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Cooperative Community Development: A Comparative Case Study of Locality-Based Impacts of New Generation Cooperatives

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The research question was whether the presence of new generation cooperatives (NGCs), whose members do not necessarily live in the community, have secondary community impacts different from traditional cooperatives, which are more locally based? The focus of this research was to compare two counties with NGCs to other farming-dependent counties. The purpose was to determine whether the impacts on financial, built, human, and social capital were different between the two new generation counties and the remaining farming-dependent counties. Relative to the other farm-dependent counties, 10 of the measures indicated an improvement in community capitals in the NGC counties, 6 indicated a decline in community capitals, and 1 was mixed.

Keywords: community capital, community development, cooperative development, new generation cooperatives (NGCs)

During the heyday of new generation cooperative (NGC) organizing, much was made of their secondary impacts for the host community. The new wealth generated from adding value to members' production was supposed to stay in the community, rather than being transferred out of state to a distant corporate headquarters whose investors' only concern was rate of return. Furthermore, the wealth was supposed to spill over into other community or economic development activities (Egerstrom, 2001). The secondary impacts of NGCs would be the community impacts via job creation, an improved tax base, a growing population, increased sales at retail establishments, improvement and growth in housing stock, and so on. The possibility of securing these secondary impacts enticed community development corporations to work closely with the organizers of NGCs by providing land, some capital, and infrastructure needed for the physical plants.

NGCs are similar to traditional cooperatives but they differ from them in significant ways. They are similar to traditional cooperatives in that they both emphasize democratic control based on one-member, one vote; they distribute earnings based on patronage with the cooperative; and they have a board of directors elected by the membership. NGCs differ from traditional

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cooperatives in that they are closed—that is, membership is restricted to those who purchase shares of stock; they require a high level of equity investment in shares of stock, and delivery rights are attached to the shares of stock; they obligate their members to deliver produce to the cooperative based on the number of shares of stock purchased; and they permit members to transfer shares within the cooperative, and shares can fluctuate in value.

Lost in the discussion, however, was the difference between a traditional cooperative, whose members are primarily from the immediate area, and a NGC whose members are primarily from the state or multistate region. With traditional cooperatives, benefits are more likely to accrue to the community in which a majority of the members reside; traditional cooperative development is place specific with multiplier effects accruing to the immediate locality. In contrast, with NGCs, benefits are much more likely to be diffused within the state or region in which the members reside; NGC development is more specific to a particular region with multiplier effects accruing to the region. Membership data indicated that only 6% of the members of Dakota Growers Pasta Co. lived in Foster County with perhaps a third of the members lived in the Durum Triangle north of Carrington. The North American Bison Cooperative had members residing in 18 states and 4 provinces.

The article begins with a discussion of cooperative community development versus community development, which sets out the general context for the discussion of the impacts of NGCs in the context of community capitals. It continues with a review of the secondary impacts of NGCs. Following that is a review of the nature of locality- and regionally-specific cooperatives and a comparison of traditional cooperatives and NGCs. The methodology section includes definition and measurement of community capitals, a discussion of the unit of analysis, and a preview of the data analysis. The data analysis section is organized by the results for financial and built capital, human capital, and social capital. The last section includes a summary, conclusion, shortcomings, and implications.

COOPERATIVE DEVELOPMENT AND COMMUNITY DEVELOPMENT

In the heyday of NGC Counties development of the 1990s, it was not unusual that some promoters of NGCs confused cooperative development with community development. Flora, Flora, and Fey (2004, p. 350) define community development as “what people do to improve the overall quality of community.” Nadeau and Thompson (1996, pp. 7–8) define cooperative development as “a group of people forming an organization to provide themselves with specific economic or social benefits.” The main difference between cooperative development and community development consists in that the purpose of community development is to improve the well-being of the community, whereas the purpose of cooperative development is to organize a member-controlled organization designed to meet the needs of members.

Nadeau and Wilson (2001, p. 65) combine these two terms into cooperative community development which they define as “a process in which member-controlled organizations develop and operate to achieve the goals of their members and the broader social and economic goals of the community.” Community developers and cooperative developers failed to note the fundamental difference in locality-specific positive and negative effects accruing from traditional cooperatives and NGCs. It is the NGC members in the region who realize the increased wealth from transforming a commodity into a value-added product. They may not spend that new

wealth in the community in which the cooperative facility is located. Furthermore, while the positive multipliers may occur to the members in the region, the negative externalities associated with the physical facility may be localized to the community where the facility is located. Even Nadeau and Wilson failed to note that the positive multiplier effects for a NGC accrue to a region rather than to the locality as they do with traditional cooperatives, whereas the negative externalities may occur to the community where the facility is located.

Whether the community economic development outcomes expected from these enterprises really occurred is still a researchable question. A larger question is whether or not the presence of NGCs, whose members do not necessarily live in the community, have secondary, community impacts different from traditional cooperatives which are more community based.

COOPERATIVE COMMUNITY DEVELOPMENT AND COMMUNITY CAPITALS

The major difference between cooperative development and community development is that the latter includes a community impact analysis as an inherent part of the development process (assessing externalities, which may be either positive and negative), which might occur from the development and which affect the local community. The outcome of that process would be to maximize the positive externalities and minimize the negative externalities during the process of cooperative community development: “cooperative organizations and projects are evaluated in terms of the extent to which they have a positive, sustainable impact on the environment, the economic and social well-being of those directly involved in the organization or project, and the community” (Nadeau & Wilson, 2001, p. 65).

This assessment process is similar to the questions that Flora (1999, p. 21) suggests leaders should ask themselves in determining whether community development projects have been successful. Included among those questions are the following: “Have they increased the skills, knowledge and ability of the residents; have they strengthened relationships and communication within the community; have they improved community initiative, responsibility and adaptability; have they promoted sustainable, healthy ecosystems with many community benefits; and have they promoted a diversified and healthy economy?”

These five areas refer to the assets or capital available to a community. Capital can be broadly conceived as the range of resources available to a community which, when invested, create new resources (Flora, 1999). An increase in the quantity or quality of a community’s capitals (assets) can be an outcome of community development. Green and Haines (2001, p. vii) define community development “as a planned effort to produce assets that increase the capacity of residents to improve their quality of life. These assets may include several forms of community capital: physical, human, social, financial, and environmental.”

Nadeau and Wilson (2001) reviewed three case studies of NGCs to determine their positive and negative community impacts. The three cooperatives were the Coulee Region Organic Produce Pool, Value Added Cooperative, and Dakota Growers Pasta Company. In their summary of the positive impacts, Nadeau and Wilson stressed the benefits that derive from local ownership and control include higher producer incomes, better paying jobs, increased sales by local retailers, secondary employment impacts, greater tax base, business expansions, and the establishment of new jobs in the community. The social benefits include a sense of leadership and confidence that carries over to other community activities, increased community pride,

and increased satisfaction with their community and their lives. The negative impacts can include environmental degradation. Because these ventures can fail, negative impacts can include investment losses, loss of markets for producer members, and negative multiplier effects.

LOCALITY SPECIFIC VERSUS REGIONALLY SPECIFIC BENEFITS OF COOPERATIVES

The locality specific benefits of traditional cooperatives were noted by Gertler (2004). He noted that cooperatives, while connected to capitalist system, are not as strongly governed by capitalist market logic as investor-owned firms. Instead, they are governed by their relationship to the communities in which their members reside. As Gertler (p. 12) notes, cooperatives are strongly connected to the worries and temporal focus of local communities through their member owners, who may also be patrons and employees of the cooperative as well as residents of the community in which the cooperative is located. As residents, they are affected by the cooperative's investments in operations that affect the quality of life in the community. Because cooperatives are rooted, both spatially and socially, they are not as mobile or liquid as investor-owned firms. It is because of this rootedness in space and place¹ that co-ops have a different relationship to their members and act differently in their communities than do investor-owned firms. Cooperatives draw upon the trust that develops out of the occupation of shared place and space to lower transaction costs and remain competitive and flexible.

While not intending to create a local–regional cooperative continuum, a reading from top to bottom of Gertler's categorization of agricultural cooperatives moves cooperatives from a decidedly local to a more regional focus. The locally-oriented cooperatives (which Fulton (2000) labels as traditional cooperatives) would be rural utility cooperatives and Nourse I Local (multi-purpose) cooperatives. The more regionally-oriented cooperatives would be the Nourse II (multi-functional) cooperatives, Sapiro I (bargaining) cooperatives, Sapiro II (marketing) cooperatives, and lastly Sapiro III (new generation) cooperatives.²

TRADITIONAL COOPERATIVES, NGOS, AND INVESTOR-OWNED FIRMS

The purposes of economic organizations have been identified as making profits, providing services, and realizing meaning (Torgerson, Reynolds, & Gray, 1998). These purposes can be arrayed on a continuum from profits for investor-owned firms (IOFs) to life meaning for Kibbutz, as shown in Figure 1. Among all the cooperatives, NGCs more closely resemble IOFs with their emphasis on profit. Farm input and service cooperatives, based upon a service orientation, fall in the middle of the continuum. Marketing cooperatives fall between the profit purpose and the service purpose orientation.

While Figure 2 arrays IOFs, NGOs, and traditional cooperatives along a continuum of purposes, further explanation of the differences between these three forms of economic organization is needed. Those differences and similarities are noted in Figure 3.

NGCs and traditional cooperatives differ in regard to membership, entry fees, return on investment, capital gains, capital investment, delivery rights, and trading of shares. Membership in a traditional cooperative is open to all and new members are accepted on a continual basis. In a NGC, membership is restricted once the targeted amount of delivery rights shares are sold.

Type of Co-op	Description
<i>Traditional Co-ops</i> Rural utility co-ops	Includes rural electric (formed in 1936) and rural telephone (formed in 1949) co-ops. Formed to provide a service that was missing because of high cost of serving a low density consumer base.
Nourse I—Local co-ops	Multipurpose – input retailing and commodity assembly. Operate in a relatively small geographical area. Formed to provide competition to a spatial monopoly (the so-called “competitive yardstick”) or to provide missing services.
Nourse II—Regional co-ops	Multifunctional—perform a combination of input procurement, service provision and/or marketing. Many integrate forward or backward beyond the first handler or wholesale level. Structure—federated, centralized, or both. Formed to provide a “competitive yardstick” or to achieve economies of scale.
Sapiro I—Bargaining co-ops	Formed to enhance margins or ensure markets. Most often found where the agricultural product is perishable.
Sapiro II—Marketing co-ops	Form of forward vertical integration. May be single or multiple commodity. Formed to increase margins or to avoid market power. May involve processing of the commodity, as well as development of brand names.
NGCs (Sapiro III)	Single commodity and processing focus, rather than geographical focus. Formed to obtain market information and coordination efficiencies or to provide producers with profits from downstream activities. Well-specified delivery rights.

FIGURE 1 Categorization of cooperatives.⁵

Entry fees are high for membership in NGCs with the purchase of delivery rights shares which entail an equity contribution, but are low or affordable for membership in traditional cooperatives. Members of NGCs may realize a dividend on their shares depending on the profits of the company. With traditional cooperatives, dividends may be paid only after the board of directors has retained enough profits in unallocated reserves for investment, maintenance, and repair. Members in NGCs may realize capital gains as the stock of the company appreciates in value, but members in traditional cooperatives do not realize capital gains. Capital in traditional cooperatives is built up through retention of profits which is held as unallocated reserves. Sometimes the true value of equity may never appear on the balance sheet because of variations in the valuation of equity. Members in NGCs supply capital in proportion to patronage; those who have more shares of delivery rights stock are required to supply more of the equity capital. In traditional cooperatives, capital requirements may be capped, or in some cases wealthier

Players	Investor - owned firms	NGCs	Open marketing cooperatives	Farm supply cooperatives	Consumer goods cooperatives	Kibbutz
Purposes	Profits			Service		Life Meaning

FIGURE 2 Continuum of cooperative purposes.⁶

Characteristic	New Generation Co-op	Traditional Co-op
Membership	Closed/restricted	Open
Entry fees	High: through purchase of shares of stock	Low/affordable
Return on investment	Dividends based on profit	Limited return on capital
Capital gain	Potential for capital gain on shares	No capital gain for members
Capital investment	Members supply capital in proportion to patronage	Capital not proportional to patronage
Voting	One share/one vote or one member/one vote	One member/one vote
Delivery requirements	Determined by number of shares	None
Trading of shares	Trading approved by Board	Not traded

FIGURE 3 Comparison of NGCs and traditional cooperatives.⁷

members may supply additional capital to start the cooperative and receive a semifixed dividend on this contributed capital. NGCs and traditional cooperatives may be similar in voting requirements. Traditional cooperatives operate with a one member–one vote policy. Depending on how NGCs are organized, they may be similar to traditional cooperatives with one member–one vote. Unlike NGCs, traditional cooperatives have no delivery requirements, nor do they have tradable shares of stock (Woodward, 2003).

METHODOLOGY

Community Capitals: Definition and Measurement

The community capital measures used in this analysis are based upon data collected at the county level from a variety of federal and state sources.³ We were unable to gather data on environmental capital, so this analysis will be confined to human, social, and financial/built capital. A complete list of all the data collected, together with the source of the information, is included in Appendix B. Financial data were standardized to constant dollars. For all measures, a change score was calculated to indicate the extent to which the measure had changed between 1990 and 2000.

Human Capital

Human capital refers to the characteristics of “individuals that contribute towards their ability to earn a living, strengthen community, and contribute to community organizations, to their families, and to self improvement” (Flora et al., 2004, p. 80). The components of human capital include the health status, strength and stamina of the labor force; the interpersonal skills, values, and leadership capacity of individuals; and the skills, education, experience, and knowledge of the population.

One indicator of human capital is population size; the greater the population base the greater the pool of human capital. Population diversity is another aspect of human capital; the greater the diversity of the population, the greater the potential for diverse perspectives and ideas in human capital. In this analysis, change in population size and change in school population diversity are used as measures of the size and diversity of human capital.

Education—both primary and secondary—is one major way in which a community invests in human capital. The greater the extent to which a community invests in human capital development, the greater the skills, knowledge, and experience available to that community. In regard to education as a component of human capital, both inputs and outputs are important. In regard to outputs, we can examine the change in the number of high school graduates and the change in the number of high school dropouts. Other output measures would be actual changes in basic skills and knowledge, but that data was not easily obtainable. Input measures indicate the extent to which a community invests in human capital. Indicators of these input measures include change in the student-teacher ratio and in change in adjusted taxable valuation per pupil.

Social Capital

Social capital can be characterized as a property of the community and is usually defined in terms of norms of reciprocity and mutual trust (Coleman, 1988). Putnam (1993, pp. 35–36) further defines it as “features of social organizations, such as networks, norms and trust, that facilitate coordination and cooperation for mutual benefit.” Because social capital is a property of the community that resides in relationships, it is difficult to measure directly; however, indirect but objective measures of individual security related to crime and the degree of acrimony in the community are possible. These are indicators of mutual trust, reciprocity, shared norms, and identity (Flora, 1999).

Small claims cases include cases for recovery of money, or the cancellation of any agreement involving material fraud, deception, misrepresentation, or false promise, where the value of the agreement or the amount claimed by the plaintiff or the defendant does not exceed \$5,000. An increase in small claims cases would reflect an increased level of acrimony in the community and demonstrate a lack of trust and decreased communication.

Property crimes include arson, burglary, larceny, theft, and motor vehicle theft. An increase in property crime reflects a decline in traditional measures of social control relative to property security.

Misdemeanors include petty theft, public intoxication, simple assault, disorderly conduct, trespass, and vandalism. An increase in misdemeanors involves disagreements among citizens regarding such issues as property conflicts and personal injury. They are not criminal acts, but they are disputes that are eligible for resolution through the formal legal system.

Felonies include assault, battery, arson, possession of controlled substances, embezzlement, fraud, grand theft, treason, espionage, robbery, rape, kidnapping, and racketeering. These criminal acts are subject to resolution through the criminal court system. An increase in felonies would indicate that informal mechanisms of social control have weakened.

Financial Capital

Financial capital consists of money that is used for investment rather than consumption, and it represents resources that are translated into monetary instruments that makes them highly liquid, i.e., able to be converted into other assets (Flora et al., 2004, p. 165). Investment means using a purchase or a financial instrument to create additional value (Flora et al., p. 9). Financial capital is defined as money that is used for investment rather than consumption, and it includes income, wealth, security, and investments. This analysis uses measures of income to individuals (average

annual wages) and governments (sales tax revenues) as well as measures of security (employment and poverty). Obviously, not all income is used for investment, as much of it will be used for consumption; however, the greater the financial security of a community's population, the more income it will have to invest. In this analysis, financial capital is measured by changes in employment (changes in average annual employment and unemployment rate, changes in BEA adjusted income, changes in food stamp participation, and in changes adjusted taxable revenue).

Built Capital

Built capital provides a supporting foundation which facilitates human activity. It is the permanent physical installations and facilities supporting productive activities in a community (Flora et al., 2004). It is also used as tools for production of other capitals. It includes transportation networks, communication systems, utilities, protective services, educational and health facilities, and public and commercial buildings. Built capital occurs when financial capital is transformed into physical infrastructure which contribute towards building other capitals. Physical infrastructure refers to "permanent physical installations and facilities supporting productive activities in a community," and it refers "to the equipment needed to support a series of networks that enable people to travel, communicate with each other, and gain access to services and markets" (Flora et al., 2004, p. 191). Built capital was measured by change in adjusted value of building permits and in change in the number of business establishments.

Unit of Analysis

Twenty-eight counties of the 53 counties in North Dakota are designated by the U.S. Department of Agriculture (Economic Research Service, 1989) as farming-dependent counties, shown as shaded in Figure 4. Farming-dependent counties are defined by the ERS as counties in which

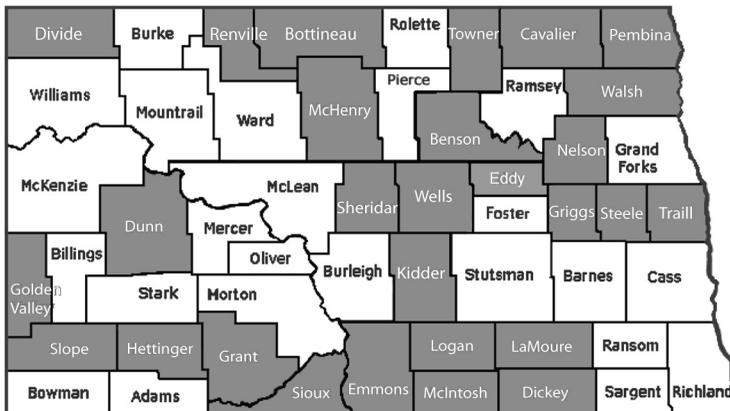


FIGURE 4 Farming-dependent counties in North Dakota (shaded).

20% of labor and proprietor income comes from farming. They are primarily remote, rural, and sparsely populated.

Two of these counties (Pembina and Traill) are the home counties of an established NGC, American Crystal Sugar, which has sugar beet processing plants in Drayton and Hillsboro. Only one of the two more recently established NGCs is located in a farming-dependent county, the North Dakota Bison Cooperative in Eddy County, established in 1994. One nonfarming-dependent county will be part of this analysis, Foster County, which is the home county of the Dakota Pasta Growers Company, established in 1993. (See Appendix A for a description of the two new generation cooperatives.)

ANALYSIS

Percent changes over time within and between counties with NGCs are compared in this section of the analysis. The analysis compares means from the two counties containing recently established NGCs (North American Bison Cooperative in Eddy County and Dakota Growers Pasta Company in Foster County) to means from the remaining farming-dependent counties, excluding both Pembina and Traill County, which were excluded because of the presence of facilities of an earlier NGC which might have confounded the analysis (Figure 5 shows the comparison counties in gray and the NGC counties in crosshatched).

Changes over time within and between counties with NGCs are compared in the analysis. This study compares means on community capitals from the two counties containing recently established NGCs (North American Bison Cooperative in Eddy County and Dakota Growers Pasta Company in Foster County) to means on community capitals from the remaining farming-dependent counties. It also compares changes in community capitals in the NGC counties over time (1990 and 2000) and also compares these means on community capitals to counties with similar economic bases.

This analysis is essentially a case study of the two counties with NGCs compared to other farming-dependent counties without NGCs. The use of only farming-dependent counties was

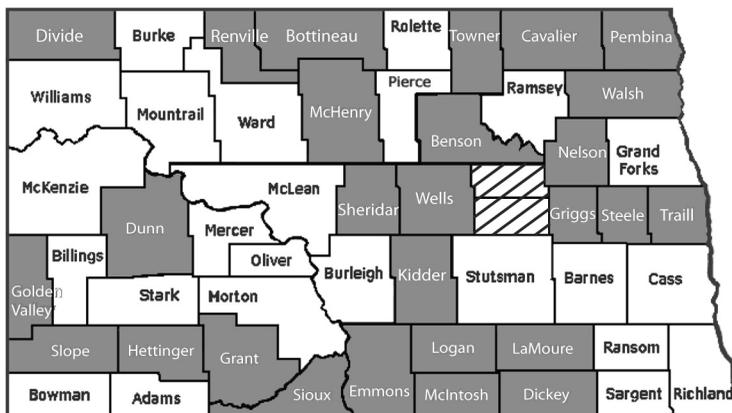


FIGURE 5 Comparison counties/NGC counties. (NGC counties of Eddy and Foster shown as crosshatched.)

to compare like counties to like counties. The analysis is descriptive in that it compares these indicators of community capital over time and across these two groups of counties. The sparsity of quantity and poor quality of some of the data did not lend it to more rigorous analysis. The analysis is a comparison of absolute changes and percent change in means for community capitals in the two counties with NGOs and the remaining farming-dependent counties. A difference in means and percentages is calculated, and if the percentage is determined as to its effect—improvement, decline, or mixed—for the new generation counties. The measures selected covered four types of capital—financial, built, human, and social.

Impact on Financial and Built Capital

Percent changes (1990–2000) were calculated for all the farming-dependent counties and the NGC counties for the following indicators of financial capital: average annual employment, unemployment rate, average annual wages, adjusted sales tax revenue, and persons on food stamps. The same procedure was followed for the measures of built capital: number of firms and adjusted building permit value. The results are presented in Table 1.

The average annual employment for counties with NGCs did increase from 1990 to 2000, as did the average employment in the comparison counties. Employment increased by 228 in Eddy and Foster County, an increase of 22%, while the average employment increased by 159 (13%) in the comparison counties. A comparison of the percentage change in average annual employment indicates that the NGC counties had a 9% greater increase than did the comparison counties. In this regard, the percent change in average annual employment is greater for NGC counties than in comparison counties, and it had a positive impact on financial capital.

The unemployment rate in Eddy and Foster County fell by 20%, from 4.90 to 3.90, while the unemployment rate in the comparison counties fell by 6%, decreasing from 3.84 to 3.62. This rate for the comparison counties, however, is still lower than the unemployment rate in Eddy and Foster County. The 14 percentage point difference in percent change indicates that the rate of unemployment was greater in NGC counties than in comparison counties. Therefore, the results reflect an improvement in financial capital for NGC counties.

The average annual wage in Eddy and Foster County in 2000 was \$11,916, and the average annual wage in the comparison counties in 2000 was \$11,241. Average annual wages, in constant dollars, increased 5% in the comparison counties and increased 10% in the counties with new generation cooperatives. The 5 percentage point difference in percent change between comparison counties and NGC counties indicates that increase in average annual wages is greater in the latter; thus the result was an improvement in financial capital for the NGC counties.

One indicator of poverty is the number of individuals participating in the food stamp program. From 1990 to 2000, the number of persons receiving food stamps decreased in all counties, although the comparison counties had more persons receiving food stamps than did the NGC counties. The largest percentage decrease occurred in Eddy and Foster County, with the number of persons decreasing by 42%; whereas, in the comparison counties, the number of persons decreased by 34%. The eight percentage point difference in decrease in persons receiving food stamps indicates that the decrease was greater in NGC counties than in comparison counties. Concerning this indicator of poverty, the result was an improvement in financial capital for the NGC counties. Trail County, but not Pembina, decreased this measure

TABLE 1
Summary of Impacts on Community Capitals

<i>Community capital</i>	<i>Comparison counties</i>	<i>NGC counties</i>	<i>Difference between comparison and NGC counties</i>	<i>Effect for community capitals in NGC counties</i>
Financial: Annual average employment				
Mean change	159	228	69	
Percent change	13	22	9	Improve
Financial: Unemployment rate				
Mean change	-.22	-1.00	+.78	
Percent change	-6	-20	+14	Improve
Financial: Average annual wage				
Mean change	+610	+1,104	+494	
Percent change	+5	+10	+5	Improve
Financial: Persons on food stamps				
Mean change	-15	-72	-43	
Percent change	-34	-42	-8	Improve
Financial: Sales tax Revenue				
Mean change	-18,721	+24,062	+42,783	
Percent change	-4	+5	+9	Improve
Built: Number of firms				
Mean change	-16	-8	+8	
Percent change	-9	-5	+4	Improve
Built: Building permit value				
Mean change	+77,467	+137,000	+59,533	
Percent change	+225	+174	-51	Mixed
Human: Student-teacher ratios				
Mean change	+1.0	+3.0	+2.0	
Percent change	+8	+23	+15	Decline
Human: Cost per pupil				
Mean change	+1,160	+3.0	+2.0	
Percent change	+54	+19	-36	Decline
Human: Dropout rate				
Mean change	-.2	+.6	-.8	
Percent change	-13	+38	-51	Decline
Human: Post high school college				
Mean change	-3	+9	+12	
Percent change	-6	+23	+29	Improve
Human: Population				
Mean change	-507	-188	+319	
Percent change	-11	-5	+6	Improve
Human: Minority student enrollment				
Mean change	+21.8	+46.0	+28.03	
Percent change	+37.5	+209.1	+171.60	Improve
Social: Property crime				
Mean change	-13	-11	-2	
Percent change	-25	-48	-23	Improve

(Continued)

TABLE 1
Continued

<i>Community capital</i>	<i>Comparison counties</i>	<i>NGC counties</i>	<i>Difference between comparison and NGC counties</i>	<i>Effect for community capitals in NGC counties</i>
Social: Misdemeanors				
Mean change	+2	+62	+60	
Percent change	+2	+94	+92	Decline
Social: Felonies				
Mean change	+7	+4	-3	
Percent change	+88	+133	+45	Decline
Social: Small claims court cases				
Mean change	-2	+10	+8	
Percent change	-5	+26	+31	Decline

of poverty more than our model predicted between 1900 and 2000; Pembina fit the model. Eddy County did a good deal better in reducing this measure of poverty more than predicted by our model. Foster County also did better than expected in reducing this measure of poverty during the decade—more than Traill, but less than Eddy.

The comparison counties were the only group of counties to experience a decrease in adjusted sales tax revenue, falling 4%, from \$448,557 to \$429,836. Sales tax revenue in Eddy and Foster County increased by 5%, from \$468,409 to \$492,471. The nine percentage point difference in percent change between the comparison and NGC counties indicates that the increase in sales tax revenues was greater in the NGC than the comparison counties. In this case, the result was an improvement in financial capital for NGC counties.

Built Capital

The number of firms in Eddy and Foster County fell from 146 in 1990 to 138 in 2000, a decrease of 5%. The number of firms in the comparison counties fell from 178 in 1990 to 162 in 2000, a decrease of 9%. The four percentage point difference in percent change indicates that the decrease in the number of firms was greater in the comparison counties than in the NGC counties. Therefore, the impact on built capital was positive for NGC counties in that the reduction in the number of firms was attenuated.

All counties experienced large increases in building permit values, adjusted to constant dollars, with the largest dollar increase in Eddy and Foster County (\$136,896), and followed by the comparison counties (\$77,467). The largest percentage increase in building permit value (225%), however, took place in the comparison counties, whereas the percent increase in building permit value in Eddy and Foster County was 51 percentage points lower (174%). In this case, the absolute change is significantly greater in the NGC counties (by \$59,533) than in the comparison counties, but the percentage change is greater in the comparison counties (by 51 percentage points). Thus, the effect on built capital was mixed. In both the comparison and NGC counties, the result was an improvement in physical capital with a greater absolute increase in the NGC counties and a greater percentage increase in the comparison counties.

Impact on Human Capital

Percent changes (1990–2000) were calculated for the following indicators of human capital: student-teacher ratio, drop-out rate, number of high school graduates, cost per pupil, adjustable taxable revenue per pupil, population, and minority students including Native American.

In 1990 the lowest student-teacher ratios were found in the comparison counties (13.0), followed by the counties with new generation cooperatives (13.3). The comparison counties continue to have the lowest student-teacher ratios in 2000 (14.0), compared to 16.3 for Eddy and Foster County. The largest percentage increase in student-teacher ratios took place in the counties with NGCs (Eddy and Foster County), with ratios increasing by 23% in these counties compared to 8% in the comparison counties. Because the increase in the student-teacher ratio was greater in the NGC counties than in the comparison counties (a difference of 15 percentage points), investment in human capital was determined to have declined.

The student dropout rate fell from 1990 to 2000 in the comparison counties, falling from 1.6% to 1.4%. Dropout rates increased in counties with NGCs, rising from 1.6% to 2.2% in Eddy and Foster County. Counties with NGC have the highest drop-out rates. Between 1990 and 2000, drop-out rates increased by 38% in NGC counties, while they decreased by 13% in the comparison counties. The 51 percentage point difference in drop out rates between comparison counties and NGC counties indicates a decline in human capital in the later.

Another indicator of human capital is educational opportunity, measured by the number of high school graduates continuing their education at a college or university. Eddy and Foster County experienced the only increase in the number of graduates continuing their education, increasing 23% from 40 to 49 students. The number of students continuing their education fell by 6% in the comparison counties. The 29 percentage point difference between comparison and NGC counties in students continuing education after high school indicates an improvement in human capital in the later.

Population decreased in all counties, with the largest decrease in the comparison counties (–528), followed by Eddy and Foster County (–188). The percent population decrease was greater in the comparison counties (–11%) as compared to NGC counties (–5%). The six percentage point difference in population decline between the comparison and NGC counties indicates that the rate of population decline was greater in the former than the later, and the staunching of decline might be declared as an improvement in human capital in the later.

The highest costs per pupil in 2000 are found in the comparison counties (\$3,320), followed by Eddy and Foster County (\$2,381). The comparison counties also experienced the greatest absolute increases in cost per pupil (+\$1160) compared to NGC counties (+\$356). The largest percentage increase took place in the comparison counties (54%). The cost per pupil in Eddy and Foster County increased at a much smaller rate, increasing only 18% from 1990 to 2000. In the fact that NGC counties are spending less per pupil, and that their rate of increase in spending per pupil is less than in comparison counties, it would indicate a decline of investment in human capital. This suggests that neither community was prepared to support the new employment by investing in human capital.⁴

The number of minority students in the comparison counties increased by 21 for a 38% increase, whereas in new generation counties, the number of minority students increased by 44 for a 209% increase. While all farming-dependent counties are becoming more ethnically diverse, thereby having a improvement in on human capital, the 171 percentage point difference

in the increase between comparison and NGC counties indicates that the effect of increased was an improvement in human capital in the NGC counties.

Impact on Social Capital

Means, net change in means, and percentage change in means from 1990 to 2000 were calculated for the following indicators of social capital: total property crime, misdemeanors, felonies, and small claims cases. One indicator of social capital is the change in the number of property crimes.

Overall, total property crime decreased 48% in Eddy and Foster County, falling from 23 incidents reported to 12; and decreased 25% in the comparison counties, falling from 52 incidents reported to 39. The 25 percentage point difference in decline in property crime between comparison and NGC counties indicates a greater improvement in social capital in the latter. When standardized per 1000 population, the NGC counties saw property crime decrease by 45%, from 6.67 to 3.68 per 1000. The decline in the comparison counties was not as great; property crime per 1000 declined from 52 to 39 per 1000 for a 16% decline.

The number of cases of misdemeanors in Eddy and Foster County increased dramatically from 1990 to 2000. In NGC counties, misdemeanors increased 94% from 66 incidents reported to 128. During this same period, the comparison counties had only a 2% increase in misdemeanors (from 125 incidences reported to 127). The 92 percentage point difference in increase in misdemeanors indicates a decline in social capital. When the data was standardized per 1000 population, misdemeanors increased from 19 to 39 per 1000 in the NGC counties for a 100% increase, but they only increased from 125 to 127 per 1000 in the comparison counties for a 11.5% increase.

The number of felonies in Eddy and Foster County increased dramatically from 1990 to 2000. Felonies increased from three incidences reported to seven for a 133% increase. During this same period, felonies in comparison counties increased from 8 to 15 for an 88% increase. The 45 percentage point difference in the increase in felonies between comparison and NGC counties indicates a decline in social capital. Again, when the data was standardized per 1000, felonies increased from .86 to 2 per 1000 in the NGC counties for a 1.325% increase. Felonies also increased in the comparison counties from 8 to 15 per 1000 for a 1.118% increase.

The number of small claims court cases in Eddy and Foster County increased from 38 to 48, a 26% increase. Over this same time period, the number of small claims filed in the comparison counties decreased 5%, from 38 to 36. The 31 percentage point difference between comparison and NGC counties in small claims court cases filed indicates a decline in social capital. When the data was standardized per 1000, small claims cases increased from 38 to 46 per 1000 in the NGC counties for a 29% increase. In the comparison counties, however, small claims cases increased from 7.8 to 8.3 per 1000 for a 7% increase.

SUMMARY AND CONCLUSIONS

Table 2 summarizes the outcome of the analysis of the impacts on the community capitals for the NGC counties compared to the comparison counties.

For financial capital, the five measures all indicate an improvement in financial capital for the NGC counties. Financial capital is defined as money that is used for investment rather than consumption, and it includes income, wealth, security, and investments. This analysis relied

TABLE 2
Comparison of NGC and Comparison Counties on Measures of Community Capital

<i>Community capital</i>	<i>1990</i>	<i>2000</i>	<i>Absolute change</i>	<i>Percentage change</i>
Financial: Annual average employment				
Comparison counties	1027	1,255	228	13
NGC counties	1227	1,386	159	22
Financial: Unemployment rate				
Comparison counties	4.90	3.90	1.0	-6
NGC counties	3.84	3.62	.42	-20
Financial: Average annual wage				
Comparison counties	10,812	11,916	1704	5
NGC counties	10,631	11,241	610	10
Financial: Persons on food stamps				
Comparison counties	171	99	-72	-42
NGC counties	335	220	-15	-34
Financial: Sales tax revenue				
Comparison counties	468,409	492,471	24,062	-4
NGC counties	448,557	429,836	-18,721	-5
Built: Number of Firms				
Comparison counties	178	162	-16	-9
NGC counties	148	138	-8	-5
Built: Building Permit Value				
Comparison counties	34,468	111,935	77,467	225
NGC counties	78,493	215,389	136,896	174
Human: Student-teacher ratios				
Comparison counties	13.0	14.0	1.0	8
NGC counties	13.3	16.3	3.3	23
Human: Cost per pupil				
Comparison counties	2,160	3,320	1,160	54
NGC counties	2,025	2,381	356	18
Human: Dropout rate				
Comparison counties	1.6	1.4	-.2	-13
NGC counties	1.6	2.2	+.6	38
Human: Post high school college				
Comparison counties	53	50	-3	-6
NGC counties	40	49	9	23
Human: Population				
Comparison counties	4,854	4,327	-527	-11
NGC counties	3,446	3,258	-188	-5
Human: Minority student enrollment				
Comparison counties	48	66	18	38
NGC counties	22	68	46	209
Social: Property crime				
Comparison counties	52	39	-13	-25
NGC counties	23	12	-11	-48
Social: Misdemeanors				
Comparison counties	125	127	2	2
NGC counties	66	128	62	94

(Continued)

TABLE 2
Continued

<i>Community capital</i>	<i>1990</i>	<i>2000</i>	<i>Absolute change</i>	<i>Percentage change</i>
<i>Social: Felonies</i>				
Comparison counties	8	15	7	88
NGC counties	3	7	4	133
<i>Social: Small claims court cases</i>				
Comparison counties	38	36	-2	-5
NGC counties	38	48	10	26

on measures of income to individuals (average annual wages) and governments (sales tax revenues), as well as measures of security (employment and poverty). Not all income will be used for investment, as much of it will be used for consumption; however, the greater the security of a community's population the more income it will have to invest.

Average annual employment, average annual wages, and sales tax revenues all increased in the NGC counties compared to other farm-dependent counties indicating an improvement in financial capital. In addition, the unemployment rate and persons on Food Stamps both decreased in the NGC counties relative to the comparison counties indicating an improvement in financial capital. These measures of financial capital are the ones typically cited as benefits of the presence of NGCs.

The results were mixed in regard to the changes in built capital for NGC counties. The number of firms is an indicator of the extent to which financial capital has been converted into physical installations and facilities supporting productive activities in a community. The number of firms decreased at a slower rate in the NGC counties relative to the comparison counties, thereby, indicating an improvement in built capital in the former. Building permit value would be an example of converting financial capital into physical infrastructure which contributes to building other capitals. In regard to building permit value, however, the results were mixed with comparison counties experiencing greater absolute improvement while NGC counties experienced greater percentage improvement.

For human capital, the six measures were split with three indicating improvement and three indicating declines in human capital in the NGC counties. Both primary and secondary education is one major way in which a community invests in human capital. The greater the extent to which a community invests in human capital development, the greater the skills, knowledge and experience available to that community. In regard to education as a component of human capital, both inputs and outputs are important. For the three input measures, the student-teacher ratio was higher and the expenditures per pupil was lower in the NGC counties relative to the comparison counties, indicating lower investment in human capital in the former. Concerning the outcome measures, the drop-out rate was higher as was the students' post high school education plans in NGC counties indicating both a decline and an improvement in human capital.

The ultimate measures of human capital are population size and population diversity: The greater the population base the greater the pool of human capital, and the greater the diversity of the population, the greater the potential for diverse perspectives and ideas in human capital. The measures indicated an improvement in human capital for the NGC counties with their

populations not declining as fast and the minority population growing at a faster rate than in the comparison counties.

All but one measure of social capital indicated decline in that community capital for NGC counties relative to comparison counties. Because social capital is community property that resides in relationships, it is difficult to measure directly. Indirect indicators, however, of mutual trust, reciprocity, shared norms, and identity can be used as substitutes. Only for property crime was there an improvement in social capital for the NGC counties relative to the comparison counties indicating that traditional measures of social control relative to property security still operate in NGC counties. The analysis for the other three measures—misdemeanors, felonies, and small claims court cases—indicated a decline in social capital for the NGC counties. An increase in small claims cases reflects increased level of acrimony in the NGC counties and demonstrates a lack of trust and decreased communication. An increase in misdemeanors in NGC counties reflects disagreements over property conflicts and personal injury. Although misdemeanors are not criminal acts, they are disputes that are eligible for resolution through the formal legal system. An increase in felonies indicates that informal mechanisms of social control relative to personal safety have weakened.

CONCLUSIONS

The outcome of a cooperative community development process would be to maximize the positive externalities and minimize the negative externalities during the process of cooperative community development (Nadeau & Wilson, 2001, p. 65). This assessment process is similar to the questions that Flora (1999, p. 21) suggests leaders should ask themselves in determining whether community development projects have been successful. Lost in the discussion, however, was whether the externalities associated with locality-specific, traditional cooperatives were different from those of regionally-specific, NGCs. While the positive multipliers may occur to the members in the region, the negative externalities associated with the physical facility may be localized to the community where the facility is located. The research question is whether the presence of NGCs, whose members do not necessarily live in the community, has secondary, community impacts different from traditional cooperatives which are more locally based? The focus of this research was two counties with new generation cooperatives compared with other farming-dependent counties. The purpose was to determine whether the impacts on financial, built, human, and social capital were different between the two new generation counties and the remaining farming-dependent counties.

Relative to the other farm-dependent counties, 10 of the measures indicated an improvement in community capitals in the NGC counties, 6 indicated a decline in community capitals, and 1 was mixed. The results were most favorable for financial capital with all five, the measures indicating an improvement for the NGC counties. For built capital, the score was mixed with one measure indicating improvement in absolute but not percentage terms, while the other indicated in improvement in that the decline was not as severe as for the other counties. For human capital, the results were spilt with three indicating improvement relative to the other counties and three indicating declines for the NGC counties. Finally, for social capital, the results were least favorable with only one measure indicating improvement relative to the other counties, while the remaining three indicating declines for the NGC counties.

It is not unexpected that the measures for financial capital indicated improvements for the new generation counties. Improvements in indicators of financial capital are typically cited as proponents or developers of NGCs. For human capital, improvements in population characteristics and educational performance are typically expected. That was confirmed for measures of population characteristics; population diversity increased and the decline in population was reduced. The input measures for human capital, however, indicated decreasing financial capital invested in human capital, and the output measures indicated both improved and declining performance in human capital. Finally, the measures of social capital indicated that except for one measure, social capital declined in the new generation counties. The decline in social capital is never mentioned in any of the case studies of new generation cooperatives, nor are the mixed results regarding human capital ever discussed.

This comparative case study is suggestive of the kinds of changes in community capitals that may be experienced in communities in which NGCs may be located. What is unresolved with this analysis is whether we are analyzing the impacts on community capitals of the presence of a NGC or whether we are analyzing the impacts on community capitals of a physical plant operated by a NGC. Does it make a difference to a community whether the physical facility is operated by a cooperative or an IOF? When the organizational purposes of NGCs are very similar to those of IOFs, does the fact the facility is operated by a NGC have any different outcome than a similar facility operated by an IOF? Advocates of NGCs and of cooperative community developments argue that, unlike IOFs, because cooperatives are owned by their members, they take into account the externalities associated with their development and operation and attempt to mitigate them where possible. This research would indicate that NGCs should anticipate deleterious impacts on human and social capital and should attempt to mitigate those impacts where and if possible.

Because of issues associated with data accessibility, comparability, and quality, some community capitals were not adequately measured or were not measured at all. Because data was collected at various administrative levels (city, county, school district), data was aggregated to the county level wherever possible. However, whether the county is the most appropriate unit of analysis to consider the impacts on community capitals is open to debate. Labor market areas or commuting zones were considered as alternative units of analysis, but because of the size of both areas, the loss of units of analysis was substantial, and the areas were too large to be substantively meaningful.

NOTES

1. For further discussion about incorporating space and place in sociological research, see Gieryn (2000).
2. Sapiro cooperatives are characterized by a single commodity focus, long-term producer contracts, dominant market share, and orderly marketing. Nourse cooperatives compete with investor-owned firms, control a modest share of the market, and perform a disciplinary role. For more information on Nourse and Sapiro cooperatives, see Torgerson, Reynolds, and Gray (1998).
3. The measurement of community capitals draws upon the work of Flora (1999) in her analysis of the impacts of corporate hog farming in Oklahoma.
4. Another interpretation may be that these costs are artifacts of a high decline in number of students relative to the fixed costs in the comparison counties or to more students concentrated in the urban area, reducing budget costs.
5. This section draws heavily on Patrie (1998b).

6. From Torgerson et al. (1998).
7. Torgerson et al. (1998).

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APPENDIX A

Dakota Growers Pasta Company⁵ and North American Bison Cooperatives

The idea of organizing a durum processing cooperative probably began when the state economic development commission had tried unsuccessfully to recruit a large pasta cooperative to the state. In mid-1990, interested parties from the state rural electric cooperative association, a regional rural electric cooperative, a regional planning council, and a durum growers association met to discuss the formation of a cooperative. Later, two prominent farmers and members of the state legislature joined the effort. This group authorized a feasibility study and secured funds from a variety of private and public sources.

Later, a steering committee comprised of all principle contributors to the feasibility study was organized, and this steering committee became the interim board of the cooperative. The interim board secured funding from a state agricultural development agency which was matched by funds from the durum growers association. The interim board secured legal assistance to become incorporated and accounting services to develop a business plan. A search committee hired an executive director and other staff.

When the legal requirements were met and a business plan completed, the board began the equity drive. Because the plant was designed to use 3 million bushels of durum annually; the equity share price was set at \$3.85 a bushel which was determined by dividing the total equity needed (35%) by the number of shares. The board thought the cost per share was too high, so it arranged for the Bank of North Dakota to provide some of the financing which would be subordinated to the Bank of Cooperatives. The state bank required that producers personally commit a one per-bushel basis to cover any default, and it also required that all producer-investors have a minimum net worth of \$50,000. Upon bank approval, the cooperative rented office space and designed the campaign.

In 1992 after 33 equity drive meetings conducted by the chairperson of the board, the executive director of the cooperative, and other key personnel; 1200 durum farmers from North Dakota, western Minnesota, and eastern Montana had pledged \$12.5 million in equity toward a \$40 million durum mill and pasta plant by purchasing stock at \$3.85 per share of a minimum purchase of 1500 equity shares and one \$125 voting membership share. The remainder of the financing was secured through the St. Paul Bank of Cooperatives, the Bank of North Dakota, and rural electric cooperatives. In 1992 Carrington was selected as the site for the \$40 million, 3.2 million bushel plant capable of producing 120 million pounds of pasta. At full production by 1995, the cooperative doubled its capacity in 1996 and added another production line in 1997. To increase delivery of durum, in 1997 the directors voted for a 3 for 2 equity stock split in order to bring durum delivery obligations in line with expanded plant capacity.

Even with that expansion, demand still exceeded capacity, so in 1998 the cooperative purchased Primo Piatto from Borden with included its two production plants in Minnesota. The cooperative had another stock offering to raise equity to purchase the company and to finance a doubling of the milling capacity to provide enough semolina for the two new plants. The shares were sold on a priority basis to existing members at \$7.50 per share and to new members at \$11.00 a share. Although the first year (1994) had a negative .05 earnings per share, from 1995 through 2000, earnings per share were positive for six years (.30, 1995; .46, 1996; .94,

1997; 1.27, 1998; .91, 1999; .68, 2000), after which they became mixed (−.16, 2001; .16, 2002; −.03, 2003; .03, 2004; .19, 2005; .30, 2005; .14, 2006).

Between 2002 and 2006, shares of stock were bought and sold through two brokerage houses (Alerus Securities and Ag Stock Trade). The stock was not publicly traded, and the brokerage houses only facilitated the transfer of stock between buyers and sellers. Typically, the shares sold for between \$3 and \$6 a share. In December 2006, the company announced a buyback of 4 million (30%) of the shares of stock at \$10 a share. The company raised the money through borrowing and selling of 1 million shares of a newly created class of preferred stock shares to both MCC Capital, Inc. and LaBella Holdings at a purchase price of \$10 per share for gross proceeds of \$20 million. In addition, the company secured a \$20 million dollar term loan from CoBank. MVC Capital was already the company's largest shareholder with an 8.2% stake which occurred when it invested in the company's low carb pasta. At close of the offer in May, 2007, the company had accepted 4 million shares of common stock tendered to it for purchase. In deciding which shares to purchase, the company used three criteria: It bought all tendered shares from shareholders who owned less than 1000 shares; it bought the greater of 1000 shares of common stock of 30% of tendering shareholders' total ownership; or because more shares were offered for sale than the company could purchase the company purchased shares on a pro rata basis based on a formula of the percent of a shareholder's tendered but unpurchased shares to the total number of unpurchased but tendered shares ("Dakota Growers," 2005; Dakota Growers Pasta Company, 2005).

North American Bison Company was organized in 1994 to process and market bison for its 330 rancher members. From the beginning it was beset with management policy problems the least of which was the required contracting of members' animals at one per share of ownership at set prices though the co-op did not have demand to sell all of the bison meat which piled up in warehouses. The company hired bought two distribution companies to help eliminate the inventory, but those purchases only added to the debt and overhead costs. By mid-2003, members were owed deferred payments dated to 2000 of \$22 million. After filing for Chapter 11, the company invested some \$650,000 in capital improvements, better utilized the capacity of the plant through custom killing, and launched a new brand name which consolidated the various brand names which had been used to market the company's bison meat. By 2005, the company wiped away the \$24 million in producer debt with equity stock in the cooperative. The cooperative and North Dakota State University organized a limited liability company to slaughter, process, and market natural beef (Pates, 2004, 2005, 2006, 2007).

APPENDIX B

Data and Data Sources

Any attempt to use existing, secondary data to measure the community capitals concepts resulted in problems of data collection, data accessibility, and data completeness. Finding databases that provided county-level data for each of the 10 years of the study was difficult. Some agencies do not collect data annually. City police and county sheriff departments either did not report their Uniform Crime Report data on a regular basis or had no data to report. Job Service of North

Dakota groups data differently within a county within a particular year, and it groups data differently across counties in the same year in order to avoid divulging information that would uniquely identify the only industry within an industrial category at the county level. Because of the confidentiality of the data, Job Services would not release the ungrouped data for purposes of analysis. Unfortunately, the inaccessibility of the county-level data on covered employment, wages, and firms by industry resulted in a loss of data that would have been very helpful to the analysis. School districts do not report data at the county level, however, researchers at the Department of Public Instruction were able to disaggregate and reassemble the district level data into county-level data. The dollar variables for each year for each county (total wages, average wages, per capita income, tax revenue, sales tax revenue, building permit value, income, food stamp issuance, taxable valuation per pupil, total revenue, and cost per pupil) were adjusted into constant dollars to allow for inflation.

Number of firms, average employment, total wages, average wages, labor force, employed, unemployed, unemployment rate, per capita income, taxable revenue, sales tax revenue, building permit value, Food stamp participation, number of households, number of persons, issuance: North Dakota Data Warehouse, Job Service of North Dakota (see <http://www.state.nd.us/jsnd/warehouse.htm>).

Poverty rate: U.S. Department of Agriculture (see: <http://www.ers.usda.gov/Data/PovertyRates/PovListpct.asp?ST=ND&views=Percent>).

Number of graduates, post high school education, number of students by ethnic background, K-12 enrollment, taxable valuation by pupil, total revenue, cost per pupil, student-teacher ratio, dropout rates: Department of Public Instruction.

Burglary, larceny/theft, motor vehicle theft total property crime: Uniform Crime Reports, Office of the Attorney General Bureau of Criminal Investigation, Information Service Manager.

Misdemeanors, felonies, small claims, other civil cases: North Dakota Judicial System Annual Reports, Office of the Attorney General.

Population: U.S. Census Bureau.