# Cooperative Research Efforts Between Business Schools And The Private And Public Sectors: Frequency Of Occurrence And Outcomes

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**Abstract**

*Recent criticisms of business education suggest that academia has fallen short in the areas of teaching, research and service. Cooperation between faculty, practitioners, and business research bureaus has been suggested as a means to enhance these outcomes of the educational process. Anticipated benefits include increased faculty research, affordable quality research for businesses, and greater exposure and credibility for business schools. This research documents the incidence of this type of cooperative effort in US business schools. The results suggest that these efforts are taking place and that faculty commitment is a key ingredient for success.*

## Introduction

Business schools, in spite of efforts to maintain credibility in the academic and business communities, have been criticized by accreditation bodies for their lack of substantive research (AACSB & EFMD 1982; Porter & McKibbin 1988; AACSB 1994a; Urban, et. al. 1996). They have also been criticized by the business sector for their lack of involvement in, and service to the community (Porter & McKibbin 1988; Bricker 1993; AACSB 1994; Noftsinger 1996; Limpert 1997; Bringle and Hatcher 2000). In addition, business schools have been criticized for losing touch with reality in their efforts to prepare students for careers in the real world (Stanton 1988; Banks 1993; AACSB 1994b; Allen 1999; Paranto and Kelkar 1999). Considering these allegations, it appears that many business schools have fallen short in their basic missions of teaching, research and service.

A number of steps have been taken in order to address some of these maladies. Internship programs provide both students and educators with practical business experiences (Wentling & Helbling 1988; Hendricks 1993; Ferrell 1995). Business research bureaus and development centers provide assistance to both governmental and private organizations. In addition, business leaders serve as guest lecturers in many business courses.

*Readers with comments or question are encouraged to contact the authors via email.*

Another approach that has resulted in benefits to all parties involved is cooperative research efforts between faculty, businesses, and students (Lambert & Sterling 1988; Peltier, et al. 1995). Another version of this approach involves **formalized** cooperative research efforts that include business research bureaus as well (Pharr & Stuefen 1991). Benefits of cooperative research have included additional sources of external funding, increased faculty research, hands-on student experience with actual business problems, affordable quality research for businesses, and greater exposure and credibility for business schools (Lambert & Sterling 1988; Pharr & Stuefen 1991; Peltier, et al. 1995).

Although these types of arrangements have been reported in a few isolated cases (Lambert & Sterling 1988; Pharr & Stuefen 1991; Peltier, et al. 1995), the level of incidence and degree of success in American higher education is unknown. The primary purpose of this paper is to document the incidence of these types of programs, levels of activity and success, and the associated benefits and drawbacks. The first section will consider possible causes of the alleged shortcomings in academia and the anticipated benefits often associated with cooperative research efforts. Secondly, the research methodology will be presented, followed by survey results documenting the prevalence of cooperative research efforts in the United States. Finally, possibilities for the future will be presented in light of changing public perceptions, practitioner expectations, and accreditation standards.

**Possible Causes**

Resource constraints, both time and money, are often cited as primary reasons for many of the shortcomings that exist in the academic arena (Porter & McKibbin 1988; AACSB 1994; Hossler, et. al. 1997). Inadequate financial resources can limit a faculty member's ability to carry out substantive research (Lambert & Sterling 1988; Hossler, et. al. 1997). Based on several infrastructural characteristics of higher education, financial pressures are expected to continue for several years (Mason 1995; Plaisance 1997; St. John 1999). In addition, heavy teaching loads also reduce the time available for both research and significant course restructuring. Service to the community through consulting and presentations often give way to pressures to "publish or perish." To exacerbate problems further, funding for higher education is often one of the first items to suffer when state economies weaken, especially when state legislators perceive few, if any, benefits resulting from the state's investment (Lambert & Sterling 1988; Plaisance 1997). Faced with downsizing and financial shortages, the importance of service to key stakeholders is expected to increase in the future (Ferrell 1995; Plaisance 1997).

These problems are particularly severe in smaller, non-doctoral institutions. Recognition and funding for research activities are typically much lower compared to their doctoral-granting counterparts. In addition, doctoral students are not available to facilitate the faculty member's teaching and research efforts. The expectations, however, for both quality and quantity of research effort have increased in response to AACSB accreditation standards (AACSB & EFMD 1982; Porter & McKibbin 1988; Urban, et. al. 1996). With teaching loads of nine to twelve hours per semester, and up to five course preparations per year, the faculty member's ability to invest considerable time and effort seeking external funds through grant writing is often limited. In addition, summer teaching is often viewed as a financial necessity, further reducing the faculty member's time available for research activity (AACSB 1994c). The results are an increased expectation for research without a corresponding increase in support and/or recognition, and severe limitations on self-funding.

An effective solution, albeit partial, would need to address the major limitations of research funding and the faculty member's time constraints. Interactions with the business and nonprofit communities would need to satisfy both

the academician's and the practitioner's information needs simultaneously. Finally, a "solution" must also be consistent with the basic mission of the institution, thereby enhancing its image and promoting goodwill among its constituents. These goals appear to be outcomes associated with cooperative research efforts suggested in the literature (Lambert & Sterling 1988; Pharr & Stuefen 1991).

**Characteristics Of Proposed Cooperative Research Programs**

These proposed cooperative research programs would involve custom and, possibly, subscription research projects designed and executed by faculty members, students, and research bureau personnel for various profit and nonprofit clients. Two important ingredients for success include an assurance of the faculty member's access to the research data and an affordable and timely product for the client. These two ingredients highlight the basic philosophy behind these types of programs: the primary consideration for entering into a research contract is the ability to satisfy these dual data requirements.

The role of the research bureau would be that of a clearinghouse for matching client needs with faculty expertise and research interests. The coordinating role of the research bureau would be crucial to the success of a formalized program. The research bureau's primary tasks would include client recruiting, contract negotiation, record keeping and billing, staffing, and secretarial support. The main purpose is to relieve the faculty member of the administrative burden so that his/her time is devoted to the content/theory issues related to his/her area of expertise. A ready and able pool of faculty with varied research interests would be necessary in order to serve client needs in a reasonably timely manner.

From the faculty member's perspective, the primary incentive is access to data for academic research and publications. This would likely include some degree of manipulation for theory testing purposes. The means of assurance of free use of the data would be a release form signed by the client, the faculty member and the research bureau (Yovovich 1993). This document would grant permission for use of the data for academic purposes only and would insure the anonymity of the client organization. Care must be taken, however, to insure that the confidentiality clause is consistent with the university mission and the Board of Regents/State Board of Education's policies on public domain.

**Anticipated Benefits To The Participants**

The implementation of cooperative research programs may represent a form of Pareto optimality. A simultaneous gain in "welfare" for all participants may be possible, provided that the parties involved recognize that it is not a "something for nothing" arrangement for any of the participants. In previous instances, however, numerous benefits have been experienced (Lambert & Sterling 1988; Peltier, et al. 1995).

As noted earlier, perhaps the primary benefit to the faculty member is access to research data for publication purposes. The "release form" agreement and a "cost plus a nominal fee" pricing strategy may be viewed as a form of funded research, thereby covering the cost of data acquisition and providing compensation for the faculty member. Through these efforts the faculty member will also develop a better understanding and appreciation for the efforts and roles of the practitioner. Another benefit of increased exposure and involvement in the local and regional community would be the development of valuable contacts in both the private and public sectors. Inclusion of the business research bureau as a facilitator would reduce the faculty member's time requirements.

For the client, the primary benefit would be access to high quality research at an affordable price. This would provide an additional avenue for managing uncertainty and hopefully, as a re-

sult, increased performance. Increased communication between the academic and practitioner worlds could also address the long-standing isolation criticism of both business and academia (Porter & McKibbin 1988; Urban, et. al. 1996; Noftsinger 1996; Limpert 1997; Bringle and Hatcher 2000).

Regarding the research organizations, the role of many research bureaus and business development centers is to function as a primary service element of the business school or university. Programs such as these could serve to enhance this important function. The result would be a greater level of exposure for the business school and university in the local, state and regional economy. This should also result in enhanced credibility in both the business and political arenas. The benefits, or payoffs, if demonstrable as contributions to economic development, could lead to greater political influence and, possibly, increased funding for state supported schools of business.

For student participants, the major benefit is hands-on experience. Comprehensive experiential exercises have often been cited for their ability to enhance the learning process (Lambert & Sterling 1988; Peltier, et al. 1995; Zielinski 1995; Urban, et. al. 1996; Bringle and Hatcher 2000). Student may receive funding and/or academic credits for participation, however, neither would be mandatory. The absence of any formal compensation in the form of money or credit has been viewed as a means to attract only the most motivated and capable student participants seeking a meaningful learning experience (Peltier, et al. 1995)

Most of the possible benefits associated with this type of program are consistent with AACSB recommendations for business schools in general (Porter & McKibbin 1988; AACSB & EFMD 1982; AACSB 1993; Urban, et. al. 1996). Increased communications between practitioners and business schools, increased service to the business and public sectors, and increased research productivity would be logical expectations for such a program.

**Research Methodology**

In order to document the incidence of cooperative research efforts, levels of activity and success, and the associated benefits and drawbacks, a survey methodology was employed for data collection. This section will present the population of interest, sample selection, questionnaire development and execution procedures.

*Populations*

This research focused on two separate, yet related, populations of interest. The first included all university- and college-based business schools in the United States, both private and public. The contact person was the dean of each respective business school, thus representing the academic component of the cooperative research effort. In addition to the business school dean population, a second population consisting of business research bureaus was also surveyed. The contact person for this population was the research bureau director at each respective institution. It was anticipated that these populations would provide different, yet complementary perspectives on cooperative research efforts.

*Sample Selection*

Sample selection was relatively straightforward. In the case of the research bureau population, the Association for University Business and Economic Research (AUBER) membership directory was used to identify the members of the population. Conversations with research bureau directors indicated that the AUBER membership role included over 90% of all college- and university-related research organizations. Since the entire membership totaled only 155, all AUBER members were included.

In the case of business school deans, the AACSB membership directory was employed.

**Table 1**
**Major Research Questions**

| | |
|---|---|
| Identification of the institution | Current and past users |
| number of faculty | Types of projects undertaken |
| number of students | client or firm characteristics |
| undergraduate degrees offered | business |
| graduate degrees offered | nonprofit |
| accreditation status | governmental |
| Type of institution | trade associations |
| private college or university | Means of recruitment |
| public institution | faculty contacts |
| Location characteristics | Research center contacts |
| business environment (50-100 mile radius) | unsolicited business inquiries |
| types of firms | student contacts |
| "User" status | political references/inquiries |
| program in operation -- formal or informal | Project Cost |
| prior experience but discontinued operations | Publication possibilities and outcomes |
| never attempted such an operation | journal articles |
| Degree of involvement | trade publications |
| Faculty | conference presentations |
| research center directors/assistants | Major benefits and problems of project |
| research center support staff | implementation |
| students | |

Discussions with business school deans indicated that the AACSB directory includes 90% or more of all college- and university-based schools of business in the United States. There are over 700 educational institutional members of AACSB. Due to financial limitations, a random sample of 300 educational members was selected, rather than a complete census.

*Questionnaire Development*

The first stage in the development of the initial survey involved in-depth interviews with directors of business research bureaus and business school deans. The result was a detailed listing of important information and key issues, all of which were incorporated into the initial questionnaire. A listing of these topics is presented in Table 1.

The second stage involved the pretesting and revision of the initial questionnaire. A number of participants from the first stage of development completed and reviewed the initial version of the survey, and refinements were made based upon their responses. The most substantial modification was the creation of two surveys, rather than just one: a "Dean" version and "Bureau Director" version. This was necessary due to different areas of familiarity associated with the different administrative positions. For example, most of the deans indicated that they were not familiar with the internal operations of the school's research bureau and, therefore, could not respond to questions pertaining to funding status or bureau staff, etc. The Dean version consisted of 25 questions while the Bureau Director version contained 27. In both cases, many of the questions had multiple parts. Whenever possible, the same questions and coding schemes were used on both surveys in order to facilitate comparisons between samples.

*Survey Execution Procedures*

Survey execution involved four stages. First, a prenotification letter was mailed to all

research bureau directors listed in the AUBER directory and to a random sample of 300 AACSB member school deans. The letter introduced the researcher, the nature of the research project, and emphasized the importance of the respondent's cooperation. Each letter was personalized with the subject's name, institution name, address, specific information in the letter, and the researcher individually signed each letter. In the second stage, a cover letter, the survey, and a postage-paid return envelope were mailed to the same individuals one-week after the prenotification letter. The cover letter was constructed in the same manner as the prenotification letter, reiterated the same basic information, and acknowledged the previous communication. After approximately two weeks, reminder postcards were mailed to those sample members who had failed to respond. Finally, the fourth stage included a second mailing of the survey to sample members who had failed to respond. This mailing included a second copy of the same survey, a postage-paid return envelope, and a cover letter. The new cover letter offered this second copy of the survey to those who had "misplaced" their first copy and made a plea to reconsider to those who had chosen not to participate after the first survey mailing and the reminder postcard.

Of the total initial mailing, the first wave of surveys resulted in a 27% response rate. The reminder postcard added an additional 6% and the second wave of surveys 14% more, for a total response rate of 47%. During the data collection period numerous messages were received from various sample members. Eighteen research directors indicated that either their research organizations were defunct or they were not "real" research centers in the AUBER sense of the term. In addition, two deans also served as directors of their school's research organization. An additional 23 deans were eliminated who were not representatives of US schools. After adjustments, response rates were 49% for the Bureau Director sample and 46% for the Dean sample.

*Nonresponse Bias*

In order to test for nonresponse bias three groups were compared in terms of degrees offered, accreditation status, and average number of tenure track faculty members. The groups included respondents to the first survey mailing, the second survey mailing, and the nonrespondents. Results of this comparison are presented in Table 2. The results suggest that some degree of nonresponse bias is present. Both the respondents and nonrespondents were virtually identical regarding degree programs offered. The nonrespondents, however, had a lower accreditation rate and smaller full-time tenure track faculties than responding institutions. Based upon the research orientation of the survey it might be expected that non-accredited institutions with smaller faculties would have less interest in research and, therefore, less motivation to respond. The most likely effect would be a slight overstatement of the extent of cooperative research activities currently underway in US colleges and universities.

**Survey Results**

As stated earlier, past literature has suggested cooperative research efforts between business schools and business and non-profit organizations as a means to simultaneous goal attainment. The results of the current research will concentrate first on the extent to which this is happening, the level of success, and distinguishing between successful and unsuccessful institutions. Next will follow an identification of cooperative research program characteristics, such as project topics, costs, and client organizations. Finally, the perceived problems and benefits will be identified as well as the likelihood of generating academic publications from cooperative research efforts. The evaluation of the Director and Dean samples were carried out in much the same manner; however, the Dean sample exhibited a great deal of uncertainty regarding more specific information such as number of contracts per client group and contract values.

**Table 2**
**Nonrespondent Analysis for Bureau Director and Dean Samples**

| Directors | Early | Late | Total | Nonresp |
|---|---|---|---|---|
| (137) | (46) | (22) | (68) | (69) |
| Undergrad Degree Only | 4% | 14% | 7% | 6% |
| Graduate Degrees | 96% | 86% | 93% | 94% |
| Accredited | 76% | 73% | 75% | 67% |
| Average # of Tenure Track Faculty | 70 | 63 | 68 | 58 |

| Deans | Early | Late | Total | Nonresp |
|---|---|---|---|---|
| (275) | (92) | (34) | (126) | (149) |
| Undergrad Degree Only | 20% | 12% | 18% | 20% |
| Graduate Degrees | 80% | 88% | 83% | 80% |
| Accredited | 46% | 59% | 49% | 35% |
| Average # of Tenure Track Faculty | 47 | 51 | 48 | 45 |

As a result, evaluation of specific characteristics will focus primarily on the Bureau Directors sample.

*Frequency of Occurrence and Degree of Success*

Institutions were categorized according to their level of research productivity, with productivity operationalized as the number of academic publications resulting from grant/contract research with business, not-for-profit, and governmental organizations. Four categories were identified: zero publications, one to three, four to nine, and ten or more per year. These results are presented in Tables 3 and 4. Similar patterns were observed in both samples. The largest category was the zero publication group while the productive groups were considerably smaller. The 80/20 principle is alive and well! Some indication of a critical mass is apparent, although the differences are not overwhelming. The more productive schools tend to have larger faculties, lighter teaching loads, and higher rates of accreditation.

An additional factor somewhat independent from faculty size is the level of faculty involvement. In spite of fluctuating faculty size, higher levels of productivity are achieved by institutions with the greatest faculty participation rates, as indicated by the five-year and regular faculty involvement rates. This is consistent in both samples, as indicated in Tables 3 and 4. Regarding the research bureau's contribution, there is some indication in the Bureau Director sample that larger bureaus are associated with higher productivity; however, this is not the case in the Dean sample. With regard to the Dean sample, however, the productive schools were more likely to have a research bureau; 37% for schools with publications resulting from grant/contract research compared to 28% for the nonproductive schools. Another consistent finding is that higher levels of research center involvement are associated with lower levels of productivity. Although this may at first appear counterintuitive, it may indicate a form of "compensatory" behavior. Applying more research center effort may represent an attempt to compensate for faculty time constraints and lower levels of faculty participation.

*Regression Analysis of Degree of Success*

Beyond the descriptive information garnered from the survey, regression analysis was used to identify factors that significantly increased the likelihood of successfully implementing a coop-

**Table 3**
**Bureau Director Sample Profile By Level Of Research Output**

| Directors | 0 Pubs[1] | 1-3 | 4-9 | 10 + |
|---|---|---|---|---|
| 67 | 25 | 20 | 16 | 6 |
| 100% | 37% | 30% | 24% | 9% |
| Accredited | 80% | 70% | 75% | 83% |
| Faculty Size[2] | 72 | 61 | 55 | 106 |
| Faculty Involved (past 5 years)[3] | 4% | 17% | 28% | 27% |
| Faculty Involved (regular basis)[3] | 3% | 5% | 7% | 10% |
| Teaching Load (credit hours/year)[2] | 17.0 | 14.1 | 16.1 | 13.8 |
| Level of Faculty Involvement[4] | 2.4 | 2.6 | 2.8 | 3.0 |
| Research Center Size[2,5] | 2.2 | 6.0 | 4.6 | 6.8 |
| | 1.8 | 2.8 | 7.3 | 10.3 |
| Level of Bureau Involvement[3,5] | 4.1 | 4.3 | 4.0 | 3.7 |
| | 3.5 | 4.3 | 3.9 | 3.7 |

1 Includes nine (9) schools that have not been involved in grant or contract research for over five years. These have been excluded from the table calculations that assume this type of research activity. This accounts for 13% of the sample.

2 These figures represent the average values for each output level category, respectively.

3 These figures represent the average percentage of faculty involved for each category, respectively.

4 These figures represent average scores on a five (5) point Likert scale ranging from No Involvement (1) to Considerable Involvement (5).

5 The first row presents average responses for bureau administrators while the second row presents responses for bureau support staff.

erative research program. A number of possible output measures were available, such as the total number of publications generated, however, one that resulted in a reasonable level of explanatory power was the average number of publications per faculty member (FACPAPER). This variable is intuitively appealing for a number of reasons. First, a successful program would provide a high level of benefits to a large number of participants. Higher average numbers of publications per tenure track faculty member, therefore, would indicate more successful cooperative programs. Secondly, the FACPAPER measure controls for faculty size, thus avoiding the simplistic conclusion that larger faculties lead to greater levels of success.

A stepwise regression with FACPAPER as the dependent variable resulted in the model presented in Table 5. Six variables remained in the final model. Three of these variables represent a research orientation necessary for a successful cooperative research program. Schools that achieved the highest number of academic publications per faculty member tend to be AACSB accredited, the primary business school in the state, and generate a large number of grants/contracts. The flagship state institutions that have earned AACSB accreditation tend to have a greater research orientation than secondary state business schools and/or those that are not accredited. In addition, although not all cooperative research efforts result in academic publications, higher numbers of grants/contracts tend to result in more publications.

A second dimension present in the data is faculty involvement. The more successful schools tend to have not only a greater number of faculty involved in cooperative research efforts, but also the highest proportion of tenure track faculty involved. This may represent a

Table 4
**Dean Sample Profile By Level Of Research Output**

| Deans | 0 Pubs[1] | 1-3 | 4-9 | 10 + |
|---|---|---|---|---|
| 126 | 69 | 17 | 20 | 20 |
| 100% | 55% | 13% | 16% | 16% |
| Accredited | 45% | 35% | 60% | 60% |
| Faculty Size[2] | 44 | 51 | 53 | 54 |
| Faculty Involved (past 5 years)[4] | 11% | 13% | 20% | 28% |
| Faculty Involved (regular basis)[4] | 8% | 7% | 9% | 17% |
| Teaching Load (credit hours/year)[2] | 17.2 | 18.4 | 16.6 | 16.5 |
| Level of Faculty Involvement[4] | 2.8 | 3.3 | 3.3 | 3.2 |
| Research Center Size[2,5] | 3.6 | 2.4 | 2.7 | 2.0 |
| | 1.5 | 1.6 | 1.7 | 2.0 |
| Level of Bureau Involvement[5] | 4.1 | 4.5 | 3.5 | 3.8 |
| % of Schools With Research Bureau | 28% | 41% | 35% | 35% |

1 Includes 34 schools that have not been involved in grant or contract research for over five years. These have been excluded from the table calculations that assume this type of research activity. This accounts for 26% of the sample.
2 These figures represent the average values for each output level category, respectively. Quarter system teaching loads have been converted to semester equivalents. Summer teaching is not included.
3 Quarter system teaching loads have been converted to semester equivalents. Summer teaching is not included.
4 These figures represent the average percentage of faculty involved for each category, respectively.
5 These figures represent average scores on a five (5) point Likert scale ranging from No Involvement (1) to Considerable Involvement (5).
6 The first row presents average responses for bureau administrators while the second row presents responses for bureau support staff.

culture that not only allows, but also expects and rewards this type of behavior. The sixth variable, Teaching Load, represents the time dimension. Schools with lower teaching loads, measured as hours of annual teaching requirements, tend to have the greatest number of academic publications per faculty member resulting from cooperative research efforts. Simply put, in order for a faculty member to successfully participate in such a program, he/she must have sufficient time available. In summary, based on the regression results obtained, it appears that a strong research orientation, high levels of consistent faculty involvement, and sufficient time for faculty participation are the keys to a successful cooperative research program.

*Characteristics of Cooperative Research Programs*

Business schools involved in cooperative research activities demonstrated a surprising degree of similarity in their modes of operations. A profile of active schools will be presented, including academic areas involved, client types served, degree of client diversity, research methodologies, promotional efforts, contract volumes and values, and compensation methods employed.

The academic disciplines involved in these research efforts, are indicated in Table 6. The three most popular areas of inquiry were economics, management, and marketing, while the

**Table 5**
**Multiple Regression Results - Publications Per Tenure Track Faculty Member as Dependent Variable**
**Research Bureau Director Sample**

| | |
|---|---|
| Multiple R | .718 |
| R Square | .516 |
| Adjusted R Square | .384 |
| Standard Error | .168 |

Analysis of Variance:

| | DF | Sums of Squares | Mean Square |
|---|---|---|---|
| Regression | 6 | .665 | .111 |
| Residual | 22 | .624 | .028 |

F= 3.908 Significance of F= .008

Variables in the equation:

| | Coefficient | St Error | Beta | T Value | Sig Level |
|---|---|---|---|---|---|
| Teaching Load | -.0156 | .0061 | -.4128 | -2.567 | .0176 |
| Total # of Contracts | .0111 | .0031 | .5941 | 3.605 | .0016 |
| Regular Faculty Participants | .0659 | .0317 | .7456 | 2.076 | .0497 |
| Primary BusinessSchool | -.2293 | .0782 | -.5278 | -2.932 | .0077 |
| Accreditation Status | .3248 | .1139 | .8197 | 2.852 | .0093 |
| Prop. Faculty Participating | 5.6413 | 1.9818 | 1.1559 | 2.847 | .0094 |
| Constant | -.1791 | .1591 | | -1.126 | .2725 |

least active areas were accounting and production and operations management. The Dean sample indicated a much more even distribution of academic involvement compared to the Bureau Director sample. Table 6 also indicates a high degree of project diversity, with a majority of active institutions involved in two or more areas of inquiry. The most common client types were business firms and government agencies, although there was a good deal of uncertainty in the Dean sample. The most common research methodologies employed were surveys and the evaluation of economic (i.e., BEA) and census data, as indicated in Table 7.

As a rule, very little promotional effort has been devoted to developing cooperative research relationships. Only 26% of the Dean and 21% of the Bureau Director samples used any promotion at all. The most common methods cited were informational brochures, personal contacts by faculty and bureau staff, open house/business fairs, and contacts through state and local economic development offices. None of the frequently cited methods appeared to be more popular than others.

The contract values and volumes generated suggest that cooperative research efforts do have the potential to provide a substantial level of external funding. Table 8 presents the proportion of contracts by contract value. For the active schools, a majority of the grants/contracts generated are valued at $50,000 or less, with half of the Bureau Directors indicating 80% or more of their volume valued at less than $25,000. A vast majority had none valued at more than $75,000. A very similar pattern was present in the Dean sample, as indicated in the lower half of Table 8. Table 9 indicates that most of the active schools generate only one to three contracts per client group. Some schools, however, do generate substantial volumes working with private firms and governmental agencies--up to 20 to 40 grants/contracts, respectively. Although most active schools likely generate revenues of

**Table 6**
**Content Areas and Client Types for Bureau Director and Dean Samples**

| Academic Area | Director Sample[1] | Dean Sample[2] |
|---|---|---|
| Accounting | 9% | 48% |
| Economics | 70% | 57% |
| Finance | 19% | 50% |
| MIS | 17% | 48% |
| Management | 46% | 73% |
| Marketing | 39% | 59% |
| POM | 6% | 39% |
| Degree of Diversity | | |
| One Area | 41% | 9% |
| Two or More | 59% | 91% |
| Three or More | 35% | 72% |
| Client Types Served | | |
| Private Firms | 76% | 28% |
| Government Agencies | 74% | 24% |
| Trade Associations | 30% | 13% |
| Not-For-Profits | 57% | 9% |
| Not Sure | 4% | 10% |

1 Percentages based upon 57 responses. Nine of the total 68 respondents had no contract/grant activity and two had no response to these questions.
2 Percentages bases upon 94 responses. Thirty four of the total 128 had no contract/grant activity.

**Table 7**
**Research Methodologies Used by Active Organizations as Reported by Research Bureau Directors**

| Research Methodology | Proportion Using |
|---|---|
| Survey Methods | 77% |
| Economic Data | 75% |
| Census Data | 65% |
| Analysis of Individual Firm | 35% |
| Experimental Designs | 19% |
| Focus Group Interviews | 14% |
| Consumer Panels | 5% |

$100,000, or less per year in cooperative research funds, the data suggest that levels of $1,000,000 or more can and have been achieved.

Faculty members and, where a research bureau exists, bureau staff are the primary participants in cooperative research efforts. Students very seldom play a significant role--less than 20% for both the Dean and Bureau Director samples. Compensation for faculty members involved is most likely to be monetary. The Bureau Director sample indicated 84% monetary,

Table 8
**Proportion of Contracts by Contract Value as Reported by Research Bureau Directors and Deans**

**Bureau Directors**

| Value of Contracts | Proportion of Contracts at Each Cost Level | | | |
|---|---|---|---|---|
| | None | 1-40% | 41-79% | 80% or more |
| Under $25,000 | 16% | 11% | 23% | 50% |
| $25,001 to $50,000 | 49% | 41% | 5% | 5% |
| $50,001 to $75,000 | 58% | 36% | 4% | 2% |
| $75,001 to $100,000 | 78% | 20% | 0% | 2% |
| $100,001 to $200,000 | 78% | 18% | 2% | 2% |
| Over $200,000 | 88% | 8% | 0% | 4% |

**Deans**

| Value of Contracts | Proportion of Contracts at Each Cost Level | | | |
|---|---|---|---|---|
| | None | 1-40% | 41-79% | 80% or more |
| Under $25,000 | 40% | 14% | 20% | 26% |
| $25,001 to $50,000 | 55% | 29% | 10% | 6% |
| $50,001 to $75,000 | 76% | 21% | 1% | 1% |
| $75,001 to $100,000 | 81% | 14% | 3% | 2% |
| $100,001 to $200,000 | 85% | 7% | 7% | 1% |
| Over $200,000 | 92% | 6% | 1% | 1% |

**Table 9**
**Proportion of Respondents by Annual Volume and Client Type as Reported by Research Bureau Directors**

| Client Type | Proportion of Contracts at Each Volume Level | | | | |
|---|---|---|---|---|---|
| | 1-3 | 4-6 | 7-10 | 11-20 | 21-40 |
| Private Firms | 53% | 30% | 12% | 5% | 0% |
| Governmental Agencies | 57% | 26% | 7% | 2% | 8% |
| Trade Associations | 93% | 7% | 0% | 0% | 0% |
| Nonprofit Organizations | 84% | 13% | 0% | 3% | 0% |

12% release time, and 4% as travel and/or computer resources. The Dean sample indicated 50% monetary, 34% release time, 3% travel and/or computer resources, and 3% on a pro bono basis.

*Benefits and Drawbacks of Cooperative Research Efforts*

Benefits and problems associated with cooperative research efforts are presented in Table 10. The most frequently mentioned positives were an improved image or public relations outcome and an increase in faculty competence and earnings. Increased faculty research and publications were listed much less frequently. The greatest drawbacks of these efforts are a lack of funding and faculty support. Also mentioned frequently were administrative problems associated with complex research arrangements. Consistent with these findings is a less than enthusiastic assessment of the likelihood of generating academic publications by both administrative groups.

**Future Possibilities**

Business schools may be able to follow a niche strategy in the development of cooperative

Table 10
**Program Benefits and Problems for Bureau Directors and Dean Samples**

| Perceived Benefits | Director Sample | Dean Sample |
|---|---|---|
| Improved Image/Relations | 41% | 33% |
| Improved Faculty Competence | 24% | 28% |
| Increased Faculty Earnings | 24% | 20% |
| Increased Faculty Research | 3% | 5% |
| Increased Publications | 7% | 3% |
| Real World Experience | 7% | 5% |
| Other | 7% | 9% |
| Perceived Problems | | |
| Lack of Consulting-Research Overlap | 7% | 5% |
| Research Expectations Too High | 3% | 2% |
| Business' Lack of Research Understanding | 3% | 2% |
| Lack of Funding | 16% | 16% |
| Lack of Faculty Interest | 22% | 9% |
| Teaching May Suffer | 9% | 3% |
| Accountability/Complexity | 10% | 10% |
| Other | 43% | 36% |
| Likelihood of Academic Publications[1] | | |
| Active Schools/Organizations | 2.6 | 2.4 |
| Inactive Schools/Organizations | 2.9 | 2.6 |

1 Responses are to a five point Likert scale ranging from Very Unlikely (1) to Very Likely (5).

research programs. Schools might develop areas of specialization that focus on specific industries that are indigenous to the state or region. Food processing, engineering, information technology, e-commerce, agriculture, manufacturing, or health care industries in the vicinity of the College or University could very easily become part of the cooperative effort. On the other hand, a Business School may choose to specialize in specific research methodologies such as survey centers, focus groups, consumer panels, Group Support Systems, input/output models, or economic impact studies, to name just a few. It may also be possible to serve smaller business firms, local and state governmental agencies, and nonprofit groups that may currently be priced out of the consulting market due to resource limitations. The focus of the business school's niche would depend upon the areas of specialization and level of interest of the faculty members involved. Faculty involvement, one of the major obstacles cited by both deans and bureau directors, may be encouraged through various incentives. Perhaps the most direct method would be the incorporation of this behavior into the reward structure, thereby assimilating it into the culture of the business school. Care must be taken, however, to reconcile cooperative research efforts of this nature with the research philosophy of the institution and accreditation standards. Considering mission driven AACSB accreditation standards and an anticipated increased service requirement for faculty (AACSB 1994d; Mason 1995; Urban, et. al. 1996), this reconciliation is quite plausible.

Cooperative research efforts may also aid schools in meeting the new AACSB standards. The new standards broaden the definition of intellectual contributions and allow individual schools to develop their own mission statements (AACSB 1993; AACSB 1994d; Urban, et. al. 1996). The success of schools in generating academic publications from cooperative research

efforts documented in this study indicates the ability of these programs to further intellectual contributions. According to the AACSB, intellectual contributions include basic scholarship, applied scholarship, and instructional development (AACSB 1993; Urban, et. al. 1996). Depending on the nature of the research efforts, the results could satisfy either basic or applied scholarship, as defined by AACSB. A resource base sufficient to achieve the mission of the school is another AACSB requirement for accreditation (AACSB 1993). The ability of cooperative research efforts to generate funds to, in part, fund scholarly research activity has been documented in the current study. In addition to the generation of research dollars, participating faculty and institutions will become more visible in the business and governmental communities, as prescribed by AACSB (AACSB 1994b, Urban, et. al. 1996). As a result, these important constituencies may perceive tangible benefits from public and private funds invested in business education. Although cooperative efforts are not the only means to achieve these ends, they do offer the possibility to achieve them simultaneously. Given the current budgetary constraints and pressures to increase faculty productivity, cooperative efforts appear to be a viable and attractive alternative.

**Limitations**

Although this study provides important and useful information, a number of limitations do exist. The Dean and Bureau Director samples used in this study can be categorized as primarily "administrators." Although the incidence and output of cooperative research efforts documented in this study would suggest acceptance by both faculty and the various client groups, due to financial limitations, this study did not specifically sample these two important participants. Questioning these groups could potentially reveal very different perspectives on the benefits and drawbacks of cooperative research efforts and, therefore, avenues for enhancing these relationships. Secondly, the analysis does indicate that some degree of nonresponse bias is present. Smaller, non-accredited, and less research oriented schools are under-represented in this study. The most likely outcome is an upward bias in the documented level of incidence of cooperative research efforts. Finally, although the response rates are acceptable and the samples include one-half of the Bureau Directors and one-fifth of the Dean populations, these samples are considered quite small for regression analysis, given the number of independent variables involved.

**Conclusions**

Cooperative research efforts between business and academia are taking place in many schools, and academic publications have resulted from a number of these arrangements. In spite of a lukewarm response from administrators, almost half of US institutions have achieved some degree of success in meeting both the information needs of practitioners and research needs of the academician. The key ingredients appear to be a high degree of faculty involvement and a streamlined coordination scheme for the cooperative effort. Ironically, however, the survey results also indicate that these are the greatest problems associated with this type of effort. In spite of a suspected upward bias in the results, this research indicates that these arrangements are possible given the prerequisite funding and organizational support from administrators and the commitment of faculty members.

**Suggestions for Future Research**

A number of future research efforts should prove valuable in increasing both our understanding of cooperative efforts and the odds for successful implementation. First, faculty and prospective profit and not-for-profit clients should be surveyed in order to understand their perspectives on cooperative research efforts. In addition, existing programs should be evaluated in order to identify organizational structures and operating procedures of successful cooperative

arrangements. Finally, longitudinal studies would be useful for monitoring the prevalence, evolution, and success of cooperative research efforts in U. S. schools of business.

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