

Generic solutions to coordination and organizational costs: informing cooperative longevity

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RESEARCH ARTICLE

Abstract

For years, scholars and policy makers have argued that cooperatives, particularly agricultural cooperatives, exhibit organizational inefficiencies primarily caused by individual member behavior that is often independent and non-cooperative conflicting with the formation of effective coalition building. This free riding tendency creates significant challenges for a continued joint collaboration between and among member patrons. Yet, agricultural cooperatives have a long history of surviving as successful business enterprises. This paper presents a framework that proposes generic solutions effective as design principles in addressing the negative consequences of high organization costs, thus leading to sustainable common group interest activities.

Keywords: agricultural cooperatives, netchains, organization, ownership, solutions

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1. Introduction

Over the decades cooperatives have played varying roles in different countries, economic and social service sectors, and among multiple income groups. In agriculture, producers primarily in Europe and North America formed cooperatives to assist their efforts as small self-sufficient family farm enterprises to achieve economies of scale and ameliorate the negative consequences of buyer and seller spatial monopolies/monopsonies.

Public policy makers recognized the positive impacts this organizational form had on the livelihoods of agricultural producers, their communities, and consumers through improved coordination among participants at various levels in the value chain. The result, national, state, and provincial laws were enacted permitting or facilitating the continued emergence of a new organizational form. Embedded in these legislative outputs were cooperative principles, whether Rochdale, Raiffeisen, or hybrid. These laws enabled producers to organize requiring adherence to certain practices which can be summarized briefly as affecting the residual control and residual claim rights of

cooperative patrons. In general these rights restricted control rights of cooperatives member/patrons to the democratic practice of one person-one vote and residual claim distribution to members in proportion to patronage instead of in proportion to investment. These institutionalized requirements created a commercial framework that defined the purpose of this type of organization to primarily serve the interests of the patron in contrast to the investor.

The cooperative incorporation statutes created an intra-organization incentive structure different from the joint stock, Limited-liability Corporation. These differences, which had changed the business world since their adoption in the mid-1800s shifted organizational cost mechanisms by hypothetically lowering market contracting costs but simultaneously increasing the probability of augmenting ownership costs, more specifically, agency, collective decision making and risk bearing costs. The focus of this paper is to develop a conceptual framework, which facilitates analysis-informing minimization of ownership costs in agricultural cooperatives.

We draw on a broad range of empirical studies, research cases, teaching cases, speeches, and cooperative internal documents to postulate a diagnostic path to identifying a set of generic solutions or adjustments to the continual dynamics of patron demographics and preferences. We propose these solutions, adjustments, and adaptations contribute to maintaining or enhancing cooperative health. Diagnosis of the symptoms and understanding of the causes contribute to our attempt to explain the longevity of successful cooperative enterprises in the agricultural sector. Additionally we propose that addressing the symptoms and causes of the higher ownership costs by administering generic solutions discussed in this paper lead cooperatives to become chain leaders.

Contemporary research on the outcomes of diverse institutional and organizational arrangements for governing cooperatives is shifting toward the examination of intra-firm coordination. This advancement requires complementing 'the market' intra-firm coordination studies informed by neoclassical models by introducing new institutional and behavior economic paradigms. This paper continues this more recent scholarly trend by introducing insights into more complex challenges and puzzles of formalized collective action, particularly in the area of producer owned and controlled collective action.

2. Organizational costs

Hansmann's theory of enterprise ownership identifies two types of costs: market contracting costs and ownership costs (Hansmann, 1996). We call the sum of these two sets of costs, *organizational costs*. Hansmann argues that the assignment of ownership to a particular subgroup of the firm's patrons is intended to minimize these organizational costs. The economic logic behind this argument is that market contracting costs and ownership costs usually move in opposite directions. The group of patrons that balances the two effects owns the enterprise.

Market contracting costs arise due to several types of market imperfections well known to students of organizational economics. These include:

- *Simple market power*: When a firm is in a position of power vis-à-vis one or more groups of its patrons, assigning ownership of the firm to that group of patrons will solve the problems of price exploitation and under consumption of the produced good.
- *Ex post market power ('lock-in')*: This market imperfection arises when the patron, upon entering the relationship with the firm, must make substantial transaction-specific investments where writing a complete contract is

infeasible. In such circumstances, after the patron begins to patronize the firm, she cannot exit costlessly even if the firm seeks to exploit her.

- *The risks of long-term contracting*: When a firm and its patrons enter a long-term contract, changing conditions during the term of the contract can produce an unpredicted, substantial gain for one party and a corresponding loss for the other.
- *Asymmetric information*: When either the firm or its patrons have private information that bears importantly on transactions between them, contracting can be costly.
- *Strategic bargaining*: This market contracting cost also arises due to asymmetric information. When either side of the transaction does not reveal crucial information even when both would gain from disclosing that information, costly strategic bargaining is highly possible.
- *Communication of patron preferences*: When patrons cannot credibly communicate their preferences to designated agents, inefficiencies may arise beyond the costs of strategic bargaining.
- *Compromising among diverse patron preferences*: Market contracting provides firms with incentives to accommodate the preferences of the marginal patron. Nevertheless, efficiency is maximized when the firm's choices are adapted to the preferences of the average patron.
- *Alienation*: Not all individuals enjoy the adversarial process of market contracting; some find it highly unpleasant to obtain or provide goods through this process and, instead, prefer some type of ownership relationship with the firm.

By making a particular group of patrons the owners of the firm the aforementioned costs are minimized. However, this is not the end of the story; ownership carries its own costs. Market contracting costs provide the economic justification for user-driven collective entrepreneurship in food supply chains. Once ownership is assigned, however, managing ownership costs is critical to achieving sustainability and a competitive edge. Thus we turn now to defining and analysing the three types of ownership costs.

Risk bearing costs are associated with the right to residual earnings conveyed by ownership of the firm. Hansmann is silent about the importance of risk bearing costs in assigning ownership. Yet risk bearing costs are of critical importance, particularly in cooperatives due to the so-called vaguely defined property rights of these business organizations. The method of allocation of risk bearing costs influences, among other things, a cooperative's ability to attract risk capital (Cook and Iliopoulos, 2000). More generally, optimizing ownership costs requires that risk-bearing costs be incurred

proportionally by current patrons of the firm who receive the corresponding residual earnings. In many instances this condition is violated and cooperatives seek appropriate remedies (Staatz, 1987).

The agency costs arising from the divergence of interests between principals and agents create the need to monitor management efficiently. Controlling managers is associated with significant costs incurred by patrons of a firm. These include the costs of monitoring management and, in case monitoring is not performed satisfactorily, the resulting costs of managerial opportunism. Efficient monitoring of the management requires that the patron-owners inform themselves about the operations of the firm, communicate among themselves in order to exchange information and make decisions, and bring their consensual decisions to bear on the firm's management. The resulting monitoring costs will be inversely proportional to the importance, frequency, and duration of the patrons' transactions with the firm. These costs will also depend on the ease of organizing the patron-owners for collective action that, in turn, depends on factors such as the patrons' physical proximity to one another and to the firm.

As the number of owners grows, the share of each individual owner of the potential gains from effective monitoring decreases, resulting in reduced incentives to monitor the management. The paradox of firms with a large number of owners is explained by Hansmann by asserting that either or both of two things must happen: (1) the costs of market contracting would be much higher under any alternative ownership arrangement; (2) the costs of managerial opportunism are modest even though the firm's owners cannot actively supervise the managers (Hansmann, 1996).

Collective decision making costs follow from the heterogeneity of interests among the firm's owners. This divergence of interests results from differences in the way in which patron-owners transact with the firm or as a result of differences in personal circumstances. Collective decision making costs arise with the adoption of costly processes to address patron interest heterogeneity and/or inefficient decisions that fail to maximize the aggregate welfare of the owners as a group. Poor decisions arise in a number of ways. For example, through the adoption of inefficient voting systems, which fail to select outcomes preferred by the average owner or result in control of the firm falling into the hands of an unrepresentative minority.

Collective decision-making costs may also be the outcome of the process of decision making itself. First, an owner may bear significant costs to obtain knowledge about

the firm and the preferences of other owners, and also to attend meetings and related activities necessary to reach and implement effective decisions. Second, voting cycles among alternative options are yet another source of process-related collective decision making costs. As preferences among patrons become increasingly heterogeneous the incidence of voting cycles increases. Further, voting cycles may result in extraordinary power being seized by a subset of patron-owners who do not care about the efficiency of decision outcomes. Finally, in the case owners behave strategically, additional costs may result from the efforts to hide or discover information or to make or break coalitions.

Various methods may be used to reduce the costs of decision-making processes. Hansmann (1996) proposes the delegation of authority to committees as a means of trimming down the costs of participation, inhibiting voting cycles, and facilitating logrolling that would mitigate the median voter problem. He goes even further by arguing that even in the case of highly heterogeneous member interests collective decision making costs may be kept low if a simple and salient criterion for balancing those interests is adopted. Figure 1 summarizes and depicts the abovementioned types of organizational costs.

Not all cooperatives manage to minimize organizational costs. Those that persistently fail to do so might incur very high organizational costs that will eventually destroy the commercial viability of the organization. While no reliable metric of a cooperative's health has been proposed in the literature, several symptoms might serve as indicators of deteriorating health. These include, but are not limited to, the evolution to dysfunctional governance, hubris, poor financial performance, regulation among industry peers, employee turnover increase, no new member interest, low member engagement, member apathy, and substitution. We can group these symptoms into exit, voice, and loyalty (Hirschman, 1970).

In addition to organizational costs, producers, and consequently, their jointly vertical integrated cooperatives, face unique challenges that disrupt their investment, patronage, and transaction behaviors. Richards posits a model of economic 'friction' that supports the fixed-asset hypothesis that prolongs depressed producer prices caused by oversupply in Canadian dairy. Agricultural marketing cooperatives face member 'loyalty' challenges when their members divest of assets more slowly than member investment in production of farm assets. Cooperatives face the challenge of developing supply-demand balancing solutions.

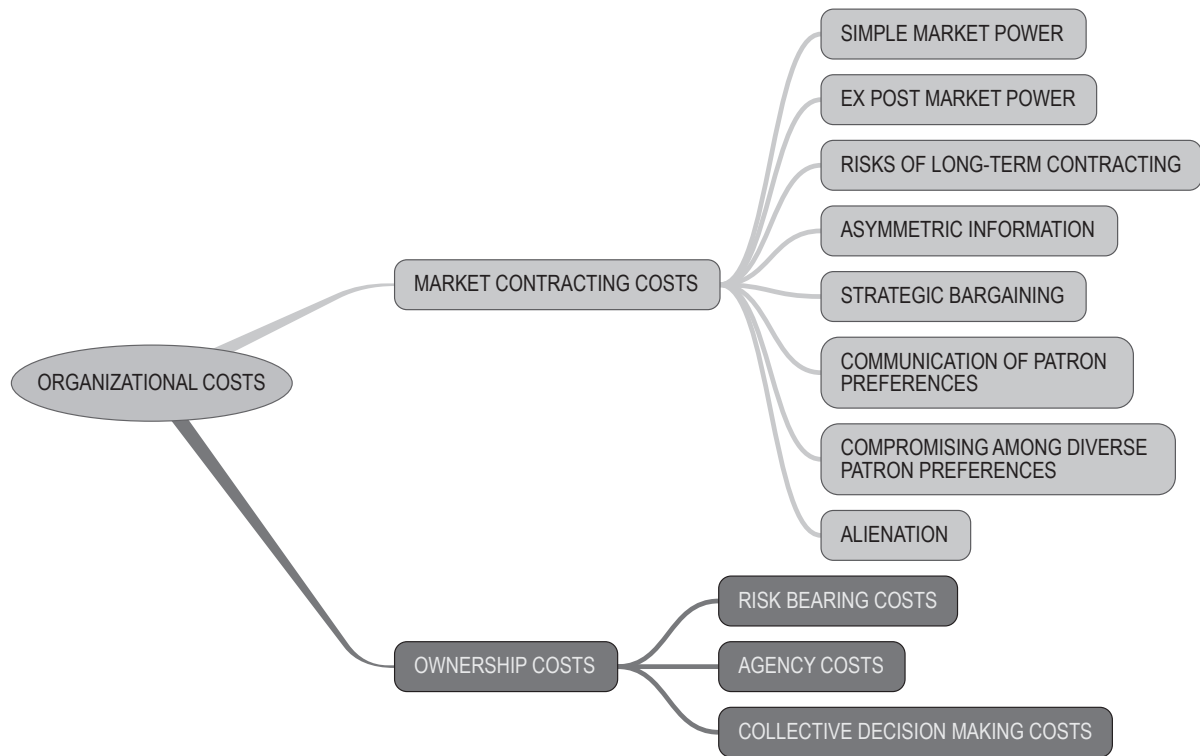


Figure 1. Organizational costs in enterprises (based on Hansmann, 1996).

Cooperatives also face the ‘logic of collective action’ problem when a group of producers form a cooperative coalition to create a distributable collective good but individually engage in independent, non-cooperative behavior. Cooperative classics discuss this ‘free rider’ behavior and the challenge group leaders face when attempting to induce members to behave in their common interests (Olson, 1971; Ostrom, 1990).

3. Generic solutions

We have observed that agricultural cooperatives tend to organize specific remedies for reducing or minimizing ownership costs into four generic solutions: user alignment, member retention, supply-demand balancing, and transparency.

- *User alignment solution:* The ‘user alignment’ solution is intended to align residual claimant and control rights within the cooperative; that is, to encourage each member-patron to contribute to the cooperative in proportion to the benefits (s)he receives (Cook and Iliopoulos, 1998). Among the most commonly used mechanisms to implement this solution are base capital plans (a capital contribution mechanism that requires proportionality of capital contribution and patronage);

the design and implementation of a marketing orders system, an industry mechanism that facilitates participants in a specific industry to adapt guiding rules to foster industry environment to achieve more orderly participant behavior, particularly important where price flexibility is high causing volatility changes in producer price levels; the introduction of marketing contracts signed with members; the adoption of proportional voting schemes; the establishment of a significant upfront equity requirement; and the issuance of transferable and appreciable delivery rights adjusting delivery and quality specifications alignment. Cooperative education regarding these complex formal organizational rules is enhanced and intensified.

- *Member retention solution:* This generic solution refers to ‘member-retaining policies’ whose objective is to increase members’ loyalty to the cooperative (Fulton, 1999; Fulton and Giannakas, 2001). Examples of such policies include the introduction of member relations programs, binding grower contracts, marketing agency in common exclusivity, investments in building and promoting a cooperative’s image, training schools for members, the creation of high costs associated with member exit, and emphasis on the cooperative’s evolution and history.

Sophisticated cooperative education at the member and employee levels is observed to be important.

- *Supply-demand balancing*: A third generic solution of 'balancing supply/demand' covers strategies intended to give the cooperative control over its major input and/or output supply channels. Solution instruments in this category include the attainment of large size, the adoption of a closed or defined membership policy, the creation of spatial monopoly/monopsony, mandatory marketing agreements with members, and the establishment of a delivery rights system.

For a heterogeneous group might also include innovative capital acquisition techniques aimed at attracting risk capital from members and/or external investors. Examples of solution instruments include the formation of subsidiaries, joint ventures or holding companies; the issuance of preferred stock; formalization of transferable and appreciable delivery rights; and the establishment of hedging services for members. A number of cooperatives have introduced additional solution instruments: the issuance of externally tradable subordinate bonds or the acceptance of external corporate investors in cooperative-owned subsidiaries.

- *Transparency solution*: A fourth generic solution to the property rights constraints, 'transparency,' encompasses mechanisms designed to allow member-patrons to choose their preferred level of risk, measure cooperative performance, and/or enable them to monitor management more efficiently. These include the adoption of separate capital, risk, and governance pools that foster the commonality of interest within each pool; the signing of management contracts with local cooperative members in regional multipurpose cooperatives; the issuance of multiple types of stock; the establishment of transferable and appreciable delivery rights; and placing focus on a single commodity within a region. The issuance of externally tradable subordinate bonds and the acceptance of external corporate investors

represent recently added instruments in the toolkit of cooperatives. Figure 2 summarizes and depicts these four generic solutions.

4. Examples of generic solutions

In Table 1, a number of European and U.S. agricultural cooperatives are identified along with their corresponding country of origin, the agricultural sector and primary commodity emphasis, a cooperative organization challenge, their choice of generic solution, and some examples of specific solutions to the cooperative issue. A forthcoming paper expands on cooperative organizational structure and details specific solutions correlated with proposed generic solutions.

5. Can intra-firm adaptiveness solve all ownership costs problems?

Despite the adoption of one or more solutions intended to address ownership cost problems, macro, mezzo, and micro forces, in combination with ill-diagnosed and/or wrongly implemented solutions might lead to disaster. Agricultural cooperatives are complex business systems operating within complex environments. As a result, they are under the direct and indirect influence of a number of external and intra-organizational forces that might push them out of track. At the macro level, such forces include, for example, environmental disasters, wars, economic depression, a stock market collapse, etc. The 1987 crash of the New York Stock Exchange provide a salient example of how cooperatives can experience immense turmoil, even if they have adopted a well-designed organizational structure (e.g. Cook and Iliopoulos, 1999).

At the mezzo, or industry level, competition from substitute products, the threat of competitor entry, and the increasing bargaining power of suppliers and/or buyers are but a few examples of important external forces. At this level, the

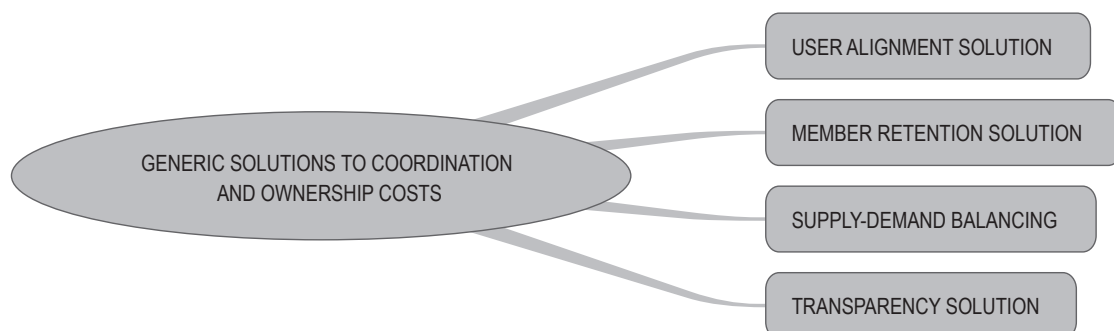


Figure 2. Generic solutions to coordination and ownership costs in agricultural cooperatives.

Table 1. Examples of generic solutions.

Cooperative	Country	Sector	Problem	Generic solution	Specific solution
CRV	NL	cattle breeding	heterogeneity-too many members (26,524) scattered in two countries	member-retaining idiosyncratic value	established a strong member relations department and hired a skilful communications expert
Friesland-Campina	NL	dairy	free rider	balance supply/demand	mutually binding member agreements/contracts
Agrifirm	NL	feed, arable farming	problematic relationship/ communication w/ members (17,750 members)	none yet	none yet
REO Veiling	Belgium	fruits & vegetables (auction)	internal free riding	balance supply/demand member-retaining idiosyncratic value	binding supply contracts additional services to members (e.g. collection of produce directly from each member's farm)
Morakert	Hungary	purchasing and service cooperative	internal free riding horizon	innovative equity capital acquisition techniques	limited company high up-front equity capital
Land O'Lakes	USA	dairy	disproportional capital contribution	user alignment and member retention	develop base capital plan multiple shares issued
Dairy Farmers of America (DFA)	USA	dairy	disproportional capital contribution	user alignment and member retention	develop base capital plan control homogeneity
Florida's Natural	USA	citrus	volatility reliability	balance supply/demand and member retention	adaptable marketing agreement
Blue Diamond	USA	nut	variability of quality	Transparency, user alignment, and member retention	well-defined, strict enforcement transparent premiums and discounts
American Crystal	USA	sugar	capital constraint supply/demand variability	user alignment	organized as closed membership with tradable delivery rights
Farmland	USA	multi-purpose grain, fertilizer, pork	over extension of capital acquisition lack of transparency	never adapted	bankruptcy
Organic Valley – CROPP	USA	multiple pool – primarily dairy	cross pool subsidization	all four generic solutions	closed membership policies with strict member constraints
GROWMARK	USA	agricultural inputs	human capital management	user alignment	centralized H.R. functioning for federated system

rivalrous interplay of these forces might create unexpected consequences, not always to the benefit of a cooperative and its member-patrons.

Inside a cooperative, numerous forces can also constrain significantly the organization's ability to optimize ownership costs. The single most important intra-organizational factor, however, seems to be an unmanageable level of heterogeneity in members' preferences that imposes

extremely high costs of collective decision-making on the cooperative (Hansmann, 1996). Diachronic increases in heterogeneity might be caused by numerous factors, including disproportionate equity allocations, patron drift, membership growth, the substitution effect, and diversification exacerbating transactional differences (Cook and Burrell, 2009). Member interest heterogeneity has a negative impact on a cooperative's health as long as it results in unmanageable increases in ownership costs. Heterogeneity tends to be a source but also an intensifier of both investment- and control-related constraints in agricultural cooperatives (Cook and Iliopoulos, 1999; Hansmann, 1996; Iliopoulos and Hendrikse, 2009).

The combination of these forces partially explains the high complexity of food and agribusiness netchains, in which cooperatives play an important role. A netchain is 'a set of networks comprised of horizontal ties between firms within a particular industry or group, which are sequentially arranged based on vertical ties between firms in different layers' (Lazzarini *et al.*, 2001). Cooperatives are by their very nature noticeable builders of netchains (Bijman *et al.*, 2012; USDA, 2015). Yet, the simultaneous interplay of poorly managed pooled, sequential, and reciprocal interdependencies caused and/or boosted by the aforementioned forces might, in the short run, lead to unexpected turbulence and dismay.

In addition to, or because of, these external and internal forces, a cooperative might fail to diagnose correctly the root cause of the problems that lead to high ownership costs. The history of agricultural cooperatives abounds with cases where cooperative leaders and their advisors failed to identify the real problem that brought about ownership costs. The preceding section discussed a few of these examples. Diagnosing a cooperative health problem calls for an understanding of the links between symptoms and root causes, which should not always be taken for granted (Iliopoulos, 2014).

Even if the diagnosis is correct, however, a cooperative might have difficulty in identifying and implementing the appropriate mix of solutions. We refer to mix of solutions because, in many cases, a combination of complex, complementary solutions is required (Iliopoulos, 2009). Not all solutions are compatible with each other, however. In some cases, where two or more solutions are simultaneously implemented, one might balance out the positive impact of another solution. Common challenges facing cooperative leaders in identifying and implementing the right mix of compatible solutions include gaining a systemic understanding of the observed and latent relationships

between incentives and outcomes, copying solutions from other cooperatives operating in substantially different contexts, misinterpreting poor financial performance as a purely financial management problem, predicting for how long a solution will work, ignoring other key parts of the netchain system, and identifying the underlying vaguely defined property rights.

These challenges, in combination with all the aforementioned external and internal forces might have a debilitating impact on cooperative health. In many cases, the end result is degeneration.

6. Lessons and further inquiry

So what have we learned from this exercise? As this review suggests, we are at the beginning stages of exploring intra-firm coordination mechanisms in the cooperative. We have just begun to penetrate the surface of this complex and interesting organizational form. Below are a number of potential research topics that have surfaced during our review. These topics suggest that further research and inquiry concentrate on currently formed and operating cooperatives that have endured for a significant set of years. We found significant evidence of the existence of organizational maladies but only a few examples or cases of real or potential solutions. Our intent of this article was to nudge research efforts toward correcting this vacuum by identifying areas of research that might assist in expanding our knowledge of means by which to move the cooperative form of business toward a more efficient organizational form.

1. It appears that comparative ownership costs informs to a degree the degeneration of cooperatives.
2. It appears that understanding the generic solutions helps guide the decision maker toward selection of a subset of generic solutions.
3. Adapting and implementing generic solution analysis with specific solutions leads to amelioration of the negative consequences of intra-firm ownership costs increasing the probability of a cooperative's ability to regenerate its original purpose or formulate a strategically related new purpose.
4. It is obvious that a better-defined set of causes of higher comparative ownership costs is needed to refine the diagnostic tool proposed in this paper.
5. A better understanding of the characteristics and dynamics of member heterogeneity is needed. Our observations suggest that demographic and personal differences might cause emergence of subgroup friction (age associated with lack of succession, member investment portfolio, wealth considerations, etc.) but

our understanding of relative transactional differences and judgmental differences might also contribute to subgroup friction.

6. A more detailed examination and analysis of specific solutions is needed in order for related research to become relevant.
7. As cooperatives long endure, more research is needed using interdisciplinary approaches that more specifically define cooperative health, the adaptability of patron owned entities, and how governing bodies address ownership costs.
8. Agricultural cooperatives investing considerable resources in diagnosing possible interconnections and side effects stemming from high ownership costs have a significantly higher chance of avoiding degeneration in the medium to long run. While this is a life long organisational exercise, the organisational design phase during which a cooperative designs its bylaws is the time to adopt intra-organisational incentive mechanisms that minimize the possibility of high ownership costs in the future.
9. Addressing complex, intra-cooperative organisational problems usually requires that the cooperative adopt sets of interrelated generic solutions that succeed in providing non-contradictory incentives to cooperative stakeholders.
10. Jumping from symptoms of cooperative illness to specific solutions increases probability of failure; identifying the real cause of an organisational problem is a step no efficient diagnostic approach can escape taking.

This paper introduces a broad framework that moves the intra-coordination motivated cooperative researchers from a vague set of postulates to a more formalized set of generic solutions to coordination on organizational cost optimization. This approach emanates from theoretical works in property rights, transaction costs, ownership costs, and agency theory and is built on the vaguely defined property rights explanation of cooperative behavior and governance.

As these conclusions suggest, considerable research effort is needed to fully understand how organizational disabilities can be diagnosed correctly and healed. A promising avenue for such research is the adoption of a systemic approach (e.g. Sargut and McGrath, 2011; Wulum, 2007). Viewing agricultural cooperatives as a complex adaptive system would enable researchers to shed light on the emergence of solutions to complex problems.

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