Influence Methods of Project Managers: Perceptions of Team Members and Project Managers

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Abstract

Much and significant research was done for more than 100 years in the area of leadership. However, with the exception of the studies by Hodgetts (1968) and Thamhain and Gemmill (1974), not much has been done in the area of project leadership. This paper presents the findings of four research studies in this area. Among others, the findings show that professionally challenging projects are the single most important factor influencing the behavior of project team members. Team members need to be challenged, they respect leaders who know how to properly exercise their authority, and they need to believe in their leaders, both in terms of the leaders' competence and ethical character.

Keywords: leadership; authority; influence methods

2001, Vol. 32, No. 3, 12-20
8756-9728/01/$5.00 per article + $0.50 per page

Project managers must be skilled in handling both the task and the people side of project management. The task side entails the technical aspects of the project *and* the tools (software) and techniques (logic diagrams, Gantt charts, statistics, etc.) for planning and controlling the project. The people side entails the skills to provide the motivating environment that will induce the project's personnel to work as a team to accomplish its objectives. Since the early 1960s, researchers have done a considerable number of studies on the people side of project management. Two of these studies are cited very frequently, even in recent publications (e.g., Kerzner, 1997). These are the related studies by Thamhain and Gemmill (T&G) on "Influence Styles of Project Managers: Some Project Performance Correlates" (1974) and by Hodgetts on "Leadership Techniques in the Project Organization" (1968).

These were seminal and groundbreaking studies for identifying leadership techniques in project management and the effectiveness of various influence methods on project performance. However, the samples studied were limited in terms of sample size and the variety of industries represented. The four studies reported here update these studies and draw together both the perceptions of project team members and project managers. More specifically, the purposes of the four studies reported in this paper are to: (1) replicate portions of the above two studies and provide more current data; (2) test the findings of the previous studies with larger research samples; (3) expand and test additional survey items as a result of findings from the initial studies reported here; and (4) provide a synthesis of the findings of all these studies.

Influence Methods of Project Managers—Perceptions of Support Personnel (Team Members)

In 1974, T&G reported the results of a study regarding the methods of influence used by project managers with project personnel. Their goal was to determine the relationship between the utilization of eight methods of influence and project performance. Their study involved 22 project managers and 66 project personnel employed in a project-oriented business division of a large electronics firm. Among other things, the T&G study found the following:

- Support personnel asked to rank eight influence methods between 1, the most important, and 8, the least important reported in Table 1
- The use of authority as an influence method has a negative effect, resulting in a lower level of project performance, and less disagreement and involvement among project personnel;
- Project managers who were perceived by their project personnel as emphasizing work challenge and expertise as influence methods achieved higher effectiveness ratings (from their supervisors) on overall project performance and tended to foster a climate of greater disagreement and involvement among their project personnel.

Method	Average
Authority	3.0
Work Challenge	3.2
Expertise	3.3
Future Work Assignments	4.6
Salary	4.6
Promotion	4.6
Friendship	6.2
Coercion	7.8

Table 1. Ranking of Influence Methods by Support Personnel

Studies 1 and 2

Two initial studies were conducted in order to replicate and test the findings of the T&G study, using a more current and larger sample (1,080 team members compared to 66 in the T&G Study). More specifically, purposes of the first two studies were to determine: (1) if the rankings of the eight influence methods were consistent with the T&G study; (2) if the rankings varied by industry and sector (i.e., employees of aerospace companies, financial companies, private sector employees, and public sector employees); and (3) determine whether the T&G categories of influence were adequate and complete.

Sample, Methods, and Measures. Project team members from a variety of different industries were surveyed. Industries in the sample represented a wide variety, including: mining, construction (nonresidential and highway), manufacturing, transportation, telecommunications, finance, insurance, real estate, aerospace, and government. Functional areas represented by the respondents included human resources, management information systems, manufacturing operations, marketing, general management, finance, engineering, communications, and public affairs.

The respondents reported in a matrix system to a project manager. Data was collected during project management training seminars conducted by one of the authors. These seminars were both public (seminars attended by persons working for many firms) and in-house (seminars attended by employees of a single firm).

The nature of the research study was first explained to the prospective respondents. Seminar participants were informed that completion of the questionnaire was voluntary, although all seminar participants did participate in the study. Subjects completed the survey in approximately 30 minutes, and this was followed with brief group discussion in order to identify any difficulties that participants may have had with the questionnaire items.

In order to study the relative importance and effectiveness of the methods of influence used by project managers, participants were asked to rank eight methods of influence used in the T&G study. Instructions asked participants to "rank in order of importance ... the following eight factors regarding their influence on your behavior." The survey items used to study the rank ordering were drawn from the T&G study,

Method	Average
Work Challenge	2.2
Project Authority	3.2
Project Management Expertise	3.3
Similar Future Work	4.2
Salary	5.2
Promotion	5.2
Friendship	6.2
Coercion	7.8

Table 2. Ranking of Influence Methods, Study 1 (n = 862)

Method	Average
Work Challenge	2.4
Project Management Expertise	3.3
Project Authority	3.3
Leader's Professional Integrity	3.4
Similar Future Work	5.3
Salary	5.8
Promotion	5.8
Friendship	6.2

Table 3. Ranking of Influence Methods, Study 2 (n = 218)

Influence Method	Project Manager's Effectiveness
Challenge	0.41
Knowledge	0.71
Professional Integrity	0.63
Authority (Exercised)	0.43
Authority (Manner)	0.50

* Kendall's Tau

$p < 0.0001$ for all associations

Table 4. Correlations* Between Influence Methods and Project Manager's Effectiveness, Study 3 (n = 53)

although the items were slightly modified (see Appendix 1). The influence methods are identified in Appendix 1 in italics. Participants were only provided with the statements following the italicized methods in Appendix 1. The questionnaire used in these two studies was different from the one used in the T&G study in the following areas: (1) all items were revised to be gender neutral; (2) the wording of the project authority item was expanded to define and clarify the meaning of "formal project authority;" and (3) the questions on salary, promotion, and future work assignments were expanded to show how the influence might occur. All of these changes were a product of perceived ambiguities and suggestions made by the participants in the pilot studies.

Instrument Revision. During the discussion that followed administration of the survey to the first group studied, a number of respondents voiced concerns about both influence methods that were included and not included in the questionnaire.

A number of participants felt that the coercion method ("he/she can apply pressure or penalize me in some way") should not have been one of the methods because it is socially unacceptable to admit that fear was a person's primary motivator. This view seems credible because, despite the fact that a number of respondents would have suffered greatly if they lost their job, the highest that "coercion" was ranked (and by only one respondent) was fourth. Moreover, in the original T&G study, coercion ranked a distant last in the ranking of influence methods. The results of the first sample in this study mirrored the T&G results with the mean ranking of 7.8, making coercion the least important influence method. While coercion might well be a method employed by project managers, perceptions of team members indicate that this is not a very significant or important method in relation to the remaining seven methods. The coercive method also may be reflected in other items, for example, that managers can influence salary, promotion, or future work assignments. While these items may be interpreted in a positive (reward) manner, subjects also may take this to be a negative (coercive) factor.

A number of participants argued that the "the project leader's professional integrity" is important and should have been one of the factors in the questionnaire. Discussion revealed a distinction between professional and personal integrity. According to the participants, professional integrity involves behavior and leadership in the work environment, while personal integrity involves behavior outside the work environment. Professional integrity was considered to be an important management influence for team members. Generally, team members saw the professional integrity of project managers as involving truthfulness, follow-through, assuming responsibility, or generally being able to count on their managers.

Responding to these concerns, a second study (using a different sample) was then conducted to address these two issues. In this study, the method "coercion" was substituted with the method "leader's professional integrity" (see Appendix 1 for the item wording). The data collection methods and instructions to respondents were the same as study 1. The findings of the two research studies are summarized in Tables 2 and 3.

The top three methods or reasons that team members comply with project managers were found to be the same in both studies (challenge, management expertise, and project authority), and these three were the same as found in the T&G study. However, the relative ordering was different in each of the studies.

Both studies (Tables 2 and 3), unlike the T&G study, show that "work challenge" was ranked as the most important of the eight methods, compared to the T&G study which found work challenge to be a close second to project authority. The average ranking of work challenge for the two studies was 2.2 and 2.4, nearly a full ranking position ahead of the second highest ranked method. In the T&G study, authority was ranked highest, but with an average of 3.0. This finding of work challenge being the highest ranked is not surprising since work challenge is part of the job's content and is one of the self-actualization needs identified by Maslow (1943) and one of the satisfiers/motivators identified by Herzberg (1959). That is, (1) self-actualization, which includes challenge, is at the peak of the

pyramid that describes Maslow's hierarchy of human needs, and (2) challenge is one of the factors that motivate employees in Herzberg's "two-factor theory."

Both studies (Tables 2 and 3), like the T&G study, show very consistent average rankings for "project authority" and "project management expertise" in terms of the numerical scores. Interestingly, project management expertise had the identical ranking average in all three studies (3.3). The average project authority ranking was 3.2 and 3.3 in the two studies, compared to 3.0 in the T&G study. These patterns were consistent for all major groups in the two studies reported here: all participants (1,080 from 56 companies), persons employed in aerospace (338 participants from five companies), persons employed in nonaerospace business services (183 participants from 27 companies), persons employed in nonaerospace finance (145 participants from two depository and three nondepository institutions), and with federal government employees (20 participants from one agency).

In the first study (Table 2), the rank order of the influence methods was the same for all major participant groups [all participants (862), persons employed in aerospace (249), persons employed in nonaerospace (613), persons employed in nonaerospace business services (183), and persons employed in nonaerospace finance (100 persons from two depository and two nondepository institutions)].

The second study (Table 3) shows that the "leader's professional integrity" (3.4) virtually tied with "project authority" (3.3) and "project management expertise" (3.3) as second to "work challenge" (2.4). This finding cannot be compared with the findings of the T&G study, since they did not include the "leader's professional integrity" in their study. It may not be surprising that expertise and professional integrity were ranked so closely. However, it is surprising that project authority was ranked so high, especially the way authority was defined. That is, the question in the survey was designed to give participants a clear understanding that (1) project authority (the right to *suggest* what needs to be done and when it needs to be done) is a "weak" type of authority, and (2) project authority is not as "strong" as supervisory authority (the right to make decisions that must be followed by others). This type of project manager's authority is present in a "balanced matrix" (Larson & Gobeli, 1987). The result may indicate that the proper exercise of project authority by project managers is respected by team members and positively affects their behavior. This is supported by respondents, who stated that they are influenced positively only when project leaders also are competent and have professional integrity. Thus, the proper exercise of authority seems linked with a leader's perceived expertise and professional integrity.

In the second study (Table 3), the rank order of the influence methods was the same for all major participant groups [all participants (218), persons employed in aerospace (89), persons employed in nonaerospace (129), and persons employed in nonaerospace business services (42)] *except* the group consisting of persons who worked in nonaerospace finance (45 persons from two depository institutions). In this group, the factor the leader's professional integrity was ranked third, and very close to project management expertise. This finding is very interesting because it shows that professional integrity is considered, as it should be, more important by this group, which is entrusted with the money of others.

Study 3

The participants in studies 1 and 2 had problems ranking the method "project authority." They asked if the question meant (1) the *degree* to which project managers exercised their authority, (2) the *manner* with which they exercised their authority, or (3) both degree and manner. A third study was then conducted (1) to address the problem that respondents had in dealing with the method "project authority" and (2) to explore whether there was a correlation between the "project leader's effectiveness" (as rated by the team members) and four methods of influence of project leaders. The sample studied consisted of 53 persons from different companies. Sample characteristics of respondents were very similar in terms of both industries and functional areas represented, except public affairs were not included among the functional areas. See Appendix 2 for the specific questions included. Table 4 summarizes the findings of this study.

Correlations of variables were computed using Kendall's Tau as an appropriate measure of association for ordinal level variables (Blalock, 1979). Key results included:

- Consistent with results of the T&G study, effectiveness of project managers in carrying out project assignments was positively and significantly associated with project challenge (0.41) and the quality of his/her knowledge and advice (0.71). The relationships in this study were found to be stronger than in the T&G study (0.25 for challenge and 0.40 for knowledge/expertise in T&G);
- A strong, positive association (0.63) also was found for professional integrity as an influence method. Indeed, the strongest correlations were found for expertise and integrity of managers as it related to their effectiveness. Generally, the higher project team members ranked the work challenge, the knowledge of the manager, and the manager's professional integrity, the higher the manager was ranked in project management effectiveness;
- Contrary to the T&G study, the effectiveness of project managers in carrying out project assignments was positively and significantly associated with authority as a method of influence. Perceived effectiveness of managers was positively associated with the degree to which they exercise their authority (0.43) and the manner they use when exercising their authority (0.50). The T&G (1994) study found a significant, but negative correlation (–0.30), leading them to conclude that "... the findings suggest that the use of authority as an influence method has a negative effect resulting in ... lower level of project performance ..." (p. 222).

	Very Important	Important	Not Important
Negotiation	48%	44%	8%
Personality and/or Persuasive Ability	40%	56%	4%
Competence	45%	53%	2%
Reciprocal Favors	6%	41%	53%

Table 5. Importance of Leadership Techniques for Overcoming "Authority Gap" (Hodgetts Study)

The strength of the association was stronger and in the opposite direction for authority and effectiveness. How are these differences to be explained? There are several possible reasons for the difference in findings: (1) The most obvious explanation relates to the wording of the questions and the distinction made between exercise and manner of the use of authority. Since T&G did not define "formal authority" ("I feel he has the formal authority" was used in the T&G study), the respondents may have based their answers on the negative/improper usage of authority. (2) Respondents in the T&G study may have assumed that formal authority meant that the project leaders possessed many supervisory rights (i.e., direct control over raises, transfers, and promotions, etc.) over the team members. The latter assumption by respondents was evident in the first two studies conducted here and prompted the inclusion of a more precise definition of authority in the third study and the use of two questions regarding project authority (one dealing with the degree and the other with the manner it was exercised) in the third study. (3) Also, in the T&G study the rating of the effectiveness of project managers was provided by their supervisor while in the third study reported here, the rating was provided by the team members.

Influence Methods of Project Managers—Perceptions of Project Managers

The overwhelming majority of projects in the United States are done in a cross-functional/matrix setting. In this setting, the project manager only has project authority over the project team. Project authority is the right to suggest to others *what* needs to be done and *when* it needs to be done. Project authority is not as strong a source of influence as compared to supervisory authority (the right to make decisions that must be followed by others), which project managers generally do not possess. The end result is that project managers experience a gap of influence, called "authority gap," when they attempt to influence the behavior of the team members. This gap frustrates many project managers and it is manifested by comments like "How can I get things done when I have responsibility over everything and authority over nothing?"

Hodgetts (1968) reported the results of a study regarding the techniques used by project managers to overcome the authority gap. Hodgetts, through four interviews, identified that project managers use four techniques (negotiation; personality, persuasive ability, or both; competence; and reciprocal favors) in their efforts to overcome the authority gap. A two-page questionnaire then was sent to 46 firms. The authority gap was defined and the four techniques were described in the questionnaire. The respondents were asked to state whether each technique was "very important," "important," or "not important" in helping them overcome the authority gap. The respondents managed reasonably large projects (in the multimillion-dollar range). Table 5 summarizes the findings of Hodgetts study, based on an 83% response rate to his questionnaire.

Study 4

The purpose of study 4 was to investigate how the four influence methods applied in the small project environment (less than $1 million). The present study involved 759 project managers who attended the various public and in-house project management seminars conducted by one of the authors of this study. The average size of the projects managed by all respondents was $324,000 ($221,000 for nonaerospace and $534,000 for aerospace). Many of the aerospace projects were subprojects of much larger projects. The nature of the research study and the term "authority gap" were described to each group of participants prior to completing a questionnaire. The respondents were asked whether each of four methods (negotiation; personality, persuasive ability, or both; competence; and reciprocal favors) utilized by project managers to overcome the authority gap was "very important," "important," or "not important." Respondents were encouraged to ask questions if they encountered any problems in their efforts to complete the questionnaire. A discussion period followed the completion of the questionnaire.

Table 6 summarizes the findings of this research study by major participant group [all respondents (n = 759), persons employed in aerospace (n = 250), persons employed in nonaerospace (n = 509), persons employed in nonaerospace business services (n = 181), and persons employed in nonaerospace finance (n = 62)].

	Very Important	Important	Not Important
All Respondents (n = 759)			
Negotiation	57%	43%	0%
Personality and/or Persuasive Ability	73%	27%	0%
Competence	66%	34%	0%
Reciprocal Favors	5%	44%	51%
Aerospace (n = 250)			
Negotiation	44%	56%	0%
Personality and/or Persuasive Ability	76%	24%	0%
Competence	63%	37%	0%
Reciprocal Favors	3%	40%	57%
Nonaerospace (n = 509)			
Negotiation	63%	37%	0%
Personality and/or Persuasive Ability	71%	29%	0%
Competence	68%	32%	0%
Reciprocal Favors	6%	46%	48%
Nonaerospace Business Services (n = 181)			
Negotiation	77%	23%	0%
Personality and/or Persuasive Ability	73%	27%	0%
Competence	75%	25%	0%
Reciprocal Favors	4%	52%	44%
Nonaerospace Finance (n = 62: One Depository and One Nondepository Institution)			
Negotiation	71%	29%	0%
Personality and/or Persuasive Ability	69%	31%	0%
Competence	66%	34%	0%
Reciprocal Favors	3%	60%	37%

Table 6. Importance of Leadership Techniques for Overcoming "Authority Gap"

Many respondents stated that it was difficult for them to respond to "reciprocal favors" because (1) there are ethical and unethical reciprocal favors and (2) they utilize reciprocal favors when they negotiate. As a result, they felt that this method should not have been included in the questionnaire. This issue was not identified in the Hodgetts study, and it may help to explain the large number in the Hodgetts study and in this study who indicated that reciprocal favors were not important as a leadership technique. The technique "reciprocal favors" may be ambiguous or perceived by others as possibly involving unethical behaviors. If so, it is no wonder that the majority of respondents would have considered it "not important."

Table 6 shows, that on all major participant groups, 100% of the respondents rated negotiation; personality, persuasive ability, or both; and competence as either very important or important. In addition, in discussion after completion of the questionnaire, respondents stated that all three factors should be used, where possible, to influence the behavior of team members. In the Hodgetts

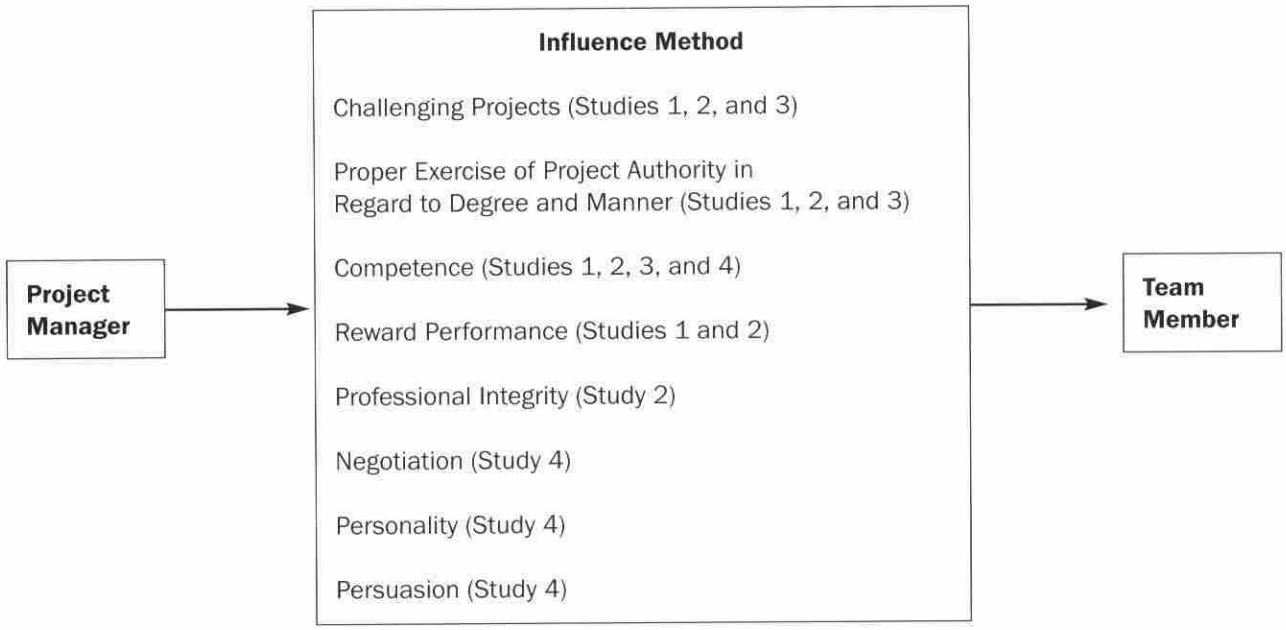

Figure 1. Influence Model for Project Managers

study some respondents, albeit small as a percentage, reported that these techniques were "not important."

Table 6 shows that the major difference between aerospace and nonaerospace respondents is in the area of negotiation where a much lower percentage of aerospace respondents (44% vs. 63%) indicated that negotiation was "very important." This finding is in agreement with the finding of the Hodgetts study, in which the percentage of aerospace respondents who thought negotiation was "very important" was much lower than respondents from construction and other industries. When the aerospace respondents in the present study were asked to state possible reasons for this difference, frequent responses were: (1) "Since our customers are government agencies in the military sector, there are fewer things where we have room to negotiate;" and (2) "In our environment, company policy is designed to reinforce our project authority." However, there was a considerable difference between Hodgetts and this study in terms of the percentage of aerospace respondents who thought negotiation was "very important" (26% for Hodgetts and 44% here).

While negotiation was not considered as important for aerospace respondents, both groups (aerospace and nonaerospace) indicated that personality/persuasive ability and competence were "very important." These results are higher than the Hodgetts study, in which smaller percentages of the sample considered personality/persuasive ability and competence to be "very important."

Table 6 shows that a much higher percentage of the participants in the nonaerospace business services and nonaerospace finance groups considered negotiation "very important." This finding is reasonable because the persons in these two groups worked for companies that provide services to other companies. These type companies are expected to have a culture that places much value to negotiation as a method to influence the behavior of others.

Table 6 shows that the highest percentage of participants that indicated that competence was "very important" were the persons working in nonaerospace business services. This finding is as expected because the persons in this group were highly educated and were working in high technology areas (systems design, systems development, and programming, etc.). As such, they are expected to value competence highly.

Synthesis, Conclusion, and Implications

What are we to make of these various findings, especially in terms of understanding how project leaders can most effectively manage their projects? We created a more complete picture of project management by looking at both the perceptions of project team members and project leaders.

Project leaders can use many methods to overcome the authority gap. Managers or leaders would be well served understanding what team members consider to be the most important methods of influence. Building on the work by T&G, the studies reported here suggest that creating professionally challenging projects is the single most important factor to team members. These results further support models of motivation that emphasize creating meaningful and challenging work, even more than coercive power and control over position and compensation as methods of influence.

Results of these studies also show that project leaders should understand the importance of three other factors, that

is, their expertise, professional integrity, and the exercise of their project authority (degree and manner). Team members need to be challenged, they respect leaders who know how to exercise their authority, and they need to believe in their leaders, both in terms of the leaders' competence and ethical character. The latter factor (professional integrity) was discovered as an important factor in this research and extends previous research by identifying a factor that is roughly as important as expertise and authority of the leaders. Among these factors expertise and professional integrity of the team leaders were most highly correlated with project managers' effectiveness. These studies also revealed that the issue of the project manager's "formal" authority should be distinguished in terms of manner and degree since it has different meanings in the minds of project team members.

From the project manager's perspective, important factors in overcoming the authority gap included persuasive ability, negotiation, and management competence. Fortunately, project leaders have much control over all of these factors, whether the perceptions of team members or team leaders. They can affect challenge by adding challenging components to project objectives, properly distributing work assignments, or both. They can improve their skills in the proper use of project authority, negotiation, and persuasion through education and observation of project leaders who are very good in these areas, and the application of what they learned in the management of their own projects. They can learn, through study and observation, the characteristics of project leaders who have referent (personality) power and try to acquire them. They can become more competent through study, observation, and seeking and securing the leadership of more complex, challenging, and growth projects. Finally, in terms of professional integrity, they can strive to be consistent, fair, honest, trustworthy, and generally leaders that all team members can count on during the project.

The authors' research suggests the model shown in Figure 1 that specifies the most important methods that can be used by project managers to influence the team members' behavior.

A number of the influence methods presented in Figure 1 are the same as some of the (1) "core job characteristics" and the "factors that are most critical to the effectiveness of self-managing work groups" identified by Hackman and Oldham (1980); and (2) nine categories of "influence tactics" developed by Yukl and Tracey (1992) and discussed further by Rivard, Aubin, Raymond, and Bergeron (1998).

It is the authors' belief that, at this time, a reasonable body of knowledge has been developed in the area of influence methods of project managers. What is needed now, is the development of a validated model pertaining to the relationship between influence methods and project success.

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Appendix 1. Influence Methods of Project Managers (indicates the comparable items in the T&G study)

1. *Project authority.* I feel he/she has formal project authority; that is, the right to suggest what needs to be done and when it needs to be done. (I feel he has the formal authority.)
2. *Salary.* I feel he/she can indirectly influence, by talking to my boss, my salary. (I feel he can influence my salary.)
3. *Promotion.* I feel he/she can indirectly influence, by talking to my boss, my promotion. (I feel he can influence my promotion.)
4. *Similar future work.* I feel he/she can indirectly influence, by talking to my boss, future work assignments. (I feel he can influence future work assignments.)
5. *Coercion.* I feel he/she can apply pressure or penalize me in some way. (I feel he can apply pressure or penalize me in some way.)
6. *Project management expertise.* I respect him/her and place confidence in his/her special knowledge and advice. (I respect him and place confidence in his special knowledge and advice.)
7. *Friendship.* He/she has established a personal friendship with me. (He has established a personal friendship with me.)
8. *Work challenge.* I feel the things he/she asks me to do are professionally challenging. (I feel the things he asks me to do are professionally challenging.)
9. *Professional integrity.* I feel that he/she has professional integrity.

Appendix 2. Survey Questions for Study 3

1. Have you ever supported or are now supporting one or more projects led by a person (matrix manager) who was not/is not your direct supervisor? _____ yes _____no

If your answer to this question was **no**, stop at this point and return the questionnaire to the seminar leader.

If your answer was **yes**, complete the rest of the questionnaire and return it to the seminar leader. In answering these questions, please consider only one of the matrix managers whose project you have supported/are now supporting.

Please rate on a scale of 1 to 10 the following statements regarding the specific matrix manager and project you selected.

2. The project was/is very challenging (10 = very challenging; 1 = child's play) _____

3. The knowledge and advice of the project manager was/is (10 = outstanding; 1 = unacceptable) _____

4. The professional integrity of the project manager was/is (10 = very high; 1 = unacceptable) _____

5. The degree to which the project manager exercised his/her authority was/is (10 = very high; 1 = very low) **NOTE: A project manager's authority is the right to suggest what needs to be done and when it needs to be done.**

6. The project manager exercised his/her authority in the following manner (10 = very pleasant; 5 = neither pleasant or unpleasant; 1 = obnoxious) _____

7. The effectiveness of the project manager in carrying out past and present project assignments was/is (10 = very effective; 1 = ineffective) _____

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