Impact of Perceived Leadership Styles on Work Outcomes: Case of Building Professionals

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Abstract: The purpose of this study is to empirically evaluate the transformational and transactional leadership styles among building professionals in the construction industry. This is part of a large-scale research project undertaken by the writers. Bass's transformational leadership theory reported in 1985 was employed and tested in a sample of 510 professional employees from a cross section of qualified building professionals selected from four countries. The main objectives of the study are (1) to examine the extent of leaders who are perceived to use transformational and transactional leadership styles; (2) to identify which of the two leadership styles is best able to predict outcomes of "leader effectiveness," "extra effort by employees," and "employees" satisfaction with the leaders; and (3) to offer insight into the management theory for building professionals in business organizations. Results of the study suggest that all five of the transformational factors and three of the transactional factors are significantly correlated with leadership outcomes of leader effectiveness, extra effort by employees, and employees satisfaction. The results further supported that transformational leadership could augment transactional leadership in producing greater amounts of performance and satisfaction.

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Introduction

Since the age of the industrial revolution, the role of professional employees has taken on tremendous importance. Society today has become very dependent on specialized expertise and knowledge, hence the increasing numbers of professionals and professional associations. As business organizations and government administrations become more complex, they need to employ more professionals on whose services they now depend (Lynn 1963; Von Glinow 1988). This proliferation of professionals has led to increased specialization and the emergence of a variety of new disciplines, which have been added to the traditional professional structure in society (Chan et al. 2000). Durkheim (1952) suggests that specialization has allowed our economic sectors to flourish with minimal conflict as new groups of occupations emerge to control the markets with specialized knowledge and skills (Presthus 1978). Evers and Silcock (1977, p. 14) express that "… If then professionals are, in evolutionary terms, the most developed species, if they are the most modernized of men, the latest model in modern society, they should also be the spearhead of development, agents of change (social political and cultural), innovators and active modernizers." Goode (1960, p. 902) also notes that a developing "industrializing society is a professionalizing society." In this regard, professionals are regarded as the major agent of social change and modernization; their role is indispensable and imperative to the very functioning of society.

In the construction industry, the building profession has played an indispensable role that determines the performance of the industry. One of the most important research areas receiving relatively little attention in the construction industry is leadership. Leadership is often considered as a social exchange process in leader–follower relation. Leadership, further intricated with issues of social and cultural differences, has been found to impose significant impact on the performance of construction projects and is pivotal in determining project success (Diekmann and Thrush 1986; Rowlinson unpublished thesis, 1988; Djebarni unpublished thesis, 1993; Chan and Tse 2003). Remarkably, in comparison to other fields of research, studies that have been undertaken on the subject of leadership in relation to professional practice are very limited in the construction industry. In view of this, Grant (1984); and Djebarni (unpublished thesis, 1993) expressed their concerns on the underresearch of leadership in the construction industry. Bresnen et al. (1986) remarked that leadership studies have rarely focused upon the role of site managers as leaders of their team and the range of managerial styles adopted on site.

At a theoretical level, a review of literature on leadership studies in the construction industry revealed that least preferred coworker (LPC) measure of Fiedler's (1967) contingency model of leadership was the widely adopted model (Bresnen et al. 1986, 1987; Djebarni, unpublished thesis, 1993; Rowlinson et al. 1993). Very often this may be attributed to the concentrated efforts in exploring ways for enhancing performance at project and organizational levels in the field. Business organizations in the construction industry, similar to other industries, have been facing immense challenges in today's rapidly changing environment. Such pressures have urged leaders to become more responsive and flexible, to proactively adapt and keep pace with the changes. Bass

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and Avolio (1990) were of the view that this situation would provide a context more readily to the emergence of transformational leadership. Nevertheless, rarely has a model of Bass's transformational and transactional leadership been advanced in the built environment. Bass's transformational leadership theory was built on the previous leadership models and entailed a broader range of leadership styles. Since then, many studies have been employing this theory to study the topic of leadership in organizations. In essence, the theory is concerned with the aspiration of leaders and followers in that followers recognize the needs and values of their followers and also are able to envisage and articulate strategies and goals that will motivate followers to exert their collective efforts beyond their original expectation. Therefore it is suggested that transformational leadership has the potential to be instructive to the construction industry.

Transformational Leadership Theory

In the past decades, approaches of leadership theories have been flourishing and numerous theories emerged. However, when most of these old leadership approaches were tested they led to unsatisfactory results in theoretical and practical application. Until the late 20th century, much attention was focused on examining the approaches of leaders who have successfully transformed organizations of different settings. The stream of this research was built upon the theoretical model of transformational leadership put forward by Burns (1978) and further advanced by Bass (1985). The prominent reasons in evidence are attributed to considerably growing pressures such as increasing sophistication of technology, growing client expectations, and cruel competition among industry players. These pressures have pushed various reforms on organizations, especially leaders. Cascio (1995) suggested that transformational leadership is a timely kit necessary to cope with these challenges. Bass's transformational leadership theory, comprising transactional and transformational leadership styles, described the leader as one who helps to develop and maintain a sense of commitment, and raises aspirations and motivation among colleagues and followers.

Transformational leadership "occurs when one or more persons engage with others in such a way that leaders and followers raise one another to higher levels of motivation and morality" (Burns 1978, p. 20). Burns considered that transformational leaders could raise the followers from a lower to a higher level of needs in accordance with Maslow's hierarchy of needs (Maslow 1954). They also recognize the needs of followers and seek to satisfy their higher needs and engage the full person of the followers (Avolio and Gibbon 1988; Tichy and Devanna 1990). More often they serve as a coach, mentor, and teacher to gain a sense of commitment and dedication from their followers (Keller 1992). Transformational leaders were characterized by (1) raising the level of awareness of followers about the importance of achieving valued outcomes, a vision, and the required strategy; (2) getting followers to transcend their own self-interest for the sake of the team, organization, or larger collectivity, and (3) expanding followers' portfolio of needs by raising their awareness to improve themselves and what they are attempting to accomplish (Burns 1978; Bass 1985).

Transactional leadership is simply contingent reinforcement (Bass 1985). Transactional leaders link with their followers merely in an exchange process. The leaders set out a list of performance and achievement guidelines for followers against which rewards in terms of money, praise, and promotion will be given in return. A transactional leader was characterized by Burns (1978) and Bass (1985) as one who (1) recognizes what it is one wants to get from his/her work and tries to see that one gets what his/her wants if performance warrants it; (2) exchanges rewards and promises of reward for effort; and (3) is responsive to one's immediate self-interests if they can be met by getting the work done.

According to Bass's theory (1985), transformational leadership is important in that it arouses transcendental interests in followers and elevates their need and aspiration levels. Eventually, this would produce greater employee satisfaction and effectiveness. Transformational leadership theory was extensively researched, tested, validated, and applied in a wide range of organizational settings, organizational levels, cultures, and countries (Al-Anazi, unpublished thesis, 1993; Bass 1997). The theory was often referred to what Avolio and Bass (1991) called "a full range of leadership development model," which far outweighs the previous leadership models that merely captured and focused on the core of transactional leadership in general.

Most of the empirical research on Bass's theory has made use of an instrument developed by Bass (1985) called the multifactor leadership questionnaire (MLQ). The questionnaire measures various aspects of transformational and transactional leadership and rated outcomes in an organizational environment. The instrument was widely used and empirically supported in terms of its validity and reliability through a great deal of vigorous theoretical and practical research studies (Den Hartog et al. 1997; Avolio et al. 1999; Tejeda et al. 2001). Of particular importance was Lowe et al.'s study (1996), which offered the most comprehensive review of the MLQ to date by use of meta-analysis. Their efforts focused on analyzing numerous studies from a variety of organizational settings, organizational levels, and cultures. The results supported that the MLQ was a valid and reliable instrument though some note of criticisms existed (Carless 1998; Yulk 1999).

The original factors of the transformational and transactional leadership model conceptualized by Bass (1985) comprised six leadership factors—charisma, inspirational motivation, intellectual stimulation, individualized consideration, contingent reward, management-by-exception, and laissez-faire. Scales measuring separate aspects of transformational and transactional leadership are based on factor analysis of the former-version questionnaire and subsequent modification. Since its conceptualization, the model has been subject to major revision (Bass and Avolio 1993, 1994) changing from a six-factor to a nine-factor model with the following modification: Charisma was further subdivided into idealized influence (attributed) and idealized influence (behavior) while management-by-exception into management-by-exception (active) and management-by-exception (passive). The factors of transformational, transactional, and nonleadership are described as follows.

Transformational Leadership Factors

Factor 1 and 2: Idealized Influence (Charisma—Attributes and Behaviors)

Bass (1985) regarded this charismatic component as idealized influence. Idealized influence is generally defined with respect to followers' reactions to the leader as well as to the leader's behavior. Leaders who display idealized influence represent the highest level of transformational leadership in that their followers have trust and confidence in the leaders (Bass and Avolio 1997). Leaders with these attributes are highly admired, respected, trusted, and have a high level of self-confidence, self-esteem, and self-

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determination. They are usually regarded as role models and demonstrate high standards of ethical and moral conduct.

Factor 3: Inspirational Motivation

Inspirational motivation described the ability of leaders who can motivate and inspire followers and colleagues by building confidence, filling and arousing enthusiasm and spirit in the group. Through the inspirational process, followers are motivated to become more committed to the goals and shared visions in the future growth of organizations. This type of leader provides symbols, metaphors, and simplified emotional appeals to increase awareness and understanding of mutually desired goals (Bass and Avolio 1997).

Factor 4: Intellectual Stimulation

Bass (1985, p. 99) describes intellectual stimulation as "the arousal and change in followers of problem awareness and problem solving, of thought and imagination, and of beliefs and values, rather than arousal and change of immediate action." Intellectual stimulation is often employed to encourage and stimulate followers to think about old problems in new ways and to pay extra effort to their work. As a result, the followers can develop themselves with capabilities of exploring, analyzing, and solving problems with a more independent thought in order to cope with the rapidly changing organizational environments.

Factor 5: Individualized Consideration

By acting as a coach or mentor, leaders pay particular attention on the individual followers″ needs for personal growth, advancement, and achievement in organizations. Each follower was taken care of individually and uniquely. This two-way exchange process highlights the mutual trust, sharing, and concerns between leaders and followers. Bass (1985) found that a positive impact of individualized consideration was found on followers″ satisfaction with the leaders, as well as overall productivity.

Transactional Leadership Factors

Factor 6: Contingent Reward

Contingent reward may be considered as one of the most direct ways for followers to work harder in accordance with the mutually agreed performance level. Bass (1985) suggested that transactional leaders might utilize contingent rewards to remunerate followers in return for their services and work done. The remuneration may be taken in the form of awards in recognition of achievements, recommendations for increase in pay and promotion, or commendation for outstanding efforts.

Factor 7 and 8: Management-by-Exception (Active and Passive)

A transactional leader who utilizes management-by-exception can be described as one who intervenes only when the work done or performance level is below the agreed or expected standard. The leader will only take corrective actions when things go wrong. According to Bass (1990), management-by-exception can be active or passive in nature. Some leaders constantly monitor followers to avoid mistakes and actively take corrective actions on committed errors and deviances. This type of leader is considered to be exercising active management-by-exception. While for passive management-by-exception the leader does not take any action until obvious deviances and mistakes occur, which is then followed by corrective action.

Nonleadership Factor

Factor 9: Laissez-faire

This is a nonleadership factor as mentioned by Bass and Avolio (1990). They suggested that followers and colleagues would perceive a sense of avoiding responsibility and absence of leadership from laissez-faire leaders. Leaders often keep themselves from making decisions, giving feedback, rewards, and participation with followers for discussion.

Employee Work Outcomes

Transformational leadership raises the aspiration of followers and enhances their performance and effectiveness through the interaction of various transformational and transactional leadership factors. To measure the employee outcomes, Bass (1985) made use of three factors, namely, "extra effort" exerted by employees beyond original expectations, "leader effectiveness" perceived by employees and employees' "satisfaction with leaders." Extra effort reflects the extent employees are willing to exert their efforts more than they originally expected as a result of the leader's styles. Effectiveness reflects the perceived ratings of employees on how effective are their leaders contributing to organizational effectiveness and the group. Satisfaction with leader refers to the extent employees are satisfied with their leaders.

Research Methodology

Research Aims and Objectives

This paper presents the relevant part of a large-scale research project which investigates leadership styles and professional practice among building professionals in a cross-national setting. The primary purpose of this study is to empirically evaluate the transformational and transactional leadership styles amongst building professionals in the construction industry. The main objectives of the study are (1) to examine the extent leaders are perceived using transformational and transactional leadership styles; (2) to identify which of the two leadership styles is best able to predict outcomes of "leader effectiveness," "extra effort by employees," and "employees' satisfaction with the leaders;" and (3) to offer insight into the management theory for building professionals in business organizations.

Data Collection Design and Administration

A cross-sectional survey by means of an electronic questionnaire survey in a cross-national approach was adopted for data collection. With the advent of the Internet, electronic mail (e-mail) has become a popular survey method. The advantages of e-mail as a pioneering instrument in data collection outweigh those of traditional mailed surveys. E-mail is much cheaper and offers significant time-saving in ease of administrative manipulation. More importantly, researchers can take prompt action to ask for respondents' clarification of responses after scrutinizing returned responses for any missing and abnormal data entries. The opinions of the respondents can also be solicited for future data analyses and conclusions to be drawn. Moreover, it is useful to efficiently gather a large amount of data amenable to analysis using a wide variety of statistical techniques. Bearing this in mind, an e-mail survey via the Internet was therefore adopted.

With a list of e-mail addresses of the target respondents on

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Table 1. Profile of Target Populations of Building Professions by Geographic Locations and Professional Disciplines

	Target population of building professionals					
			Surveyor			
Country	Architect	Structural engineer	Building	Quantity	General practice	Population size
Australia	5,100	1,628	2,000	1,483	5,034	15,245
Hong Kong (China)	1,782	1,785	623	1,324	1,301	6,815
Singapore	833	123	—	408	474	1,838
United Kingdom	18,305	13,367	8,566	19,846	4,881	64,955
Total	26,020	16,903	11,189	23,061	11,690	88,853

Note: As the number of qualified building surveyors in Singapore is very small and inaccessible, no survey was done for this discipline. The above membership profile of qualified members was updated as of December 31, 2002.

hand, distribution of the survey was directed to the potential respondents in person. This can definitely eliminate and minimize the chance of being answered by unknown persons. The e-mail survey was attached with a cover letter (in Microsoft *Word* format) describing the intent, background, and instructions of the survey and a questionnaire (in Microsoft *Excel* format). Respondents could then answer the questionnaires and return the survey via e-mail. The returned raw data were entered, coded, and analyzed by use of the well-known statistical software, *SPSS Version 10.0* (Statistical Packages for Social Sciences).

Questionnaire Design

The original questionnaire as appeared in the research project was divided into three parts. The second part was a multifactor leadership questionnaire (Form-5X)(Rater Form) and the third part was concerned with the demographic characteristics of the respondents. The questionnaire was created in *Excel* format. Each answer of the question item was designed in checkboxes so that respondents could indicate their responses by ticking-off the desired answers.

Sampling Design

The questionnaires were distributed via e-mails to a cross section of 7,200 qualified building professionals including architects, structural engineers, and surveyors (Building, Quantity and General Practice Surveying Division) throughout Australia, Hong Kong (China), Singapore, and the United Kingdom. This cross-sectional sample was generated randomly from the membership directories of the respective local professional institutes contained in their Internet websites or published in printed format. As suggested by Hantrais and Mangen (1996), the use of cross-national approach in data collection can lead to fresh, exciting insights and a deeper understanding of the issues in question. It also enables the results to have greater generalizability to other populations and enrich the mixture of participants from different cultural backgrounds.

The stratified systematic random sampling method was adopted for selection of the research subjects. The population of building professionals was divided into two subgroups or "strata:" geographical region and disciplines of building professionals. The unit of analysis in this study was building professionals who were responsible for the design, construction, and maintenance of buildings. The sampling frame was those disciplines of qualified building professionals of the local representative professional institutes in each selected country. Architects, structural engineers, and surveyors were selected as target respondents because of their traditionally well-established roles in the worldwide history of construction research and their being portrayed in literature as professionals (NEDO 1976; Thompson 1990; Huru 1992). They also represent principal subjects of some research studies (Simister, unpublished thesis, 1994; Loosemore and Tan 2000). Australia, Hong Kong (China), Singapore, and the United Kingdom were selected as the localities where research samples were drawn. These localities were selected with great care and the rationale behind their selection was based upon the following observations:

- They are current or former English-speaking commonwealth industrialized countries;
- The construction industries are well-established;
- They have similar statutory framework in the construction industry;
- The origins of building professionals can generally be traced back to the U.K.;
- They have similar local division/disciplines of building professionals;
- The building professionals enjoy a similar level of status in their own nation;
- They have their own professional institutes representing each discipline of building professionals and enforcing their own code of ethics/conduct; and
- They have a well-established professional registration system through self-regulation of professional associations/institutes endorsed by local government authorities.

Pilot Survey

After literature review, a pilot electronic survey was conducted in Hong Kong. The sample questionnaire was administered to potential respondents (qualified building professionals) via the Internet in order to ensure that the research instrument was interpretable and readable, and to discover if any difficulties would arise in the administration process with the samples. Comments were received and minor changes were made in the original instrument. A finalized electronic questionnaire survey (hereinafter known as "the survey") was conducted by sending out 7,200 surveys to target building professionals, representing 8.1% of a cross section of all target building professionals (total population was 88,853). The profile of target respondents is depicted in Table 1.

Measurement of Leadership Styles

Leadership styles of leaders as perceived by their employees can be assessed through the use of the multifactor leadership questionnaire (MLQ) in seven areas: idealized influence (charisma),

Table 2. Means, Standard Deviations, and Reliabilities of the MLQ Scales (N=510)

Variables	Means	Minimum	Maximum	Standard deviation	Alpha
Transformational leader Behaviors					
(1) Idealized attributes	2.20	0	4	0.87	0.79
(2) Idealized behaviors	2.15	0	4	0.86	0.79
(3) Inspirational motivation	2.33	0	4	0.87	0.83
(4) Intellectual stimulation	2.16	0	4	0.80	0.77
(5) Individualized consideration	2.03	0	4	0.86	0.76
Transactional leader behaviors					
(6) Contingent reward	2.14	0	4	0.85	0.76
(7) Management-by-exception (active)	1.77	0	4	0.77	0.69
(8) Management-by-exception (passive)	1.40	0	4	0.82	0.71
(9) Laissez-faire	1.16	0	4	0.86	0.77
Outcomes variables					
(10) Extra effort	2.12	0	4	0.94	0.81
(11) Leader effectiveness	2.25	0	4	0.93	0.87
(12) Satisfaction with leaders	2.25	0	4	0.99	0.82

inspirational motivation, intellectual stimulation, individualized consideration, contingent reward, management-by-exception, and laissez-faire. The version of the multifactor leadership questionnaire to be used in this study is the MLQ (5X) (Revised) (Rater Form). A person who scores high on individualized consideration and motivation factors is most indicative of strong transformational leadership. Cronbach's Alpha reliability coefficient testing was then applied to evaluate the internal consistency reliability of this MLQ scale.

Target building professionals were asked to rate how frequently their leaders, who are in the same profession as the respondents themselves, engage in specific behaviors. Each behavior is rated on a five-point scale ranging from "not at all" (0) to "frequently, if not always" (4). The scores for each leadership factor in the MLQ were calculated by averaging item scores. Means for each factor were at the midpoint (2.0 on a 0–4 scale) with standard deviations near 1.0.

Measurement of Work Outcomes

Transformational leadership raises the aspiration of employees and enhances their performance and effectiveness through the interaction of various transformational and transactional leadership factors. As mentioned above, employee work outcomes were measured by three factors, namely, extra effort exerted by employees beyond original expectations, leader effectiveness perceived by employees, and employees' satisfaction with leaders. The scores for each outcome factor in the MLQ were also calculated by averaging item scores. Means for each of the factors were at the midpoint (2.0 on a 0–4 scale) with standard deviations near 1.0.

Research Findings

Means, standard deviations, and Cronbach's Alpha reliabilities of all variables were calculated. Pearson product-moment correlation analysis was performed to evaluate relationships between the variables in the study. A series of hierarchical regression analysis was conducted to examine the effects of leadership behaviors on employee work outcomes.

Background of Respondents

The questionnaires were distributed via e-mail to 7,200 qualified building professionals including architects, structural engineers, and surveyors throughout Australia, Hong Kong (China), Singapore, and the United Kingdom. Of the 605 questionnaires that were returned only 510 were usable for a response rate of 10.6%. In fact, a number of factors did impede the responses rates; a majority of the respondents in the unusable responses were self-employed or retired (who are life fellow members), and some respondents' leaders were of a different profession from them, for example, a building surveyor with an architect as a leader.

Of those that responded 84.1% were male and 15.9% were female. The disciplines of building professionals were fairly evenly distributed, of which architects accounted for 30.8%, structural engineers for 33.9%, and surveyors for 35.3% (15.7% were building surveyors, 9.6% quantity surveyors, and 10% general practice surveyors). The age range was from 20 to 60 years and above. More than half (52.7%) were from 40 to 60 and above. About 90% of the respondents obtained a Bachelor's degree or above. More than 65% of respondents had more than 10 years of professional experience after qualification. A majority of them ($>$90%) held middle to top management positions in their serving organizations. It was noted that well over half (61.4%) of the respondents had more than 3 years of working experience with the leaders whom they described in the questionnaires.

Preliminary Analysis for the MLQ Scales

Table 2 reported the means, standard deviations, and internal consistencies (coefficient alpha) for the MLQ scales. Reliability (coefficient alpha) for each of the variables was computed. Reliabilities for each factor scales, ranging from 0.69 to 0.87, were generally above the acceptable minimum of 0.70 suggested by Kline (1986), with the exception of management-by-exception (active) subscale.

As can be seen in Table 2 inspirational motivation was the prominent leadership style of building professional leaders identified in the current study, followed by idealized attributes, intellectual stimulation, idealized behaviors, and contingent reward, while individualized consideration of transformational leadership recorded the lowest scores.

Table 3. Pearson Product-Moment Correlations between Leadership Behaviors and Outcome Variables ($N=510$)

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Transformational leader behaviors												
(1) Idealized attributes	—	0.75	0.75	0.73	0.79	0.77	0.20	−0.36	−0.46	0.77	0.78	0.80
(2) Idealized behaviors	—	—	0.76	0.70	0.69	0.72	0.25	−0.30	−0.30	0.69	0.66	0.64
(3) Inspirational motivation	—	—	—	0.63	0.66	0.70	0.17	−0.31	−0.35	0.68	0.66	0.65
(4) Intellectual stimulation	—	—	—	—	0.73	0.75	0.31	−0.35	−0.44	0.70	0.70	0.69
(5) Individualized consideration	—	—	—	—	—	0.77	0.19	−0.29	−0.39	0.70	0.70	0.70
Transactional leader behaviors												
(6) Contingent reward	—	—	—	—	—	—	0.26	−0.33	−0.42	0.71	0.76	0.76
(7) Management-by-exception (active)	—	—	—	—	—	—	—	0.05[a]	−0.02[a]	0.24	0.23	0.16
(8) Management-by-exception (passive)	—	—	—	—	—	—	—	—	0.66	−0.29	−0.42	−0.42
(9) Laissez-faire	—	—	—	—	—	—	—	—	—	−0.38	−0.54	−0.53
Criterion variables												
(10) Extra effort	—	—	—	—	—	—	—	—	—	—	0.78	0.80
(11) Leader effectiveness	—	—	—	—	—	—	—	—	—	—	—	0.86
(12) Satisfaction with leaders	—	—	—	—	—	—	—	—	—	—	—	—

Note: $p<0.01$.

[a]$p<0.05$.

The findings of leadership outcomes reported in this study also revealed that highly positive outcomes in extra effort, leader effectiveness, and satisfaction reflected highly favorable transformational ratings.

Intercorrelations between Perceived Leadership Styles and Rated Outcome Variables

Table 3 reported on the Pearson product-moment correlations between perceived leadership styles and rated outcome variables. It was revealed from the results that idealized attributes, idealized behaviors, inspirational motivation, intellectual stimulation, individualized consideration, and contingent reward were significantly correlated ($p<0.01$) to perceived leader effectiveness, satisfaction with leaders, and extra effort by employees. Management-by-exception (passive) and laissez-faire were significantly related ($p<0.01$) to rated outcomes in a negative direction. This result showed similar patterns of findings in 16 numerous studies as reported by Bass and Avolio (1990) and was also generally consistent with Bass and Avolio's (1997) results except that management-by-exception (active) showed a moderate positive relationship with rated outcomes. The correlation matrix reported in Table 3 also indicated the high correlation between transformational factors and contingent reward of transactional factors. Bass and Avolio (2000) suggested that the evidence of such a relationship was expected because transactional and transformational leadership could both represent active and positive forms of leadership styles. They could also exhibit in the same individual and build trust and dependability among followers.

Independent Effects of Leadership Styles on Professional Employee Work Outcomes

Referring to Table 3, the Pearson product-moment correlation revealed that many of the leader behaviors were significantly associated with one another. However, correlation can only simply tell the nature of the relationship between variables. It cannot fully explain the underlying relationships of variables without using the regression analysis method. With a view to determining their independent effects on employee work outcomes and avoiding the problem of multicolinearity among large numbers of predictor variables, a partial regression analysis was first conducted. In this analysis, the individual unique contribution of each predictor variable (i.e., leader behaviors) to each of the criterion variables (i.e., employee work outcomes) was examined while partialling out the effects of the other leader behaviors. Results in Table 4 indicated that the analyses provided similar findings to those reported in Table 4 in that all factors of transformational leadership (except idealized behaviors) and contingent reward and management-by-exception (active) were positively related to all facets of em-

Table 4. Partial Regression Coefficients of Leader Behaviors on Employee Work Outcomes

	Idealized attributes	Idealized behaviors	Inspirational motivation	Intellectual stimulation	Individualized consideration	Contingent reward	Management-by-exception		Laissez-faire
							Active	Passive	
Extra effort	0.35[c]	0.08	0.12[b]	0.14[b]	0.10[a]	0.10[a]	0.04	0.02	−0.03
Leader effectiveness	0.28[c]	−0.01	0.08[a]	0.05	0.17[c]	0.22[c]	0.06[a]	−0.06	−0.16[c]
Satisfaction with leaders	0.40[c]	−0.04	0.04	0.07	0.13[b]	0.25[c]	−0.02	−0.05	−0.14[c]

Note: All regression coefficients as shown in Table 4 were standard regression coefficients.

[a]$p<0.05$.

[b]$p<0.01$.

[c]$p<0.001$.

Table 5. Hierarchical Regression Analysis for Employee Outcome Variables ($N=510$)

	Employee outcome variables		
	Extra effort	Leader effectiveness	Satisfaction with leaders
Scenario 1			
Step 1: Transactional factors			
R^2	0.52[a]	0.64[a]	0.63[a]
F-ratio	135.19	221.24	212.95
Step 2: Transformational factors			
R^2	0.66[a]	0.72[a]	0.72[a]
Change in R^2	0.14	0.08	0.09
F-ratio	42.21	28.92	32.09
Scenario 2			
Step 1: Transformational factors (R^2)	0.64[a]	0.65[a]	0.64[a]
Step 2: Transactional factors (R^2)	0.64[n.s.]	0.65[n.s.]	0.64[n.s.]
Change in R^2	0	0	0

Note: n.s.=not significant.

[a]$p<0.001$.

ployee work outcomes, while management-by-exception (passive) and laissez-faire behaviors were generally in negative correlation.

Augmentation Effect of Transformational Leadership

Bass (1985) considered that transactional and transformational leadership are more likely to be displayed by the same individuals in varied amounts and intensities. He also suggested that transformational leadership and transactional leadership are complementary to each other. Transformational leadership can augment transactional leadership to produce greater synergistic effects on the employees' work outcomes than either transformational or transactional leadership in isolation. However, transactional leadership cannot augment transformational leadership to the same extent.

To assess the augmentation effect, a hierarchical regression analysis recommended by Waldman et al. (1987); and Hater and Bass (1988) was adopted. Transactional leadership factors were first entered into the regression model to determine if transformational leadership significantly augmented the power of transactional leadership alone in predicting extra effort by employees, perceived leader effectiveness, and satisfaction with leaders. As can be seen in Table 5, there was a significant change in the R^2 after the addition of transformational leadership factors. The R^2 for transactional leadership factors is 0.52 ($p<0.001$) for extra effort, 0.64 ($p<0.001$) for leader effectiveness, and 0.63 ($p<0.001$) for satisfaction with leader. Of particular note was when transformational leadership factors were added in Scenario 1, the R^2 was significantly increased to 0.66 ($p<0.001$) for extra effort, 0.72 ($p<0.001$) for leader effectiveness, and 0.72 ($p<0.001$) for satisfaction with leader. From these results, it was evident that transformational leadership can augment transactional leadership to produce a greater effect on the performance and satisfaction of employees, however, transactional leadership does not augment transformational leadership as shown in Scenario 2.

Observations

The primary purpose of this study was to empirically test the applicability of Bass's transformational leadership theory in a cross-national sample of building professionals in the construction industry. The current findings made a substantial contribution to the research evidence that transformational leadership and transactional leadership can be found in the construction fields. The construction industry is characterized by its vibrant and rapidly changing environment. Meeting stringent requirements of time, cost, quality, and safety has always been the norm of professional personnel at all levels of organizations today. The nature of their jobs is characterized by continual changes in working environments, making them more flexible, responsive, and adaptive to solving problems with new ways of thinking. Tichy and Devanna (1990) considered that transformational leadership should be able to work as a guide and framework for leadership throughout the organization in times of change. In that sense, building professionals are assuming the key role of initiating transformation in organizations to cope with challenges. Organizational cultures should also be cultivated in an intellectually supported environment, which is conductive to the emergence and subsequent growth of transformational leadership. As a result employees' performance and satisfaction would be enhanced.

Managerial Implications for Building Professionals

This study set out to examine the leadership styles of building professional leaders perceived by their professional employees. Bass and Avolio (1990) suggested that transformational leaders could motivate and inspire employees to outperform beyond their original expectation and attain greater achievement. The findings revealed that all transformational factors and contingent reward of transactional factors were highly correlated with the rated outcomes. The well-perceived leadership styles of building professional leaders identified in this study were inspirational motivation, idealized attributes, intellectual stimulation, idealized behaviors, contingent reward, and individualized consideration. This study recommends that building professionals promote the use of transformational leadership in their interactions with employees in the workplace through the following:

- More inspirational motivation in the form of consistent encouragement and inspiration for creative thinking;
- More intellectual stimulation in the form of sharing and facilitating discussion; and
- More individualized consideration in the form of personal car-

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ing, coaching for individual needs, and offering more challenges and opportunities.

A more prominent fact based on the results revealed that more transformational leadership would result in greater employee performance and satisfaction than transactional leadership; transformational factors did play an instrumental role in many rated outcomes. Indeed, this has also been demonstrated in previous research findings (Bass and Avolio 1990, 1994; Avolio 1999). These results also suggests a note of implications on the training, selection, and recruitment of leaders. Assessment of transformational leadership characteristics can be incorporated into managerial assessment exercise and screening selection programs for recruitment of potential leaders. It has been evident that transformational leadership can also be taught (Barling et al. 1996; Kelloway et al. 2000). Objectives and curricula of leadership training workshops can therefore be more focused and pivotal at teaching the core of transformational factors.

Moreover, the correlational analysis generally showed that the leaders displayed both transformational and transactional leadership with the former one generally being exhibited to a greater extent. Results of hierarchical regression analysis further suggest that transformational leadership has a significant and substantial add-on effect on transactional leadership in the prediction of employees' rated outcomes of extra effort, perceived leader effectiveness, and satisfaction with the leaders in the sample of building professionals. This echoed and supported the augmentation effects of transformational leadership proposed by Bass (1985). The same results have also been confirmed in other numerous independent studies (Hater and Bass 1988; Waldman et al. 1990; Howell and Avolio 1993; Yammarino et al. 1993). This evidence further reinforced the importance of transformational leadership factors in training, selection, and recruitment process in business organizations.

Theoretical Implications for Transformational Leadership Model

From a theoretical standpoint, the findings of this study reinforced the conceptual model of transformational leadership theory proposed by Bass (1985) and suggested that transformational leadership did lead to higher levels of performance and satisfaction than transactional leadership. Most of the empirical research on Bass's transformational leadership has long been applied and widely researched in the business, educational, military, and industrial fields (Bass 1997), however, research that employed the theory in the construction industry is very limited. This study offered a piece of evidence that transformational and transactional leadership does exist in the construction industry and their coexistence was observed. The results of this study served to provide further support to the versatile application of Bass's transformational leadership theory in various industries. Furthermore, the results also endorsed the augmentation effects of transformational leadership on transactional leadership put forward by Bass (1985). They have also substantiated Bass's (1997) corollary that the process is not reversible: transactional leadership does not augment transformational leadership.

Limitations and Suggestions for Further Studies

The present study has certain limitations that are suggestive of future research directions. One of the important limitations is that the relationships among all variables may be somewhat inflated owing to a single-source bias. Bass and Avolio (1993) remarked that the correlations between transformational leadership factors and effectiveness and satisfaction measures typically range from 0.60 to 0.80, however, the values still may have been influenced by a single-source variance.

The use of a highly specific population such as building professionals in this study may have also reduced generalizability and external validity of the findings. This research only examined three main disciplines of building professionals pertaining to four countries. However, the underlying structure of the construction industry in these countries is similar to many other countries. It could in many ways give an indication and provide a reference to the construction industry in other commonwealth countries with a similar system such as in Canada, Malaysia, and New Zealand. Future efforts could employ additional disciplines of building professionals such as building services engineers who are also actively involved in the construction processes. More countries may also be included to see if the findings obtained are generalizable to the construction industry in other countries.

Furthermore, all targeted respondents in this study were limited to those building professionals who have electronic mail accounts, hence the results may be biased. To capture a broader and clearer picture of the leadership–employee relationship, future participants could be contacted by post. However, owing to the increasingly stringent controls on the confidentiality of personal data, the collection of qualified sample data is becoming more difficult. Future research may tend toward investigations at the company level using qualitative data collection methods such as focus group interviews in order to produce more interesting and rich data.

In addition, all respondents were qualified building professionals with a high level of educational attainment and professional qualification. Howell and Dorfman (1986) remarked that professionalism has been considered as an important moderator variable for leadership research and has important implications for managerial leadership of organizations. Professionalism may tend to reduce their need for dependence on task-related information and resist the effects of leadership from their leaders. It means that individuals who are incorporated with a higher level of professionalism and are internally motivated by their own values and ethics may to some extent diminish the possible effect of leadership on their work, i.e., they are not necessarily encouraged by the leader to do high-quality work. Therefore, in light of the important role of professionalism in leadership research, it would be worth exploring the potential effects of professionalism among professionals on the relationships between leadership styles and outcomes.

Conclusion

This study has contributed a number of important findings, which can be summarized as follows.

- Transformational and transactional leadership are exhibited in the same individual building professionals, but to different degrees and intensities. Building professionals use transformational leadership more frequently than transactional leadership in their work.
- Laissez-faire leadership style is seldom used by building professionals.
- Under transformational leadership, the most prominent behavior used is inspirational motivation, followed by idealized at-

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tributes, intellectual stimulation, idealized behaviors, and individualized consideration.
- Under transactional leadership, the most prominent behavior used is contingent reward, followed by management-by-exception (active), and management-by-exception (passive).
- Transformational leadership and transactional leadership are complementary to each other. Transformational leadership can augment transactional leadership to produce greater synergistic effects on the employees' work outcomes than either transformational or transactional leadership in isolation. However, transactional leadership cannot augment transformational leadership to the same extent.

The results of this study serve to enhance our understanding of the complexities involved in the relationships between leadership styles and employee work outcomes among building professionals in the construction industry. A review of literature revealed that rarely has Bass's transformational leadership theory been applied in the construction industry. The findings of this study will not only shed light on the future applicability of the transformational and transactional theories in the industry, but also suggest that the transformational leadership model be a "pro-development tool" in optimizing the relationship between leaders and followers both intrinsically and extrinsically. This study has established a sound foundation for further studies and has certainly aroused a profound interest in exploring the synergy of transformational and transactional leadership in organizational and project environments within the context of the construction industry.

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