# Success Factors for Value-Added New Generation Cooperatives

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## Introduction

Agricultural producers have long sought to capture a greater share of the downstream value their commodities create. As rural population and incomes dwindle, the need to do so is becoming increasingly more pressing. Farmers have a long tradition of cooperative behavior, both in purchasing inputs and in collectively marketing their raw products. Today, there are more than 40,000 cooperatives in the United States, generating over $120 billion in economic activity (United States Department of Agriculture). Most recently, in an effort to add value to their products, farmers have begun to vertically integrate into processing activities, often in the form of New Generation Cooperatives (NGCs). In 1997, the "value added" of farmer cooperatives topped $10 billion (Kraenzle and Cummins).

Typically, an NGC (previously called a New Wave Cooperative, or Next Generation Cooperative) retains the traditional cooperative tenets of one member/one vote (though this may vary by state) and dividends based on patronage, but has two important additional characteristics (Stephanson, Fulton, and Harris). The first is delivery rights tied to share issuance. Investors in NGCs typically help fund construction or purchase of a processing facility through the purchase of shares which entail the obligation to deliver one unit of the applicable commodity per share. The second unique NGC characteristic is restricted membership. Membership is restricted to those who provide the equity capital (and thus incur the risk) for the venture, and new shares are generally not issued unless the processing facility requires expansion. Usually, shares in NGCs can be traded, although the approval of the NGC board of directors is often required. This is to done to prevent private corporations from acquiring control of the

cooperative. Cook proposes a four-stage model of cooperative genesis, growth, and demise, and shows how NGCs are a natural outcome in the process.

Torgerson (2001a) points out that research is essential to learning about the success and failure of cooperatives. The purpose of this paper is to determine the importance of various factors to the success of NGCs. This will be carried out in two ways. The first employs data from a survey which asks NGC managers to rank factors in various categories in order of their importance to NGC success. The second uses data from another survey which attempts to discover which broad factors impact the financial success of NGCs. Results of the research reported here will allow the quantification of perceptions that exist about the factors that are important to new generation cooperatives. These enterprises have purposes and goals that are distinct from traditional cooperatives, but are also distinct from investor owned firms. As such, knowledge about those factors important to NGC success can provide important information to both existing and new NGCs, as well as to extension agents and government personnel who are involved in their development.

**Surveys**

Data for this paper were collected via two separate surveys of NGCs operating in several agricultural industries. The first was designed to have managers or directors of NGCs rank five factors in each of ten categories from most to least important to the success of their cooperative. Factors to be included in the survey were identified through a review of cooperative and business literature (e.g. Cooper), and through meetings with extension personnel at Oklahoma State University. Each of the five factors in a category was assigned a value from 1 to 5, with 1 being assigned to the factor perceived to be most

important to the respondent's own NGC. Each number could be used only once in each category, with no ties in importance being assigned. Respondents were also asked to rank the categories themselves in order of importance, from 1 to 10, using each ranking only once.

The list of potential respondents came mainly from the Illinois Institute for Rural Affairs' (IIRA) "Directory of New Generation Cooperatives", with additional NGCs identified via discussions with extension personnel and an internet search. A list of 72 potential respondents was identified, representing most of the NGCs currently in existence.[1] Each NGC was contacted in advance to identify a suitable recipient and solicit participation, and the survey was then mailed accordingly. After three mailings, a 75% response rate was attained.[2] Respondents were then placed into one of eight groups, each representing closely related commodities or processing activities. If a respondent did not clearly fit into one of the eight commodity/activity groups, it was placed in a ninth group, which included one anonymous response. Table 1 shows the commodity/activity groups and the number of respondents classified into each.

The second survey was sent out to 47 NGCs that responded to the first survey. It requested data on the NGCs' number of employees, number of members, number of years the NGC had been operating, total members' equity, total sales, and net income for the most recent operating year. Respondents were also asked to relate what *they* thought was a measure of success for an NGC, and how their cooperative performed relative to that measure. The goal of the second survey was to quantify NGC success and attempt to tie it to tangible characteristics of the cooperative. A separate survey was undertaken to accomplish this because it was believed that the sensitive nature of the information

requested in the second survey would reduce the response rate. After three mailings, a 60% response rate was attained, although not all requested information was provided by each respondent.

**Unweighted Mean Factor Ratings**

Figures 1 to 10 show the individual category factor ratings given by the 50 respondents. The horizontal bars illustrate the distribution of aggregate responses for each factor, with the number of responses given within or just after each region within each bar. The text below the bars gives the number of responses (N) to each factor rating, the mean, and the median response. Because not each of the 50 respondents rated each category or each factor, the number of responses within each category ranges from 44 to 49. Table 2 gives the mean responses for each factor for the groups defined in Table 1. Numbers in parentheses in Table 2 denote statistically significant differences in least-squares (LS) mean responses between groups at the 10% significance level. LS means estimate the marginal means over a balanced population (SAS Institute, Inc.), and were used because of the different number of respondents in each category. It should be noted that while significantly different LS means between group factor ratings are strong evidence of different mean ratings, lack of significance in LS mean differences does not necessarily mean the groups rated factors the same. Because of the small group sizes, LS means may not be able to determine statistically significant differences with an appropriate degree of certainty.

Figure 1 shows that "product quality", was ranked most important in the "product related" category. "Customer service" was rated the second most important, "product uniqueness" third, "technology incorporated" fourth, and "brand recognition" fifth.

There are some noteworthy results of LS means comparisons of the factors in the "Product Related" category as shown in Table 2. Respondents in Group 6, which includes perishable table-ready products, rated "product uniqueness" significantly higher than did respondents in Group 1 (Corn Processors/Ethanol/Energy) and Group 7 (Coffee/Sugar/Table Nuts). That Group 1 respondents did not rate this factor very high is not surprising, given that users of their products are mostly industrial and there is little to distinguish their product from competitors'. The finding of significant differences for this factor between Groups 6 and 7 is more interesting, since they both produce final consumer products. It is likely that the significant difference in responses is due to the more perishable nature of products in Group 6 versus Group 7, and to the fact that several of the NGCs in Group 6 specialize in the marketing of organic produce, itself an especially unique good. Table 2 also reveals significant differences in LS means for the "technology incorporated" factor. Group 1 and Group 4 (Oilseed Processors) both ranked this factor significantly higher than did Group 2 (Livestock) and Group 6. This result is not unexpected, given that the NGCs in the former two groups are involved in processing, whereas those in the latter two groups focus on marketing activities. "Brand recognition" was rated significantly higher by NGCs in Group 8 (Producer Alliances) than in Group 9 (Other/Anonymous). This may be due to the fact that Group 9 NGCs are mostly involved in industries with less processed products and hence little reliance on brand names.

"Labor force quality" was the highest ranked factor in the "Human Resource/ Organizational" category, with more than half of the respondents rating it most important (Figure 2). By simple arithmetic means, the second through fifth most important factors

were “communication within co-op”, “communication with board”, “communication with members”, and “use of outside experts”. It was expected that “communication with board” would be highly rated because, as Wadsworth (2000) observes, conflicts between managers and board members, which are disruptive to smooth corporate governance, occasionally arise. Wadsworth (2001) further finds that effective member relations are essential to cooperative success. Additionally, Trechter and King outline how effective cooperative communication can help build member commitment, and Allen discusses how a strong communication network was important to the success of a prominent nut cooperative.

LS means comparisons suggest that the “use of outside experts” factor was significantly more important to Group 2 respondents than to those in Groups 6 or 7. This could be due to the fact that NGCs in the latter groups are involved in more mature industries where virtually all needed expertise has been internalized through the hiring of experienced managers and technology specialists. Also, those livestock NGCs that are involved in processing are more likely to have to use outside experts to meet special regulatory requirements. For instance, HACCP, waste handling, and environmental impacts may all represent greater concerns to NGCs in Group 2 than those in Groups 6 and 7. Although it did not show up in the LS means comparisons, in general those groups (i.e. 1, 4, 5) that are highly mechanized had higher rankings for “quality of labor force” than those who are more focused on marketing (i.e. 2, 6).

The “Government/Regulatory” category had the lowest response rate, with only 44 or 45 of the 50 respondents rating the various factors, as shown in Figure 3. Reluctance to rank the factors in this category may be a reflection of the perception on

the part of NGC managers that government does not have an important role to play in their operation. "Co-op existence laws", "co-op tax advantages (i.e. 521 tax status)"[3], and "direct government agency funding" were rated first, second, and third by simple arithmetic means, with "Demand enhanced by regulation" and "government planning support/technical assistance" being ranked fourth and fifth most important.

"Co-op tax advantages (i.e. 521 tax status)" was revealed by LS means to be significantly more important to NGCs in Group 5 (which contained relatively "newer" NGCs) than Group 7 (relatively "older"). NGCs in the latter group may have been less able to take advantage of 521 tax status because they already had an institutional structure in place when the legislation was passed. Although LS means do not show a significant difference, "demand enhanced by regulation" is rated substantially more highly by Group 1 NGCs than by those in any other group. This is because most in that group are involved in the production of ethanol, which benefits from government regulation in two ways: first, regulations requiring ethanol blended gasoline exist or are pending in several states. Second, corn processing plants receive a large government subsidy if they produce at least one million gallons per month. That is likely the reason that most ethanol NGCs have almost exactly that production capacity.

"Low operating costs" and "member capital base" were virtually tied as the most important factor in the "Financing and Costs" category (Figure 4). The former factor was given a better rank on average across the respondents, but the latter was ranked as most important in the category by a higher number of respondents. "Low financing costs", came in third, followed by "output price stability" and "input price stability".

Although no significant differences among groups were revealed by LS means analysis, some interesting comparisons can be made. For instance, "low operating costs" was rated most important for Groups 3, 4, 6, and 7, whereas "member capital base" was the top choice for Groups 1, 2, 5, and 8. Many NGCs in the latter groups have substantial regulatory requirements to meet and incur considerable expense in meeting them. For instance, ethanol producers must adhere to regulations by the Bureau of Alcohol, Tobacco, and Firearms, as well as the Department of Energy. They are also highly automated, requiring considerable capital investment. So are NGCs in Group 5, who must build or purchase a flour mill to handle their processing requirements. Some Group 2 (Livestock) NGCs, similarly, must adhere to food safety guidelines, as required by the United States Department of Agriculture (USDA) Food Safety and Inspection Service (FSIS). Gehrke and Matson note that lack of capital was the primary cause of failure for the earliest cooperative meatpacking efforts from 1914-1920. Campbell (2001) observes that Farmland, the most successful livestock NGC, could not have survived without requiring a large initial investment by members. Co-ops that have these types of requirements need large cash infusions and are likely to consider "member capital base" relatively more important than an NGC focused mainly on marketing activities, for example, an organic vegetable cooperative in Group 6.

Figure 5 shows that "Proximity to inputs" is ranked the highest in the "Logistics" category, followed by "transportation/ distribution infrastructure" and "site selection". Note that the number of respondents who rated each of those three factors as most important in the category are very similar. "Proximity to customers" is rated as the fourth most important factor in the category, followed by "Geographical member dispersion".

NGCs in Groups 5 and 6 both rated "proximity to customers" more important than did those in Group 1, according to LS means. This is due to the perishable nature of the products in the former two groups versus the latter. Most of the NGCs in Group 5 produce flour and/or flour-based products, and most of the those in Group 6 produce perishable table-ready produce. Both of these products must be handled carefully, and neither can be stored for long periods of time without risk of contamination or spoilage. Ethanol, which is the main product of Group 1 NGCs, can be stored and transported more easily and with less risk of insect infestation, so it is not surprising that NGCs in that group rated "proximity to customers" as significantly less important than did their counterparts from Groups 5 and 6. Conversely, "proximity to inputs" was rated by Group 1 NGCs more highly than by those in Group 5. To save transportation costs for bulky corn, ethanol is usually made "on the spot", with co-products then used in nearby feedlots or dairy operations. The end product of wheat processors, conversely, is easily contaminated and so should be produced close to end markets to reduce shipping costs and losses. For this type of NGC, the input rather than the output is shipped nearer to end use points, since a high percentage of the input is transformed into a desirable output.

"Strong selling/marketing effort" was rated as most important in the "Operational" category by 17 of the respondents (Figure 6), with "business volume", "risk management", and "targeted customer base" were second, third, and fourth. "Vertical integration" was the lowest rated factor, perhaps indicating that NGCs do not consider further downstream marketing activities to be important. Perhaps this is because they have vertically integrated as far as they can while maintaining a market presence.

The initial feasibility study may have shown that further integration is infeasible, and there could be simply be too much uncertainty associated with going any farther.

Group 6 rates "targeted customer base" as significantly more important than does either of Groups 1 or 5 according to LS means. This is not unexpected due to the influence of specific consumer tastes on the activities of NGCs in that group. For instance, many NGCs in Group 6 are organic vegetable cooperatives, and target their products to very health-conscious produce buyers. NGCs in Groups 1 and 5, on the other hand, produce more homogeneous and commonly used products and do not target specific consumer segments as customers. This is not to say that NGCs in those two groups do not focus on selling. In fact, Table 2 shows that "strong selling/marketing effort" is the most important factor in the category to NGCs in both Groups 1 and 5. Group 7, on the other hand, rated "business volume" as most important in the category, reflecting their reliance on high volume/low margin sales.

In the "Industry" category, "reputation" and "market size" have the same mean rating, although the former has a lower median and more respondents rated it highest in the category (Figure 7). The third through fifth rated factors are "number of competitors", "competitors' prices", and "economic climate". Groups 2, 3, and 6 all rated "reputation" significantly higher than did Group 5 according to LS means. The simple means given in Table 2 also shows that Groups 1, 4, and 7 also did not rate "reputation" as highly as did Groups 2, 3, and 6. This indicates that those NGCs that are more mechanized or processing focused place less importance on reputation than do NGCs that have more of a marketing focus. "Competitors' prices" is rated as most important by Group 7, again reflecting the position of many Group 7 NGCs in a high volume/low margin industry.

Those in Group 8 agreed that competitors' prices were most important; this may reflect the broad-thinking competitive scope of the producer alliance NGCs.

Adrian and Green conducted a survey of cooperative managers, and found them to be knowledgeable within several key areas. Figure 8 shows that in the "Managerial" category, "managers with knowledge of industry", "experienced managers", and "full-time general manager" are first, second, and third most important. "Continuity of management" was rated as the fourth most important in the category, and "ongoing managerial training" was the least important.

No significant differences in LS means were found for the factors in this category, but inspection of Table 2 reveals some trends across all groups. Since the survey was filled out mostly by NGC managers, it is interesting to see how they rate the factors most closely associated with their own duties. For instance, five of the nine groups rated "managers with industry knowledge" as the most important factor in the category, but none rated "continuity of management" the highest on average. Also, every group except for Group 7 rated "ongoing managerial training" as the least important factor in the category, and for Group 7 it was the second least important. This may be because manager knowledge is commodity and/or technology specific. Additional training may only be required as new commodities or technologies are included in the NGC's business.

Respondents rated "business strategy" and "product focus" first and second most important in the "Strategic" category according to simple mean (Figure 9). This suggests that these enterprises are aware of the importance of strategic planning. Both of those factors were rated higher than "ongoing planning/checking" and "multiple-market sales", which were tied for third. The former had a higher mean ranking, but the latter was rated

most important by more overall respondents. The least important factor in the category was found to be "enforce member agreements", indicating that NGCs did not encounter many difficulties in that area. This is because patronage dividends are based on deliveries to the cooperative, so it is in members' best interests to adhere to their agreements.

No significant differences between the LS means of the various groups were found. Nevertheless, there was consistency in the mean rankings among groups. For instance, eight of the nine groups rated "enforce member agreements" as the least important factor in the category, echoing the results shown in Figure 9. "Product focus" was rated most important on average by more groups than "business strategy", even though the latter was chosen most important by more individual NGCs. This confirms the idea that the two factors were virtually tied for the distinction of being most important in the "Strategic" category.

"Local champion(s) or leader(s)" was clearly rated most important in the "Planning and Development" category, with more than half of the respondents ranking it as such (Figure 10). "Steering committee" and "feasibility study" were second and third, respectively, in terms of simple means, followed by "alliance/partnership"and "proximity to other successful co-ops".

Significant differences between any of the LS means for the different groups were not found. However, it is interesting to note that "proximity to successful co-ops" was rated least important or tied for least important for each of the nine groups. This indicates that NGCs do not believe an important factor to success is locating close to other successful cooperatives, even though they may serve as inspiration for producers to

join the new venture. It is also intriguing that "alliance/partnership" was rated second lowest or tied for second lowest by all of the groups. Since NGCs are the result of cooperative behavior on the part of producers, it is odd that alliances or partnerships with existing co-ops are not important to them.

**Category Ratings**

The distribution of responses for the ten overall categories is shown in Figures 11 and 12. "Planning and Development", with a mean of 3.7, was rated the most important of all categories, followed closely by "Financing and Costs" with a mean of 3.8. The third most important was "Managerial" (mean 4.0), and then "Operational" (4.7) at fourth, fifth was "Strategic" (5.7), sixth was "Product Related" (5.8), "Industry" (6.1) was seventh, "Human Resource/Organizational" (6.5) was eighth, ninth was "Logistics" (7.0), and "Government/Regulatory Environment" was rated the least most important overall category, with a mean ranking of 7.0.

Table 2 shows the mean ratings for each of the 10 categories for all 9 groups, and illustrates that there were some statistical differences between the LS mean rankings of some of the categories. For instance, the "Product Related" category was ranked significantly less important for Group 1 NGCs than for Group 6 or 8. For Group 6, this is not unexpected since the those in that group have products that are perishable, and product quality is easily discernable to consumers. NGCs in Group 1, on the other hand, are largely ethanol producers whose product is homogenous in terms of quality. A similar situation exists for Group 4 (though the LS means were not significantly different); quality is not a major distinguishing characteristic of the output oilseed processors produce.

Significant differences were also found for the LS means of Group 1 (which rated it sixth most important) versus Group 6 (which rated it tied for least important) for the "Government/Regulatory Environment" category. This is largely due to the importance of the "demand enhanced by regulation" factor to Group 1 NGCs, for reasons previously outlined. NGCs in Group 6, by contrast, are involved in production of consumer-ready foodstuffs, and may consider government regulation of their industry excessive. Groups 3, 5, 7, and 8 also rated this category as least important of the ten, and no group had it rated higher than sixth overall.

There was a relatively even split of categories receiving the highest ranking from respondents. "Planning and Development" and "Financing and Costs" were each ranked the highest by three groups (one ranking for the latter category was a tie). "Managerial" and "Product Related" were the most important for two groups each. That the latter was ranked highest for two groups is interesting given that it was only ranked sixth overall by all respondents combined. This reflects the fact that it was not ranked highly by NGCs in Group 1, which was the largest group and thus had the most influence on the overall responses shown in Figures 11 and 12.

**Weighted Overall Factor Rankings**

Individual factor rankings for each factor for each NGC can be calculated by weighting the within-category factor rank by the overall category rank. For example, the factor rated highest by an NGC in its highest rated category is accordingly the most important of the 50 total factors. Similarly, the factor rated the lowest in the lowest rated category is the least important of all the factors to an NGC. When aggregated over all

respondents, or even all NGCs in a group, such a weighting should allow direct rankings of factors across various categories.

This calculation was carried out for each factor for each respondent, and then averaged over all respondents. This yielded a weighted mean rank for each factor; the factors were then ranked from most to least important by lowest average weighted rating. The same calculation can be carried out for factors within individual groups. The factor rankings are presented in Table 3, overall and for each group.

"Local champion(s) or leader(s)" was ranked as the most important success factor across all NGCs. It was ranked highest of the 50 factors by two of the nine groups, and was in the top five for four more groups. "Low operating costs" was ranked second most important, and was also ranked highest by two of nine groups, with an additional two groups placing it in the top five. Third was "steering committee", which did not receive the highest rankings from any groups, but was in the top five for four groups and in the top ten for an additional four. The fourth most important factor was "member capital base", ranked in the top five by three groups and in the top ten by another five. Rounding out the top five was the "feasibility study" factor, ranked most important overall by one group, in the top five by two more, and in the top ten by another two groups.

Eight of the ten highest ranking factors came from three categories. The importance of "Planning and Development" category was evident in the overall weighted factor rankings, with three of the five most important factors coming from that category. The "Financing and Costs" category, which contained the other two factors ranked in the top five, was also confirmed as important to NGCs. Three of the five factors ranked six through ten came from the "Managerial" category, including "managers with knowledge

of industry", which was ranked sixth overall, "experienced managers, ranked eighth, and "full-time general manager", coming in at tenth. "Product quality", a factor from the "Product Related" category, came in at seventh most important. At ninth was "strong selling/marketing effort" from the "Operational" category.

The least important factor across all NGCs was found to be "geographical member dispersion" from the "Logistics" category. That factor was ranked among the five least important by seven of the nine groups. "Government planning support/technical assistance" from the "Government/Regulatory Environment" category was the second least important overall, and was ranked in the five least important factors by five of nine groups. The NGCs' apparent lack of enthusiasm for government involvement is made clear by this result: even though respondents ranked the "Planning and Development" category as the highest, merely adding the word 'government' to 'planning' was sufficient for the factor to be rated among the lowest. The third least important factor was identified as "demand enhanced by regulation", also from the "Government/Regulatory Environment" category. That factor was ranked among the five least important by six groups. "Use of outside experts" from "Human Resource/Organizational" came in at fourth least important, and was ranked in the five least important factor by four groups. The fifth least important factor for NGCs was found to be "enforce member agreements" from the "Strategic" category. Three groups rated that factor as among their five least important.

*Corn Processing/Ethanol/Energy*

For Group 1, the largest with fourteen NGCs, the five most important factors were "local champion(s) or leader(s)", "strong selling/marketing effort", "full-time general

manager", and a tie between "feasibility study" and "member capital base". That the first and fourth most important factors (and the fifth highest ranked is also related to this category) both are in the "Planning and Development" category reflects the importance of planning to that type of NGC. The other two factors in the top five illustrate the importance that corn processing NGCs place on daily operations. Given the mechanization, labor force requirements, and large capitalization of those types of facilities, these results are not surprising.

Nor is it surprising that "product uniqueness" and "brand recognition" from the "Product Related" category are ranked as the least and fourth least important factors to Group 1 NGCs, given the homogeneous nature of their output. Third and fifth least important were "communication with members" and "use of outside experts", both from the "Human Resource/Organizational" category, and fourth was "geographical member dispersion" from "Logistics".

*Livestock*

Group 2 was comprised of six livestock NGCs, who rated "local champion(s) or leader(s)", "product quality", "multiple-market sales", "experienced managers", and "reputation" as first to fifth overall most important factors, respectively. Merlo asserts that the beef industry's reputation as a whole has suffered from its inability to produce a consistent, convenient product that is as affordable as chicken or pork. This may help explain the selection of "product quality" and "reputation" as being among Group 2's most important success factors. Interestingly, no two of the top five factors for Group 2 came from the same category. It is noteworthy that "multiple-market sales", the third most important factor to Livestock NGCs, was rated no higher than twenty-first by any

other group. This is because this type of enterprise sells different cuts of meat into different markets. For beef processors, for example, there are distinct markets for primals, sub-primals, trimmings, hides, bones and offal/renderings. It is more difficult to sell round and chuck than cuts from the loin and rib. For this reason, that factor is of considerable importance to livestock NGCs.

The least important factor for NGCs in Group 2 was "demand enhanced by regulation", followed by "geographical member dispersion", "proximity to customers", "government planning/technical support", and "site selection". That three factors in the "Logistics" category and two in the "Government/Regulatory Environment" category were ranked among the five least important for this group is telling: this type of NGC does not rely heavily on distributional factors or the actions of policy makers in its operations. This trend may be changing as the newest Group 2 NGCs are developing, however: Campbell (2002) notes that 40% of the dollars of the USDA's new value-added grants program were awarded to livestock ventures. This may mean that newer livestock NGCs are becoming more receptive to government planning aid than in the past.

*Poultry/Eggs*

Though there were only three respondents in Group 3, their factor rankings are informative. "Managers with industry knowledge" was ranked as the most important overall factors for these NGCs, followed by "experienced managers" and "business strategy", which were tied for second. The fourth most important factor was "low operating costs", and fifth place was a tie between "steering committee" and "reputation". Two factors from the "Managerial" category were in the top five, showing the importance of effective management to Group 3 NGCs. Moser (2000) notes that these factors are

critical to poultry NGCs because of the importance of previous managers' experience in product development and sales. "Business strategy" was ranked considerably higher for this group than for any other (second overall, versus thirteenth for Group 1), showing the relative importance of that factor and the importance of the "Strategic" category NGCs in that group.

Two of the five factors rated least important for Group 3 NGCs came from the "Government/Regulatory Environment" category ("government planning/technical support" was tied for lowest, and "demand enhanced by regulation" was third lowest), and another two were in the "Product Related" category ("brand recognition" and "product uniqueness" at fourth and fifth least important, respectively). "Geographical member dispersion" was tied for lowest ranked. None of these rankings was noticeably out of line with the rankings assigned by other groups, but they do echo the results for other groups of low importance placed on government involvement.

*Oilseed Processors*

Two NGCs made up Group 4, and their rankings of "feasibility study", "steering committee", and "local champion(s) or leader(s)" as first, second, and third highest overall revealed the considerable importance they place on the "Planning and Development" category. "Experienced managers" was ranked as fourth most important, and "member capital base", which also relates closely to the development stages for NGCs, was fifth. These results reflect that fact that most NGCs in this group are relatively new, and the planning and development stages are still fresh in their minds. Moser (1999) discusses the importance of these factors for developing an oilseed

processing NGC. The results further reveal the importance of members' ability to fund a processing facility with considerable start-up capital requirements.

Least important to Group 4 NGCs was the "brand recognition" factor, followed by "demand enhanced by regulation", and "product uniqueness". The first and third of those factors are from the "Product Related" category, again showing that producers of a product slightly removed from the consumer do not consider those types of factors relatively as important. The fourth and fifth lowest ranked factors, "vertical integration" and "targeted customer base", are both in the "Operational" category.

*Wheat Processors*

The NGCs in Group 5 ranked "quality of labor force", "product quality", "steering committee", "market size" as the first through fourth most important factors. There was a tie for fifth between "product focus" and "feasibility study". High rankings for the first, third, and fourth of those factors reflect the fact that Group 5 NGCs are involved in a highly competitive output market (Boland and Barton), and must focus on high volumes and quality products to succeed. That two of the factors are from the "Planning and Development" category again shows the importance of the early stages of NGC development to overall success.

The least important factor to NGCs in Group 5 was "geographical member dispersion", echoing a common theme among groups. Notably, the next four least important factors all came from the "Government/Regulatory Environment" category: they were "government planning/technical support", "demand enhanced by regulation", "co-op existence laws", and "direct government agency funding". This reflects the

overall low ranking of that category by NGCs in yet another group, although "co-op tax advantages (i.e. 521 tax status)" was ranked as the fourteenth most important overall.

*Table Vegetables/Organic/Seafood*

The ten enterprises in Group 6 are unique among NGCs because they sometimes do not require large member capital infusions to fund processing facilities. Rather, they focus on the marketing of specialized and usually perishable products. NGCs in this group considered factors in the "Product Related" category to be of primary importance, ranking "customer service", "product quality", and "product uniqueness" as the first, second, and fourth most important overall. This is not surprising since organic NGCs have arisen as a result of the food quality concerns of consumers (Karg 2000). "Local champion(s) or leader(s)" was the third highest ranked factor for these NGCs, and "low operating costs" was ranked fifth. Both of these factors were also ranked among the most important by NGCs in several other groups. This shows that although Group 6 NGCs place unique importance on product related factors, they do have several important factors in common with other groups.

The two least important factors to NGCs in Group 6, "government planning/technical support" and "demand enhanced by regulation", both came from the "Government/Regulatory Environment" category, matching the overall trend across groups. Third least important was "enforce member agreements". It is not surprising that this type of NGC does not consider that factor to be very important, since not having a large production facility means that capacity usage considerations are not important, and as such, a committed volume of raw inputs by members is not as critical. The fourth least important factor was "economic climate". In a rich economy such as that of the U.S., it is

unlikely that the state of the economy has a significant effect on food consumption patterns. "Use of outside experts" was fifth least important to Group 6 NGCs.

*Coffee/Sugar/Table Nuts*

Products for the one coffee NGC, two sugar NGCs, and one table nut NGC in this category are unique in that they are processed, similar to those in Groups 1, 4, and 5, yet they are also consumer-ready, similar to the products of Groups 3 and 6. The first and fourth most important factors for this group were "low operating costs" and "low financing costs" from the "Financing and Costs" category. "Business volume" and "local champion(s) or leader(s)" were tied for second most important for Group 7, with "product quality" identified as the fifth most important. These rankings reflect these NGCs' positions in industries that are moderately competitive with large sales volumes and medium scale processing facilities. Control of costs was clearly designated as an important concern to NGCs in Group 7. This is not surprising, given pervasive low sugar prices. Recently American Crystal, the oldest NGC in the United States, was forced to forfeit sugar to the government for the first time in twenty years (Karg 2001).

Interestingly, the "Product Related" category, which contained the fifth most important factor for Group 7 ("product quality"), also contained factor ranked second least important, "product uniqueness". This may indicate that although these NGCs feel that they must provide a high quality product to be successful, to some extent their products cannot be distinguished from competitors' based on unique characteristics. "Use of outside experts" was ranked as least important overall. Two factors from the "Strategic" category were ranked third and fourth least important; they were "enforce member agreements" and "multiple market sales". This indicates that members of those

NGCs are not troublesome when it comes to fulfilling delivery requirements, and that selling multiple products is not a concern for NGCs in this group. Fifth least important was "geographical member dispersion", which was ranked similarly by most other groups.

*Producer Alliances*

The two producer alliances included in Group 8 are unique types of respondents. Typically, interested producers must be a member of a producer alliance to invest in an alliance's NGC. The alliance looks for a potential NGC idea, acquires feasibility study funds, finds interested producers to invest, and sets up the enterprise. The alliance then allows the management team to take over the operation, and focuses on its next project. Respondents in this group therefore can be expected to have a broader focus than a single commodity, though the commodities with which they are most familiar will influence their overall factor rankings.

The Group 8 NGCs chose four factors from the "Product Related" categories among their five most important overall. "Brand recognition" was ranked the highest, followed by a tie between "product quality" and "customer service". Tied for fifth was "product uniqueness" from that category with "managers with industry knowledge" from the "Managerial" category. It is noteworthy that the product related factors are rated so highly by those who are in the business of setting up NGCs. This might mean that a product focus is important in the conceptual stages of an NGC, but as the idea comes to fruition and begins operation, other factors soon become the focus.

"Demand enhanced by regulation" and "government planning/technical support" were tied for the lowest ranking by the producer alliances, again showing the low

importance given to the "Government/Regulatory Environment" category overall. Tied for third least important were "site selection" and "geographical member dispersion", both in the "Logistics" category. This shows that in the earliest stages, factors that might be of concern to managers of an operating enterprise are not very important to those responsible for planning. The fifth least important factor was "enforce member agreements". Commitment by producers has typically been a big problem for marketing cooperatives, but with the large initial investment made by investors in NGCs, it is becoming less so. Strong brands usually result in strong commitments by producers because they make benefits more tangible. Note, again, that Group 8 NGCs rated "brand recognition" as the most important factor.

*Other (Alfalfa, Forestry, Cotton, Anonymous)*

The NGCs in Group 9 came from the alfalfa, forestry, and cotton industries, with one anonymous response. With such a heterogeneous group, it is difficult to interpret overall rankings. Nevertheless, three of the four NGCs in that group are involved in production and/or processing of raw commodities, so they are similar in that regard. "Low operating costs" was ranked as the most important, followed by "managers with industry knowledge" and then two factors from the "Planning and Development" category, "steering committee" and "local champion(s) or leader(s)". This is more evidence of the overall importance of the factors in that category. The fifth most important factor was "member capital base", which is not surprising since the alfalfa and forestry NGCs are in their early stages.

The least important factor to Group 9 NGCs was "brand recognition", which is not surprising given that none of the three identifiable NGCs markets under a name

brand. "Economic climate" was the second least important factor, next was "use of outside experts", and then two factors from the "Logistics" category, "geographical member dispersion" and "site selection". The low ranking of factors in that category may reflect the fact that bulky commodities are processed into products that are not logistically difficult to get to purchasers. Further evidence in favor of that hypothesis is the fact that "proximity to inputs", ranked twenty-seventh, was eight positions higher than the next most important factor in the category.

**Regression**

As noted above, a second survey was sent out to those NGCs that responded to the first. The goal of the second survey was to gather information that would help identify those business characteristics that affect NGC success; this would augment the results of the first survey which asked NGC managers to rate success factors. After three mailings, a 60% response rate was attained, but the number of usable responses was limited by some respondents not providing all requested information. In the end, 20 usable surveys were completed.

Net income of the NGC was chosen as the measure of "success". Other quantitative measures such as age of the NGC or return on member equity were considered but not found to be as appropriate. Qualitative measures such as member satisfaction or provision of services are also measures of NGC success, but are more difficult to quantify and so were not used in this analysis.

Several characteristics were hypothesized to affect NGC success. It was believed that the greater the number of employees, the more successful would be the NGC, *ceteris paribus*. As the NGC becomes larger, it is more able to take advantage of economies of

scale, which should enhance its net income. For similar reasons, overall sales of the NGC were also included in the model.

The age of the NGC (i.e. number of years it has been in operation) was believed to affect its success. Older NGCs are likely to be better established, have more a more extensive network of customers and suppliers, and have worked through many of the problems that can plague new businesses. The amount of members' equity invested in an NGC was hypothesized to have a positive effect on success as well: businesses that are sufficiently capitalized are better able to take advantage of new opportunities than under-capitalized ones, and are less likely to incur borrowing costs if members have contributed a substantial portion of capital requirements. The number of members in the NGC was also included in the model. The model estimated was then

(1) $NI = \alpha + \beta_1 \times EMP + \beta_2 \times SALES + \beta_3 \times AGE + \beta_4 \times EQUITY + \beta_5 \times MEMBERS,$

where, NI is net income, EMP is number of employees, SALES is sales in dollars, AGE is number of years in operation, EQUITY is number of dollars in total members' equity, and MEMBERS is the number of members the NGC has. Regression results are given in Table 4.

It is not surprising to discover that the number of employees has a significantly positive effect upon NGC success, for reasons outlined above. However, it was not expected that the sales variable would be statistically insignificant. This may reflect the importance of controlling costs rather than maximizing sales. This hypothesis is supported if one recalls that "low operating costs" was rated as the second overall most important success factors by NGC managers in the first survey.

The age of the NGC was not found to have a statistically significant effect on NGC success. This is an unexpected result, since it was assumed that older NGCs would be better established and hence more likely to earn a profit from operations. It is possible that the advantage of being in business for a number of years is not as important as previously thought. This possibility is supported by the data; inspection reveals that some of the most successful NGCs by net income are around the same age as some of the least successful ones. Thirteen of the 20 respondents had been in operation for a period of between 4 and 8 years, yet of those 13, net income ranged from 11,750,000 to –135,000.

As hypothesized, the amount of members' equity invested in the NGC had a significantly positive effect on success. Sufficiently capitalized NGCs are better able to take advantage of new business opportunities available to them, and are less likely to incur substantial interest costs on borrowed money. But it was also found that the number of members had a significantly negative effect on net income. Though this is surprising, it is believed that the result is due to some of the NGCs with the most members that responded to the survey had poor years in fiscal 2001. With a relatively small number of observations, this could cause the coefficient to have an unexpected sign.

**Summary and Conclusions**

New Generation Cooperatives are becoming increasingly more common as agricultural producers strive to increase their share of the value produced by their commodities. NGCs, distinguishable from traditional cooperatives by limited delivery rights and restricted membership, often require large initial investments on the part of members. These enterprises retain the important cooperative principles of one-

member/one vote (although some states allow flexibility in this area) and dividends based on patronage, but are more akin to investor-owned firms than their traditional counterparts. As such, the factors influencing success for NGCs may not be exactly the same as for those on either end of the ownership philosophy spectrum.

This paper detailed the results of two surveys pertaining to the success of NGCs. The first was a survey of NGC managers regarding the factors most important to NGC success. Factors in the survey were placed in ten broad categories, and were included on the basis of a review of business and cooperative literature, and on the basis of consultations with extension personnel. Respondents were asked to rate the five factors in each category from 1 to 5, using each rating only once, for the most to least important. Of the 67 unique NGCs identified from the Illinois Institute for Rural Affairs' "Directory of New Generation Cooperatives", discussion with extension personnel, and an internet search, 50 returned usable surveys, yielding a 75% response rate. The respondents were grouped into nine categories based on similar commodities or activities.

Several sets of results were presented. Figures 1 through 12 illustrated the overall number of "1" through "5" responses as well as the mean and median ratings for each factor for the 50 respondents. Table 2 broke down the mean ratings by factor for each of the nine groups, and showed which least-squares means were found to be significantly different across groups.

The product of the within-category factor rating and the overall category rating can be used to rank the factors for each respondent, each group, and overall. Table 3 showed the overall factors rated from 1 to 50 across all respondents, and broke down the overall factor rankings by group. Several interesting differences in factor rankings across

groups were noted, and it was clear that factor rankings depended on the specific commodity in question. Groups whose NGCs produce goods closer to the final consumer and with a lower degree of processing and product homogeneity tended to rank different factors more highly than did groups whose NGCs are engaged in industries with more processing and more product homogeneity.

In general, factors in the "Planning and Development" category and the "Financing and Costs" category were revealed to be most important. Conversely, factors in the "Government/Regulatory Environment" and "Logistics" were often among the lowest ranked. Other categories, such as "Product Related" and "Strategic" had factors which were ranked highly by some groups but not as highly by others. As such, it seems clear that some factors are important to the success of almost all NGCs, others are important to almost none, and, as expected, the importance of some other factors depends on the type of NGC being studied.

The second survey requested data from NGCs on quantifiable characteristics, and was designed to examine the relationship between those characteristics and the success of the enterprise. Success of the NGC was approximated by net income, and variables identified as potentially affecting success were number of employees, sales, years in operation, members' equity, and number of members. As Table 4 shows, the number of employees and the amount of members' equity were found to positively influence net income, but the age of the NGC as well as the level of sales were found to have no effect. The number of members was found to have a significantly *negative* effect on net income, but this was thought to be the result of a few large outliers rather than a true negative relationship with net income. Results therefore indicate that it is critically important for

an NGC to be sufficiently capitalized, and that there may be economies of scale with respect to the number of employees. Surprisingly, "older" NGCs did not appear to have gained much advantage over relatively younger ones in terms of net income.

These results should aid in the development of new NGCs and the operation of existing ones. Examples of NGCs that have failed due to poor planning or operation abound. Cognizance of the factors which are important to a particular type of NGC should help raise the success rate for NGCs, and thus enhance opportunities for producers to capture more of the value that is added to their commodities. NGCs can make important contributions to agricultural producers and to rural areas, keeping people and money from relocating elsewhere. It is in helping accomplish that goal that the results presented here are most important.

## Notes

1. Torgerson (2001b) notes that as many as 75-100 NGCs may currently exist. Many of them are in the formative stages.

2. Of the 72 NGCs identified as potential respondents, a few were no longer in existence. In a few other cases, more than one identified potential respondent represented the same NGC. The number of unique potential responses was thus lowered to 67, and 50 usable responses were returned. Two unique unusable responses were not included in the calculation of the response rates.

3. 521 tax status exempts co-ops from corporate income tax if certain provisions are met.

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**Table 1. Groupings of NGC Survey Respondents**

| Group | Respondents | Activity/Commodity |
|---|---|---|
| 1 | 14 | Corn Processing/Ethanol/Energy |
| 2 | 6 | Livestock |
| 3 | 3 | Poultry/Eggs |
| 4 | 2 | Oilseed Processors |
| 5 | 5 | Wheat Processors |
| 6 | 10 | Table Vegetables/Organic/Seafood |
| 7 | 4 | Coffee/Sugar/Table Nuts |
| 8 | 2 | Producer Alliances |
| 9 | 4 | Other (Alfalfa, Forestry, Cotton, Anonymous) |
| Total | 50 | |

**Table 2. Mean Responses and Significant Mean Differences, by Factor by Group**

| Factor | Group 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|
| *Product Related* | | | | | | | | | |
| product uniqueness | 3.9 (6) | 3.0 | 4.0 | 4.0 | 3.3 | 2.1 (1,7) | 4.3 (6) | 3.5 | 2.0 |
| product quality | 1.6 | 1.7 | 1.3 | 1.0 | 1.3 | 1.8 | 1.3 | 2.5 | 2.3 |
| technology incorporated | 2.6 (2,6) | 5.0 (1,4) | 3.3 | 2.0 (2,6) | 3.8 | 4.9 (1,4) | 3.8 | 5.0 | 3.0 |
| customer service | 2.8 | 2.3 | 2.0 | 3.0 | 2.8 | 2.4 | 2.0 | 2.5 | 2.7 |
| brand recognition | 4.0 | 3.0 | 4.3 | 5.0 | 4.0 | 3.8 | 3.8 | 1.5 (9) | 5.0 (8) |
| *Human Resource/Organizational* | | | | | | | | | |
| quality of labor force | 1.8 | 2.8 | 1.7 | 1.0 | 1.3 | 2.1 | 2.3 | 3.0 | 2.5 |
| use of outside experts | 3.9 | 2.3 (6,7) | 4.7 | 4.5 | 3.5 | 4.6 (2) | 5.0 (2) | 3.0 | 4.5 |
| communication within co-op | 2.6 | 3.5 | 2.0 | 2.0 | 3.3 | 2.6 | 2.0 | 2.0 | 2.8 |
| communication with board | 2.9 | 2.7 | 2.7 | 3.0 | 2.8 | 3.1 | 3.0 | 3.0 | 3.0 |
| communication with members | 3.9 | 3.7 | 4.0 | 4.5 | 4.3 | 2.6 | 2.8 | 4.0 | 3.3 |

**Table 2. Mean Responses and Significant Mean Differences, by Factor by Group (continued)**

| Factor | Group 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|
| *Government/Regulatory Environment* | | | | | | | | | |
| co-op existence laws | 3.0 | 1.5 | 2.3 | 1.0 | 3.0 | 2.2 | 2.0 | 1.0 | 3.0 |
| co-op tax advantages | 2.7 | 3.2 | 2.0 | 2.5 | 1.3 (7) | 2.1 | 4.3 (5) | 2.0 | 3.0 |
| demand enhanced by regulation | 2.7 | 4.2 | 3.7 | 5.0 | 3.5 | 3.9 | 3.0 | 4.5 | 4.0 |
| direct gov't agency funding | 2.2 | 2.5 | 3.0 | 3.0 | 3.0 | 2.9 | 3.3 | 3.0 | 2.0 |
| gov't planning/ tech. support | 2.4 | 3.7 | 4.0 | 3.5 | 4.3 | 3.9 | 2.3 | 4.5 | 3.0 |
| *Financing and Costs* | | | | | | | | | |
| input price stability | 3.5 | 4.2 | 4.3 | 4.0 | 4.0 | 3.6 | 3.8 | 3.5 | 3.3 |
| output price stability | 3.4 | 2.8 | 4.7 | 5.0 | 3.5 | 3.9 | 4.3 | 2.5 | 3.5 |
| low operating costs | 2.4 | 2.5 | 1.7 | 1.5 | 2.3 | 2.3 | 1.0 | 3.0 | 2.8 |
| low financing costs | 3.5 | 3.3 | 2.0 | 2.8 | 3.3 | 2.6 | 2.5 | 5.0 | 2.8 |
| member capital base | 2.2 | 2.2 | 2.3 | 2.0 | 2.0 | 2.6 | 3.5 | 1.0 | 2.8 |

**Table 2. Mean Responses and Significant Mean Differences, by Factor by Group (continued)**

| Factor | Group 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|
| *Logistics* | | | | | | | | | |
| site selection | 2.4 | 3.2 | 1.3 | 2.5 | 2.8 | 3.5 | 3.0 | 4.5 | 3.5 |
| proximity to inputs | 1.8 | 2.0 | 3.0 | 2.5 | 3.3 | 2.0 | 3.0 | 3.0 | 2.0 |
| proximity to customers | 3.8 (5,6) | 3.5 | 3.3 | 3.5 | 1.5 (1) | 2.4 (1) | 3.0 | 1.5 | 3.3 |
| transport./dist. infrastructure | 2.4 | 2.7 | 2.3 | 1.5 | 2.8 | 3.2 | 2.3 | 1.5 | 2.5 |
| geog. member dispersion | 4.6 | 3.7 | 5.0 | 5.0 | 4.8 | 2.9 | 3.8 | 4.5 | 3.8 |
| *Operational* | | | | | | | | | |
| business volume | 2.4 | 4.0 | 2.7 | 2.5 | 2.8 | 2.9 | 1.8 | 3.0 | 2.8 |
| risk management | 2.5 | 2.5 | 3.0 | 1.5 | 2.8 | 4.1 | 3.5 | 3.5 | 2.0 |
| vertical integration | 4.6 | 3.3 | 3.3 | 4.0 | 3.3 | 4.4 | 4.0 | 5.0 | 5.0 |
| strong selling/ mktg. effort | 1.8 | 2.2 | 3.0 | 3.5 | 2.3 | 1.9 | 2.8 | 1.5 | 2.5 |
| targeted customer base | 3.7 (6) | 3.0 | 3.0 | 3.5 | 4.0 (6) | 1.7 (1,5) | 3.0 | 2.0 | 2.8 |

**Table 2. Mean Responses and Significant Mean Differences, by Factor by Group (continued)**

| Factor | Group 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|
| *Industry* reputation | 2.8 | 1.3 (5) | 1.3 (5) | 3.0 | 5.0 (2,3,6,9) | 2.1 (5) | 3.3 | 3.0 | 1.8 (5) |
| economic climate | 2.8 | 3.3 | 2.3 | 2.0 | 3.8 | 3.6 | 4.0 | 4.5 | 4.8 |
| market size | 2.4 | 3.3 | 2.7 | 2.0 | 1.5 | 3.0 | 2.5 | 3.0 | 3.5 |
| number of competitors | 3.4 | 3.3 | 4.0 | 3.5 | 2.0 | 3.1 | 3.5 | 3.0 | 2.5 |
| competitors' prices | 3.6 | 3.7 | 4.7 | 4.5 | 2.8 | 3.2 | 1.8 | 1.5 | 2.5 |
| *Managerial* full-time gen. manager | 2.3 | 2.2 | 3.0 | 3.5 | 2.0 | 3.1 | 2.5 | 3.5 | 2.5 |
| experienced managers | 2.6 | 1.8 | 2.0 | 1.5 | 2.5 | 3.1 | 2.8 | 3.5 | 2.3 |
| continuity of management | 3.6 | 3.0 | 3.7 | 3.5 | 3.5 | 2.6 | 4.3 | 2.0 | 4.3 |
| managers with ind. knowledge | 2.6 | 3.2 | 2.0 | 2.3 | 2.3 | 2.1 | 2.0 | 1.0 | 1.3 |
| ongoing mgr. training | 4.0 | 4.8 | 4.3 | 4.8 | 4.8 | 4.1 | 3.5 | 5.0 | 4.8 |

**Table 2. Mean Responses and Significant Mean Differences, by Factor by Group (continued)**

| Factor | Group 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|
| *Strategic* | | | | | | | | | |
| product focus | 2.6 | 2.5 | 3.7 | 3.0 | 1.8 | 2.0 | 1.8 | 2.0 | 2.3 |
| enforce member agreements | 4.0 | 4.3 | 4.7 | 4.5 | 4.5 | 4.2 | 4.0 | 5.0 | 3.3 |
| ongoing planning/checking | 2.7 | 3.7 | 3.0 | 1.5 | 3.5 | 3.6 | 2.8 | 3.5 | 2.3 |
| business strategy | 2.1 | 2.3 | 1.0 | 3.0 | 2.3 | 2.4 | 2.5 | 1.5 | 3.3 |
| multiple market sales | 3.6 | 2.2 | 2.7 | 3.0 | 3.0 | 2.8 | 4.0 | 3.0 | 3.7 |
| *Planning and Development* | | | | | | | | | |
| local champion(s) or leader(s) | 1.8 | 1.2 | 2.3 | 2.0 | 2.6 | 1.8 | 2.0 | 1.5 | 1.7 |
| steering committee | 2.5 | 2.5 | 2.0 | 2.0 | 1.8 | 2.3 | 2.8 | 2.5 | 1.3 |
| feasibility study | 2.4 | 3.2 | 1.7 | 2.0 | 1.8 | 2.5 | 2.8 | 3.5 | 3.0 |
| alliance/ partnership | 3.8 | 3.7 | 4.3 | 4.0 | 4.4 | 4.0 | 3.8 | 3.5 | 4.3 |
| proximity to other successful co-ops | 4.6 | 4.5 | 4.7 | 5.0 | 4.4 | 4.5 | 3.8 | 5.0 | 4.7 |

**Table 2. Mean Responses and Significant Mean Differences, by Factor by Group (continued)**

| Factor | Group 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|
| *Overall Category Rankings* | | | | | | | | | |
| product related | 8.0 (6,8) | 4.2 | 7.7 | 9.0 | 4.5 | 2.9 (1) | 6.3 | 1.0 (1) | 6.0 |
| gov't/regulatory environment | 5.3 (6) | 7.5 | 9.7 | 8.5 | 9.0 | 9.2 (1) | 9.5 | 10.0 | 4.8 |
| logistics | 6.6 | 8.0 | 7.7 | 4.5 | 8.0 | 6.3 | 6.5 | 9.0 | 7.3 |
| planning and development | 3.8 | 3.2 | 4.0 | 1.5 | 5.5 | 4.1 | 3.5 | 3.5 | 2.5 |
| managerial | 4.1 | 4.5 | 2.3 | 4.0 | 3.8 | 4.6 | 4.3 | 3.5 | 3.5 |
| human resource/ organizational | 7.8 | 6.2 | 4.7 | 6.0 | 4.8 | 6.1 | 8.5 | 5.0 | 6.0 |
| financing and costs | 4.4 | 4.7 | 3.3 | 4.5 | 5.0 | 2.9 | 3.0 | 4.0 | 2.3 |
| operational | 4.4 | 5.8 | 5.3 | 8.0 | 4.5 | 4.0 | 3.5 | 6.0 | 4.5 |
| industry | 5.6 | 6.2 | 5.7 | 3.5 | 4.8 | 7.7 | 6.0 | 6.5 | 6.8 |
| strategic | 5.1 | 4.8 | 4.7 | 5.5 | 5.3 | 7.2 | 7.0 | 6.5 | 3.0 |

Note: numbers in parentheses are those groups which have different least-squares means at the 10% significance level.

**Table 3. Overall and Group Factor Rankings**

| Rank | Factor | Group 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | local champion(s) or leader(s) | 1 | 1 | 16 | 3 | 23 | 3 | 2 | 8 | 4 |
| 2 | low operating costs | 6 | 11 | 4 | 13 | 13 | 5 | 1 | 22 | 1 |
| 3 | steering committee | 8 | 7 | 5 | 2 | 3 | 9 | 6 | 13 | 3 |
| 4 | member capital base | 4 | 4 | 7 | 5 | 15 | 10 | 7 | 6 | 5 |
| 5 | feasibility study | 4 | 6 | 7 | 1 | 5 | 11 | 14 | 22 | 14 |
| 6 | managers with industry knowledge | 10 | 20 | 1 | 10 | 7 | 11 | 7 | 4 | 2 |
| 7 | product quality | 19 | 2 | 16 | 14 | 2 | 2 | 5 | 2 | 38 |
| 8 | manager experience | 12 | 4 | 2 | 4 | 7 | 22 | 16 | 20 | 8 |
| 9 | strong selling/ marketing effort | 2 | 24 | 24 | 43 | 12 | 7 | 12 | 12 | 15 |
| 10 | full-time general manager | 3 | 15 | 11 | 25 | 7 | 26 | 10 | 18 | 10 |
| 11 | product focus | 10 | 11 | 31 | 30 | 5 | 21 | 18 | 20 | 7 |
| 12 | low financing costs | 30 | 26 | 7 | 23 | 26 | 8 | 4 | 35 | 6 |
| 13 | continuity of management | 21 | 16 | 11 | 23 | 20 | 15 | 29 | 10 | 25 |
| 14 | risk management | 9 | 21 | 31 | 22 | 10 | 28 | 20 | 40 | 10 |
| 15 | business strategy | 13 | 19 | 2 | 29 | 18 | 32 | 34 | 15 | 20 |
| 16 | business volume | 7 | 44 | 22 | 34 | 28 | 19 | 2 | 28 | 17 |
| 17 | output price stability | 24 | 16 | 26 | 37 | 35 | 14 | 22 | 13 | 12 |

**Table 3. Overall and Group Factor Rankings (continued)**

| Rank | Factor | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| 18 | quality of labor force | 26 | 32 | 10 | 6 | 1 | 18 | 38 | 32 | 36 |
| 19 | alliance/partnership | 18 | 13 | 31 | 6 | 40 | 23 | 20 | 9 | 22 |
| 20 | input price stability | 26 | 34 | 22 | 31 | 37 | 13 | 19 | 24 | 9 |
| 21 | reputation | 23 | 5 | 5 | 18 | 43 | 24 | 30 | 35 | 15 |
| 22 | customer service | 43 | 9 | 24 | 41 | 24 | 1 | 15 | 2 | 39 |
| 23 | targeted customer base | 31 | 29 | 26 | 46 | 34 | 6 | 10 | 27 | 19 |
| 24 | co-op existence laws | 20 | 14 | 40 | 13 | 47 | 34 | 7 | 15 | 40 |
| 25 | proximity to inputs | 14 | 27 | 39 | 17 | 45 | 17 | 36 | 42 | 27 |
| 26 | proximity to other successful co-ops | 31 | 22 | 30 | 12 | 35 | 30 | 23 | 30 | 28 |
| 27 | communication within co-op | 39 | 35 | 13 | 19 | 27 | 26 | 28 | 10 | 21 |
| 28 | market size | 22 | 36 | 18 | 10 | 4 | 40 | 26 | 34 | 45 |
| 29 | multiple market sales | 36 | 3 | 21 | 26 | 20 | 36 | 47 | 35 | 24 |
| 30 | co-op tax advantages | 16 | 45 | 35 | 36 | 14 | 35 | 44 | 35 | 34 |
| 31 | ongoing managerial training | 28 | 34 | 15 | 35 | 33 | 33 | 31 | 30 | 31 |
| 32 | ongoing planning/ checking | 15 | 30 | 19 | 13 | 38 | 44 | 35 | 41 | 13 |
| 33 | transportation/distn. infrastructure | 33 | 41 | 36 | 8 | 42 | 38 | 24 | 24 | 35 |

**Table 3. Overall and Group Factor Rankings (continued)**

| Rank | Factor | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| 34 | communication with board | 41 | 25 | 20 | 31 | 17 | 37 | 44 | 18 | 17 |
| 35 | tech. incorporated | 38 | 37 | 44 | 32 | 29 | 20 | 39 | 7 | 41 |
| 36 | vertical integration | 37 | 28 | 28 | 47 | 24 | 31 | 24 | 44 | 42 |
| 37 | no. of competitors | 35 | 40 | 41 | 19 | 11 | 42 | 40 | 33 | 30 |
| 38 | gov't funding | 17 | 30 | 45 | 41 | 46 | 45 | 26 | 44 | 22 |
| 39 | competitors' prices | 40 | 43 | 43 | 26 | 22 | 43 | 16 | 15 | 33 |
| 40 | site selection | 25 | 46 | 14 | 19 | 41 | 39 | 33 | 47 | 46 |
| 41 | product uniqueness | 50 | 18 | 46 | 48 | 19 | 4 | 49 | 4 | 32 |
| 42 | customer proximity | 45 | 48 | 41 | 26 | 16 | 25 | 32 | 24 | 44 |
| 43 | economic climate | 29 | 32 | 28 | 8 | 30 | 47 | 43 | 43 | 49 |
| 44 | brand recognition | 47 | 10 | 47 | 50 | 30 | 16 | 42 | 1 | 50 |
| 45 | communication with members | 48 | 42 | 31 | 43 | 38 | 29 | 41 | 29 | 37 |
| 46 | enforce member agreements | 42 | 37 | 37 | 39 | 43 | 48 | 48 | 46 | 29 |
| 47 | use of outside experts | 46 | 22 | 38 | 40 | 30 | 46 | 50 | 39 | 48 |
| 48 | demand enhanced by regulation | 34 | 50 | 48 | 49 | 48 | 49 | 37 | 49 | 43 |
| 49 | gov't planning/ technical assistance | 44 | 47 | 49 | 45 | 49 | 50 | 13 | 49 | 36 |
| 50 | geographical member dispersion | 49 | 49 | 49 | 37 | 50 | 41 | 49 | 47 | 47 |

**Table 4. Ordinary Least Squares Parameter Estimates, Net Income of New Generation Cooperatives**

| Parameter | Estimate |
|---|---|
| Intercept | 4772359* |
| | (2709054) |
| Number of Employees | 12957* |
| | (6445) |
| Sales | -0.0711 |
| | (0.0506) |
| Age | -26620 |
| | (88590) |
| Equity | 0.4495** |
| | (0.1565) |
| Number of Members | -15200** |
| | (6054) |
| N = 20 | |
| Adjusted $R^2$ = 0.8516 | |

Note: a double asterisk denotes significance at $\alpha = 0.05$ level; a single asterisk indicates significance at the $\alpha = 0.10$ level. Standard errors are given in parentheses.

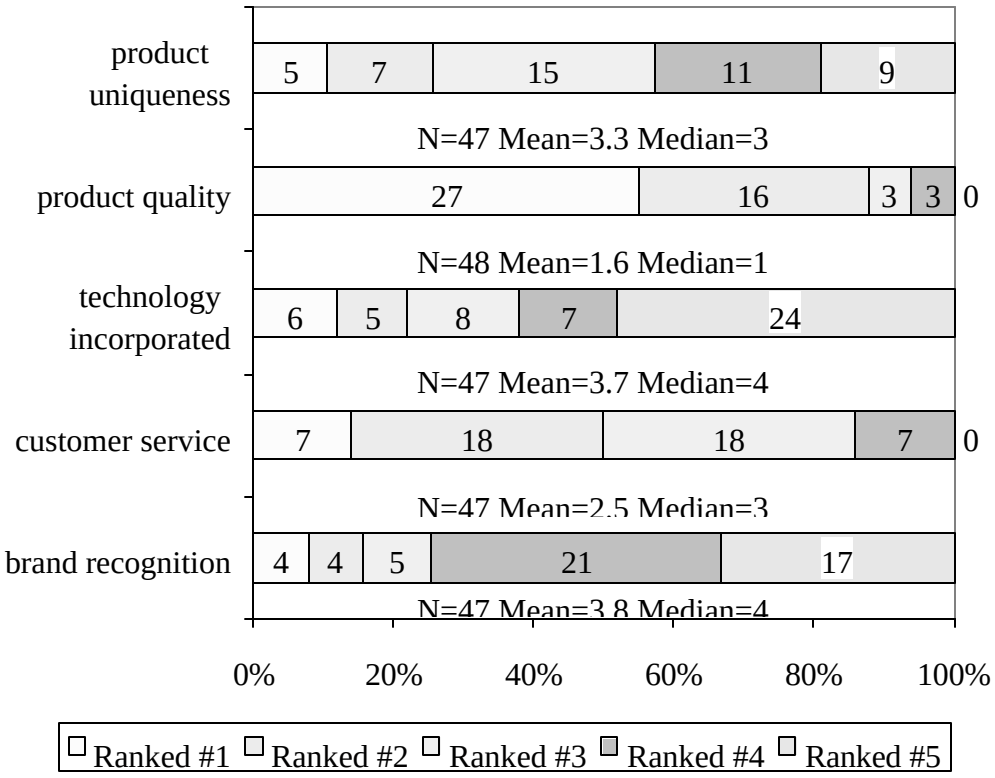


**Figure 1. Distribution of Responses in the 'Product Related' Category**

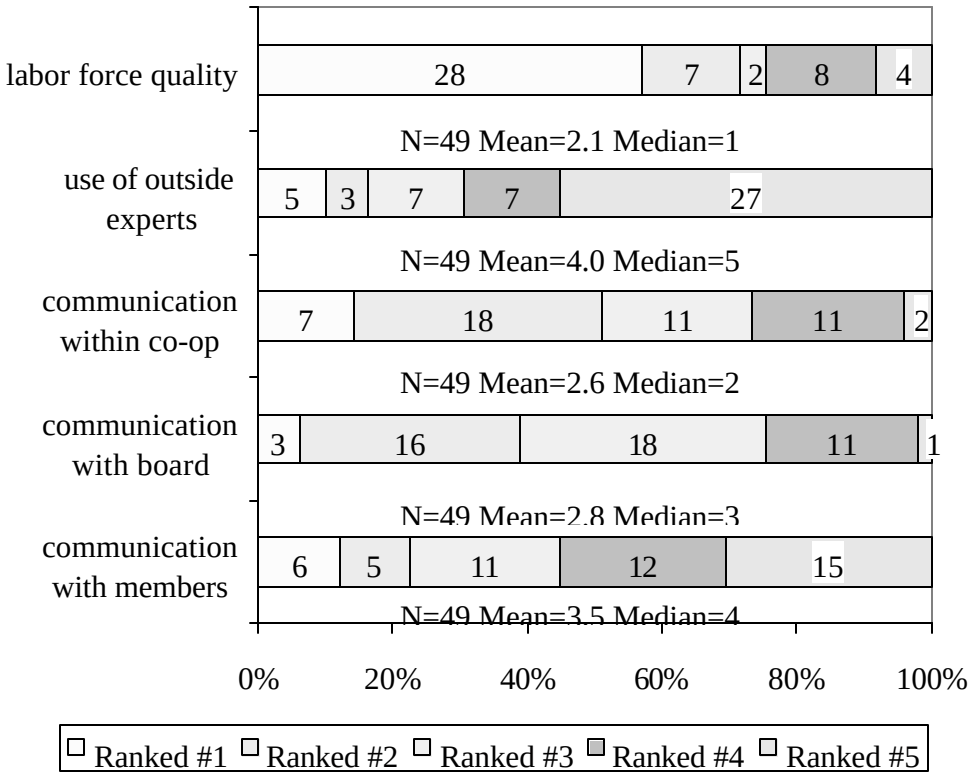


**Figure 2. Distribution of Responses in the 'Human Resource/Organizational' Category**

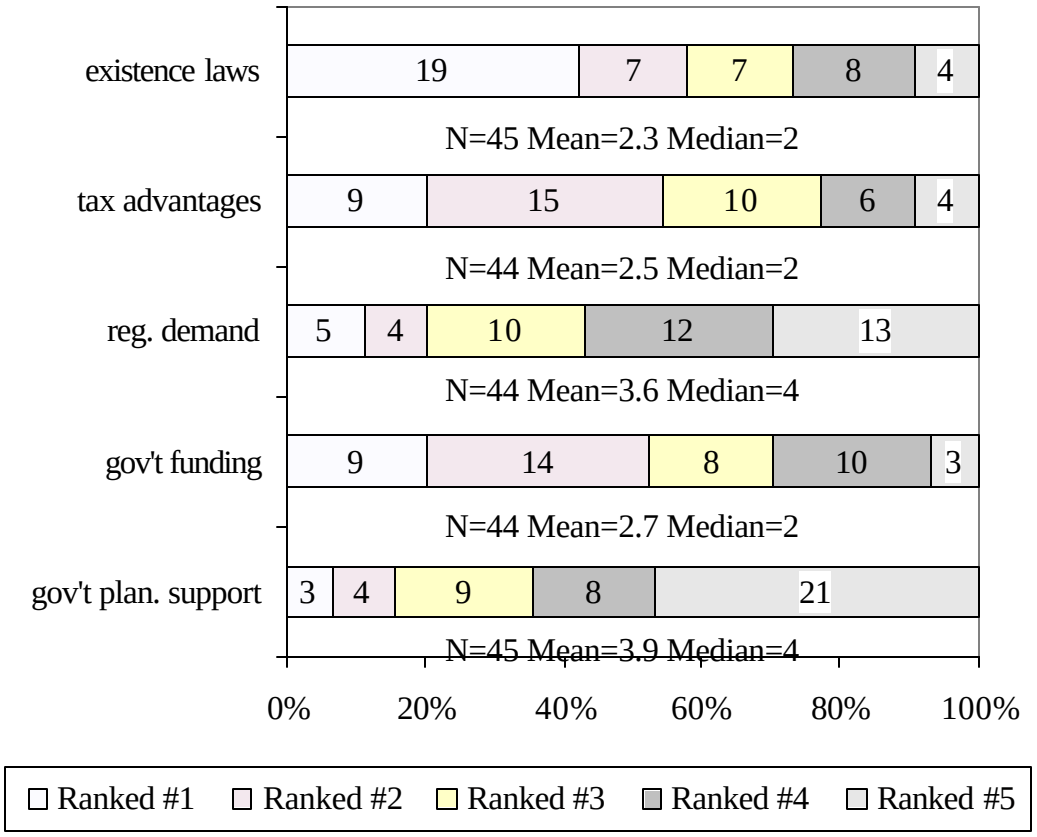


**Figure 3. Distribution of Responses in the 'Government/Regulatory Environment' Category**

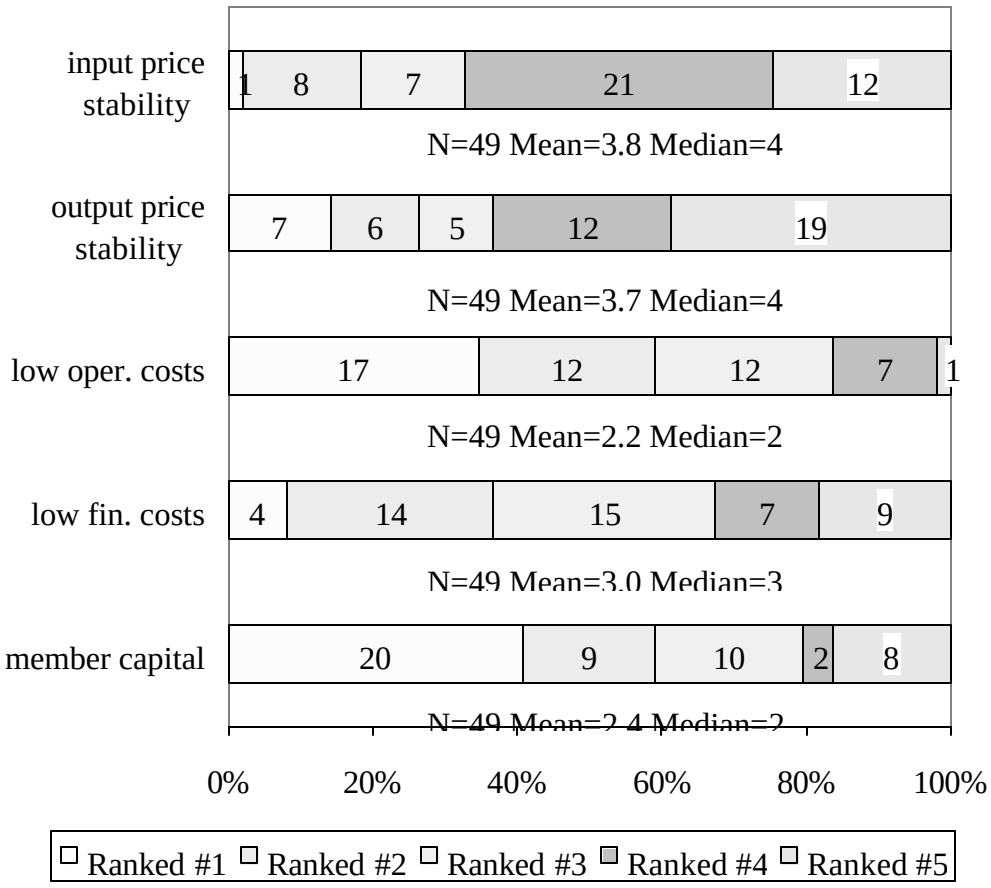


**Figure 4. Distribution of Responses in the 'Financing and Costs' Category**

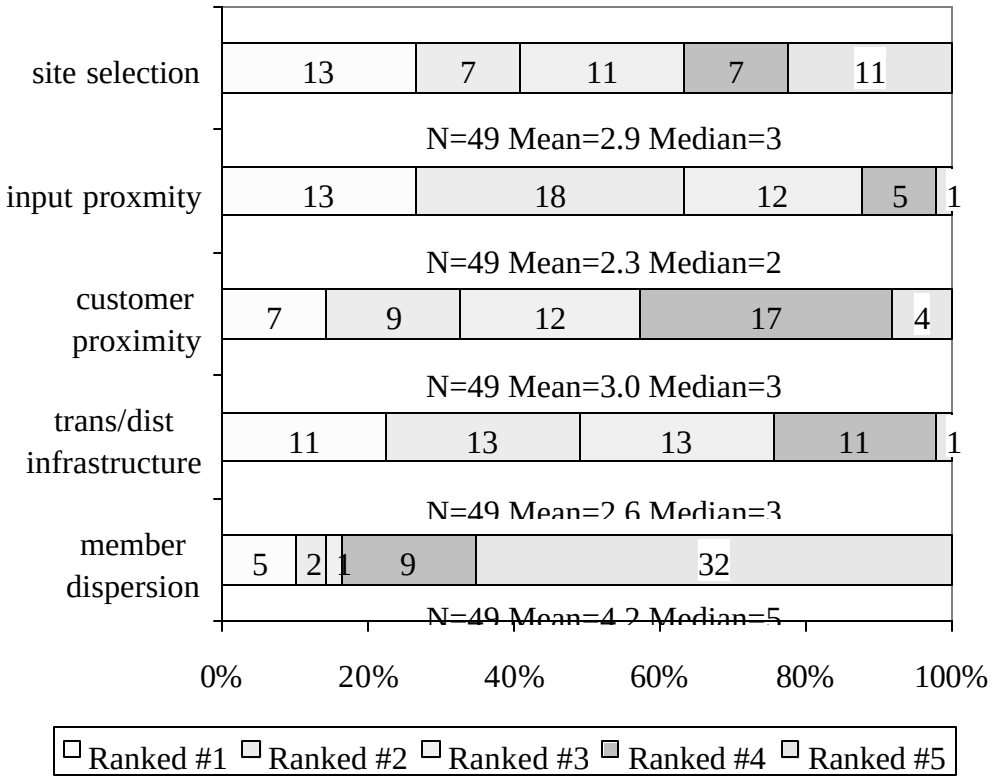


**Figure 5. Distribution of Responses in the 'Logistics' Category**

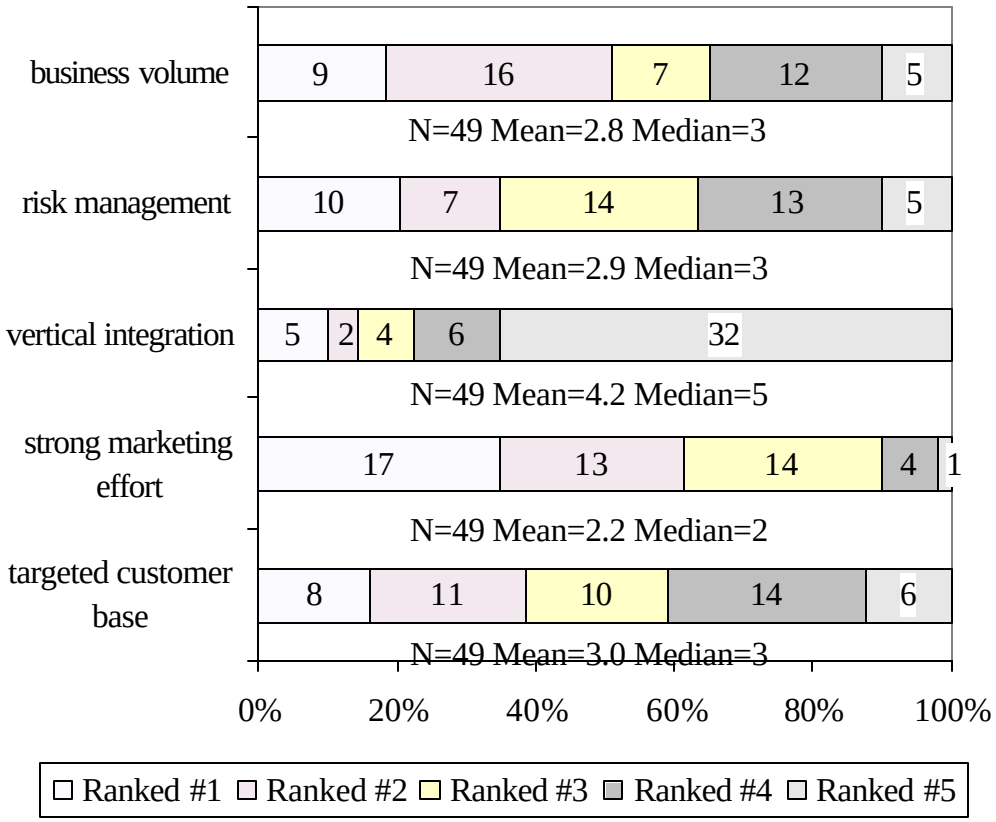


**Figure 6. Distribution of Responses in the 'Operational' Category**

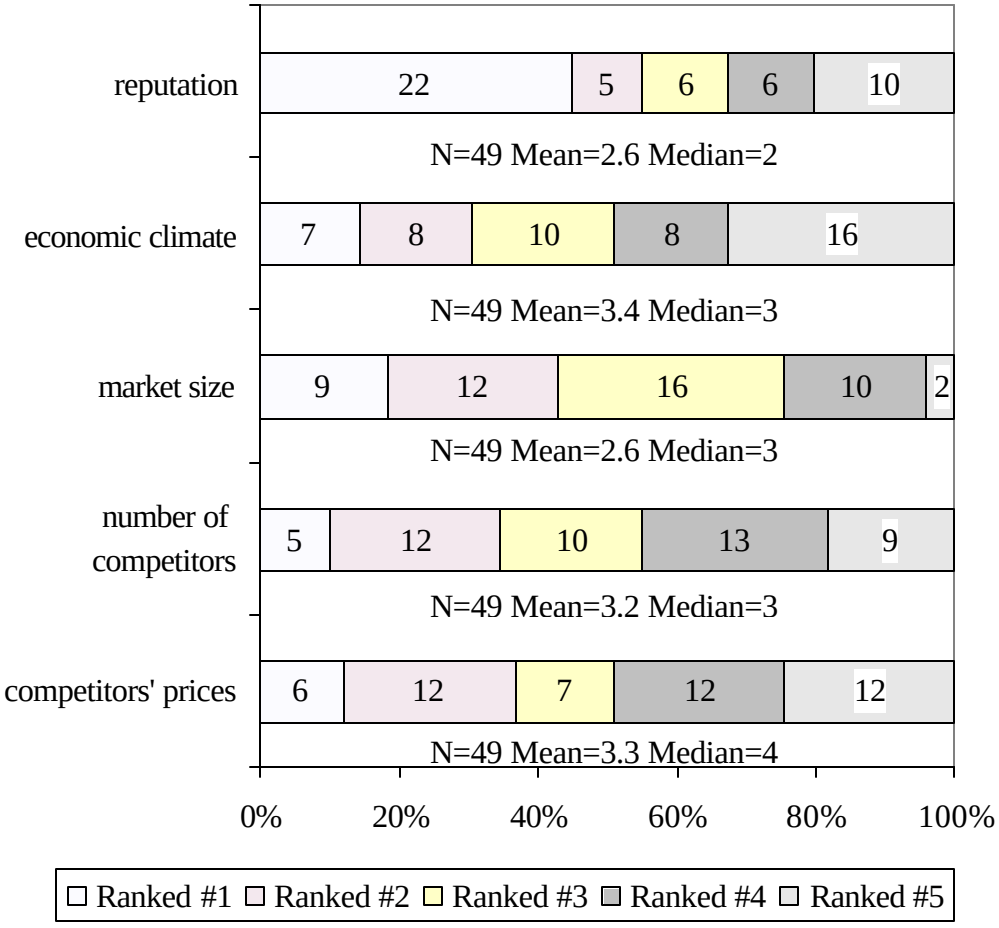


**Figure 7. Distribution of Responses in the 'Industry' Category**

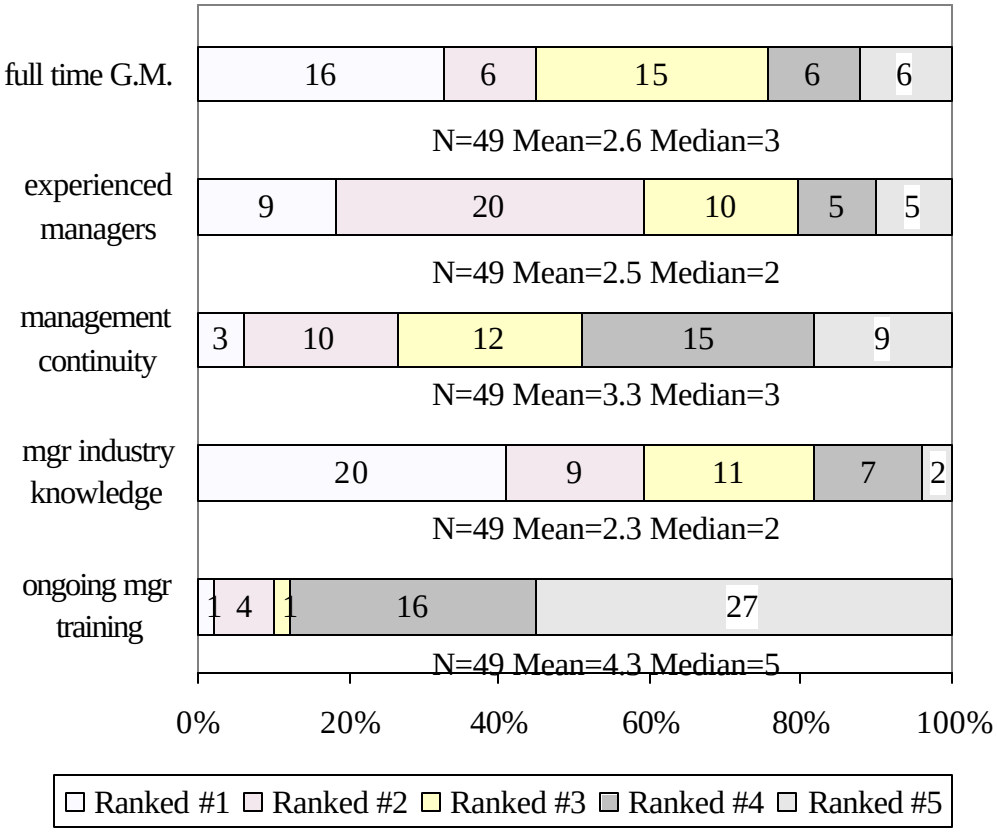


**Figure 8. Distribution of Responses in the 'Managerial' Category**

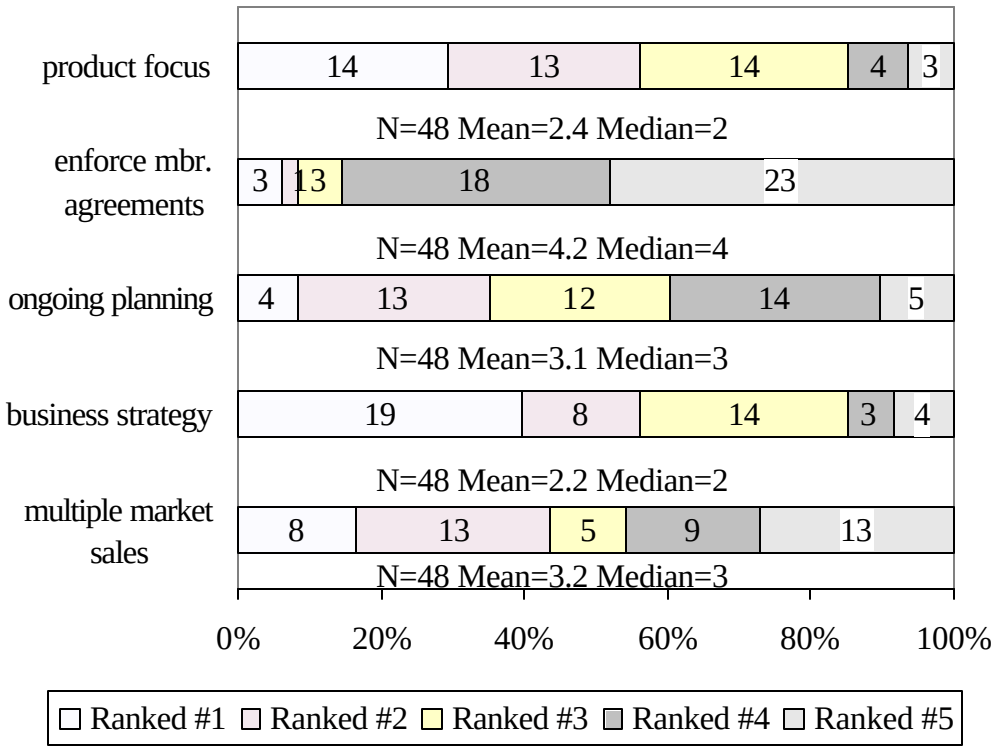


**Figure 9. Distribution of Responses in the 'Strategic' Category**

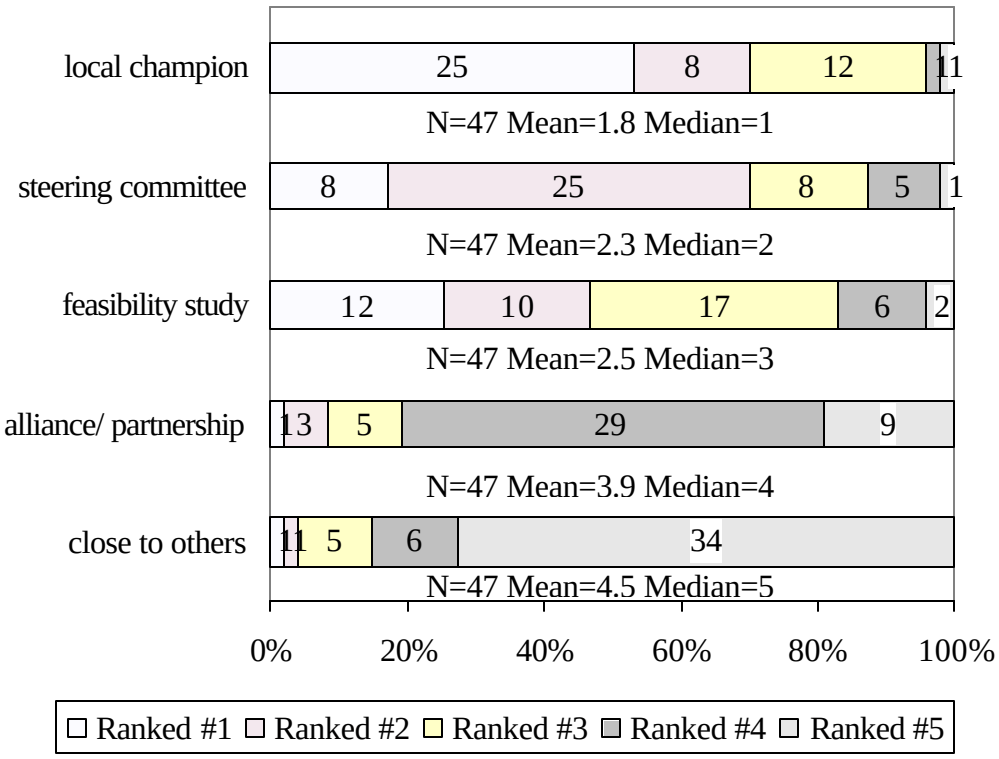


**Figure 10. Distribution of Responses in the 'Planning and Development' Category**

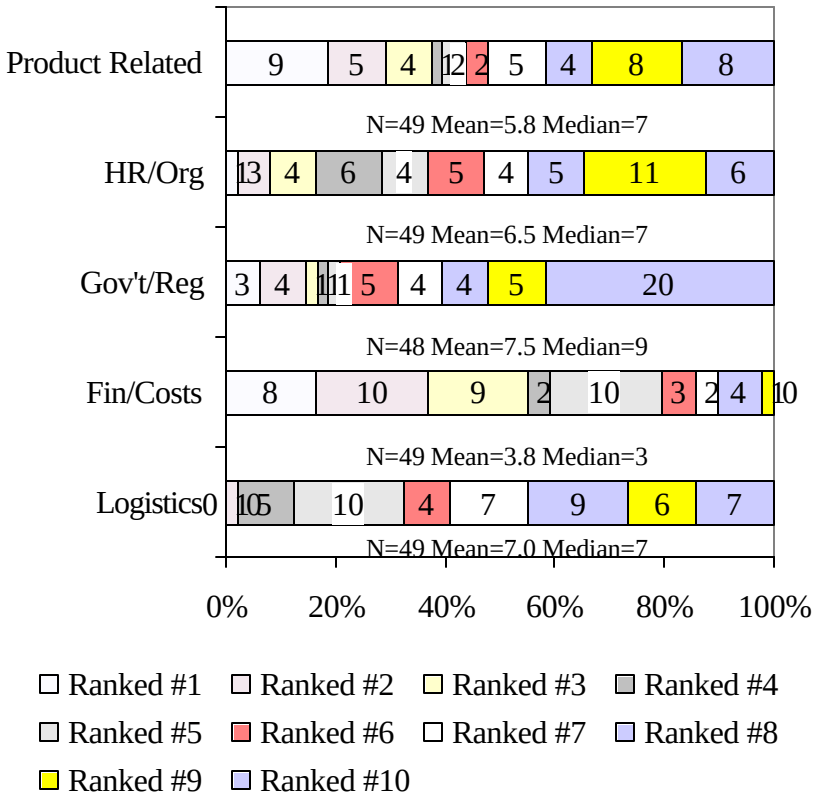


**Figure 11. Distribution of Responses for First Five Overall Category Rankings**

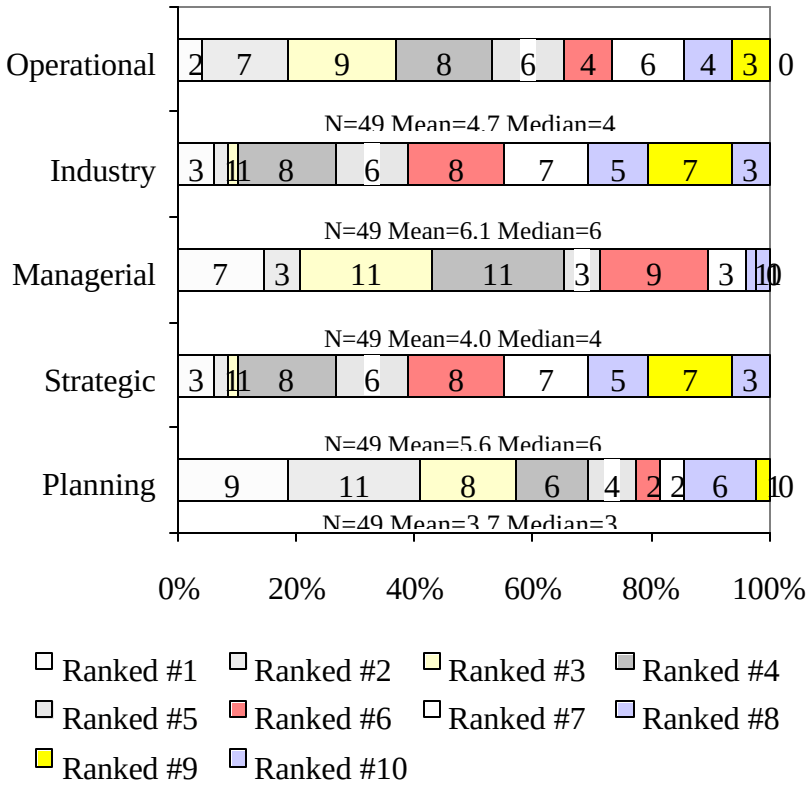


Figure 12. Distribution of Responses for Second Five Overall Category Rankings