might be.

7. Conclusion

Within the energy sector, the rapid expansion in ethanol production over the past half decade has fueled concerns about the consequences for rural communities of biorefineries that are not locally-owned. In the literature on rural development, the degree of local ownership is often the barometer used to measure civic welfare and socioeconomic well-being within the community. In contrast, in terms of food production, some agrifood scholars caution against the 'local trap,' the assumption that the local is more socially just and environmentally sustainable. This study contributes to this debate by grounding these concepts in the area of renewable energy. While the energy sector is of growing importance to rural communities little is known about the relationship between ownership structure and community welfare. The objective of this qualitative case study was to interrogate these assumptions from the perspective of community leaders close to the process. This approach provides a way to incorporate *meaning* [20], that is, how do these participants understand, view, or interpret the effects of local ownership on their community.

My results suggest that any difference between the structure and effects of local versus non-local ownership of firms on communities is rather more ambiguous than the literature suggests. From the perspective of community and business leaders in this case study, the specific value to the residents of Nevada of a locally-owned ethanol plant is not that apparent. While participants understood LWE to have benefited corn farmers, investors and their employees in particular —and thus bought some overall value to the community— the belief was that these benefits were no more nor less than any other LLC would provide. Participants were unable to identify any of the features identified in the literature as evidence of local firms geographically bounded in, and therefore morally bounded to, the community in which they are situated. The results here then suggest that the concepts of local and non-local may be inadequate for measuring outcomes, such as civic community, since the benefits of ownership and its effects on communities may not correspond easily onto these counterposed categories.

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