

The effect of principal's leadership style on school environment and outcome

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ABSTRACT

The main objective of this study was to investigate the effect of principal's leadership style on school outcome. This study focused on the indirect relationship between the leadership style and the school environment. An additional objective was to investigate the impact of culture on leadership style as related to school environment and outcome. Data from the TIMSS 1995 on Kuwait and the USA were used in this empirical investigation. Descriptive statistics and an ANOVA were used in the statistical analysis.

Several conclusions were found in this study. The data analysis supported the hypothesis that the principal's leadership style was related to school outcomes. This relationship is found to be direct and indirect through the school environment. In the USA schools, the integrative principal leadership style is found to encourage and create a cooperative school environment for better school outcome than schools with authoritative principals. The principal's leadership style was found to be very different between Kuwait and USA school. Kuwait schools' principals are authoritative in their leadership style, while their USA counterparts tend to be integrative. Interestingly, although Kuwait school principals are authoritative in nature, data indicated that a cooperative school environment showed higher school outcomes. This suggests that the USA model is inapplicable in a culture similar to Kuwait. This study also concludes that there are no universal or appropriate leadership styles for all cultures.

Keywords: Principals' leadership style, School Outcome, TIMSS, Kuwait

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INTRODUCTION

Statement of Problem

Does a school's administration leadership style impact the outcome of schools and of the students' achievements? Specifically, this study investigates the principal's leadership style and its impact on shaping the schools' learning environments, hence the schools' outcomes. Furthermore, another dimension is added to the above investigated relationship with respect to the culture of each nation which could influence the leadership style of schools. Two different cultures were selected in this study, namely, Kuwait (a religious, conservative, Middle Eastern society) and the USA (a modern, secular, liberal, western society). Kuwait and the USA were selected in this study because of the growing trend in the Kuwaiti education system of adopting USA educational models, especially in private schools. Furthermore, the USA educational model, with all its challenges, is considered a worldwide role model that other nations could benefit from.

Research Questions

The general above problem statement led to the specific following research questions:

1. What types of school environments are created by the different leadership styles of principals?
2. Is there a significant relationship between the principal's leadership style and the outcomes of schools?
3. Do cultural characteristics influence the principal's leadership style and thus the school's learning environments and outcome? If so, how?

Theory

The theory behind this study is the interconnection between a school's administration (represented in the principal's leadership style) and school's outcomes seen through the school's environment. It has been well investigated that the environment of a school is one of the primary factors in the academic achievements of the students. Among several variables that shape a school's environment, the principal's leadership style is investigated in this study in an attempt to provide support to this relationship. Evidence should give insight on the nature of this relationship and how it could be used to improve the school's ultimate objective of graduating competent students with high academic achievements (school outcome).

Analytical Approach

The statistical/empirical approach for this study includes using descriptive statistics (central tendency and dispersion) as well as an analysis of variance (ANOVA) to test the hypotheses. The overall approach occurs in three major steps:

- Analysis of the USA data to investigate the first and second research questions.

- Analysis of the Kuwait data to investigate the first and second research questions.
- A comparison between the findings from the analyses of each country to study the cultural effects related to the third research questions.

Propositions and Hypotheses

Hypotheses development requires refining the constructs stated in the research questions (i.e. principal's leadership style, school environment and school outcome) to measurable indicators. These indicators are used as building blocks for the hypotheses. While the student's academic performance is a straight-forward indicator of school outcome, both the principal's leadership style and school's learning environment indicators may be relatively challenging. Table 1(Appendix) summarizes the investigated constructs and their corresponding indicators. These indicators were selected based on their suitability to measure the corresponding construct and are based on the questionnaire of the TIMSS data.

- The indicators in Table 1 will be used to test the following hypotheses:
1. Schools with an authoritative leadership style, as compared to other leadership styles, tend to have an environment in which teachers are less encouraged to cooperate and collaborate in sharing their instructional learning experiences and material.
 2. Principals characterized by an authoritative leadership style tend not to integrate the school's mission and vision into their school curriculum through involvement in curriculum development as compared to principals who demonstrate other leadership styles.
 3. Authoritative school administrations with a lower cooperative environment tend to produce schools with lower student academic achievement (school outcome) than other types of school administrations.
 4. Different cultures lead to different principal's leadership style and role expectation, both of which result in different school environments, thus different school outcomes.

Data

In this study, the TIMSS (The Third International Mathematics and Science Study) 1995 data was used to investigate the research questions. This data is available on-line to the public. The TIMSS data includes data gathered from Kuwait and the USA in 1995 for 4th, 8th, and 12th grades with respect to students, teachers and the school administration. In this study, the analysis is limited to 8th grade students' data related to students and schools (principals) for Kuwait and the USA. Following are the specific questions in the TIMSS questionnaire (i.e. the indicators of each construct).

TIMSS Questions

Principal Leadership Style

For the principals' leadership style construct, Question #11 of the TIMSS school background questionnaire is selected which reads as follows:

- 11) As principal of this school, about how many hours per month do you usually spend on each of the following activities:
 - a. Representing school in the community
 - b. Discussing educational objectives with teachers
 - c. Talking with parents
 - d. Counseling and disciplining of students

School Environment

To qualitatively measure the school environment, Question # 10 of the TIMSS school background questionnaire is selected. The question reads as follows:

- 10) Cooperation and Collaboration:
 - a. Does your school have an official policy related to promoting cooperation and collaboration among teachers? (Yes or No)
 - b. Are teachers in your school encouraged to share and discuss instructional ideas and material? (Yes or No)
 - c. Do teachers in your school meet regularly to discuss instructional goals and issues? (Yes or No)

School Outcome

The school outcome construct was assessed using two questions, namely, Question # 13 of the school background questionnaire and Question # 17 of the TIMSS student background questionnaire. The questions read, respectively, reads as follows:

- 13) How much influence principal/head of school have in determining the curriculum that is taught in your school?
 - a. None (1)
 - b. A little(2)
 - c. Some(3)
 - d. A lot(4)

- 17) How well do you usually do in mathematics and science at school?
 - a. I usually do well in mathematics (Strongly Agree-Agree-Disagree-Strongly Disagree)
 - b. I usually do well in science (Strongly Agree-Agree-Disagree-Strongly Disagree)

Data Type

Data type is divided into two categories, namely parametric (interval and ratio) and non-parametric (nominal and ordinal) (Kachigan, 1991). In this study, all the dependent variables (constructs) are non-parametric nominal (categorical) data. The independent variables of TIMSS Question 10, 13 and 17 (above) are parametric interval data. The independent variable of TIMSS Question 11 is the only parametric ratio data. While no statistical analysis could be done on the nominal (categorical) type of data, only limited statistical analyses can be conducted on interval data. In terms of descriptive statistics, the central tendency in interval data is best represented by median or mode. Analysis of variance and regression analysis cannot be conducted on interval data. The ratio data is the highest degree of data on which analysis of variance (ANOVA) and regression analysis can be carried out. In this study, since none of the dependent variables are parametric data, no hypothesis of association will be carried out. However, hypothesis of difference will be carried out only for TIMSS Question 11.

Following, a literature review is first presented, followed by USA schools data analysis data and discussion, then Kuwait data analysis will be presented and compared with USA data analysis followed by the discussion of culture impact on the investigated relationship. Various conclusions are drawn together with recommendations for future research.

LITERATURE REVIEW

The literature review section is divided into two main sections: general leadership styles and traits, and the principal's (as a leader) contribution to school effectiveness and outcomes through the school environment.

Leadership Style

Figure 1 (Appendix) is the managerial grid which is widely used to identify individual leadership styles in organizations to assist in organizational improvements (Bennett, 1996). This descriptive tool uses two factors to qualitatively identify the leadership style exhibited by leaders and managers: concern for people and concern of production. The leadership style can be classified based on its degree of concern for people versus concern for production. As illustrated in Figure 1, there are five leadership styles: impoverished, authority compliance, country club, team, and middle-of-the-road.

Among the five leadership styles, each one fits a certain type of organization. Leadership style depends on the purpose and mission of the organization. Although style "9,9" (see Figure 1, Appendix) may seem to be the preferred style, there is evidence that others styles may be preferred in specific types of organizations. For example, in "throwaway" organizations (temporary organizations established for a specific mission and then go out of business), the authority-compliance style (9,1) is preferred, since there is no need for building strong relationships with the people. Informal leadership tends to thrive best with organizations that consist mainly of volunteers and work to satisfy social and human needs; the "1,9" style, or "country club" leadership style. In schools, somewhere between style "5,5" and "9, 9", (i.e. grid "7,7"), a "middle-of-the-road" style

may be considered best due to its balanced perspective. Furthermore, in schools, the location on the horizontal and vertical axes of the leadership style grid may not be very different because the concern for production in schools is very much related to the concern for people; the production in the schools is the people.

Fundamentally, the role of the leaders fall into three categories: interpersonal, informational, and decisional. The interpersonal role is related to the human element of the organization. In the interpersonal role, the function of the leader includes motivating, directing, coaching and assessing performances (leading), liaison, and as a figurehead. In the informational role, the leader is a monitor, disseminator and spokesperson. In the decisional role, the leader is an entrepreneur, resource allocator, disturbance handler and negotiator (Bennett, 1996).

Principal, Environment, and School Effectiveness

Exploring the relationship between the leadership style of the principal and the effectiveness and outcomes of the school has practical and theoretical importance. The practical importance is represented in defining the principal's day-to-day role in the school. The theoretical importance is related to the role of the organizational and leadership theories in school effectiveness, which has been neglected in past research (Hallinger and Heck, 1996).

There are three major theoretical approaches used to study the relationship between the principal's leadership style and the school's effectiveness (Hallinger and Heck, 1998): the direct-effect model (Model A), the mediated effect model (Model B), and the reciprocal-effect model (Model C). The direct effect model shows how the leadership style of the principal directly affects the school's outcome. The mediated effects model is where the principal's leadership style influences some other variable(s), which affect the school's effectiveness. In the reciprocal-effect model, the leadership style of the principal affects the teacher, the teachers have an influence on the principal, and the cyclical nature of the influence affects the effectiveness of the school. When Model (A) and (B) are combined with the antecedent-effect model proposed by Pitner (1988), more complex models result, namely, the direct-effect with antecedent effect (Model A-1) and the mediated-effect with antecedent effect (Model B-1) (Hallinger and Heck, 1998).

Although the principal's leadership seems to be related to the effectiveness of the school, some specific studies have found otherwise. Miskel (1982), Rowan et al. (1982), and Van de Grift (1990) found that the relationship depends on the theoretical and empirical model. For example, when the principal's leadership style/school effectiveness relationship was found to be weak, Model A (bi-variant design with and without controls) becomes invalid. On the other hand, when Model B (stronger research design and sophisticated statistical analysis) was used, the relationship was found more frequent and appears to be significant. These studies suggested that this cause and effect relationship is subject to the conditions of the school.

In the studies which used robust models (i.e. B and B-1), the relationship between the style of the principal's leadership and their school's effectiveness shows an indirect relationship. These studies found that the principal's leadership affects the school's policies, which in turn enhances the school's effectiveness. School policies include

academic expectation, school mission, student learning opportunities, instructional organization, academic learning time and teacher practices. Among these variables, the school's goals and missions were the most frequent and the significant intermediate factor that linked the two constructs (i.e. principal leadership and school effectiveness) (Bewer, 1993; Bamburg and Andrews, 1990; Glasman and Fuller, 1992; Goldring and Pasternak, 1994; Hallinger et al., in press; Hallinger and Murphy, 1986, ; Heck et al., 1990; Leithwood, 1994; Silins, 1994).

Hallinger and Heck (1996) reassessed the principal's role in school effectiveness. They based their study on data gathered from 1980 to 1995. Their investigation was not only empirical, but also theoretical due to the complexity of the relationship that could not be easily understood if only studied empirically. In their research they focused on the concepts underlying different potential theories that would be adopted to study the relationships between principal's role and school effectiveness. The overall objective of their study was to come up with a research agenda for the next generation of this study in which defined directions were set. In their research, they emphasized the fact that administrative leadership was among the factors that made the greatest difference in student understanding and learning. However, the nature of this relationship remained open to debate and research (Hallinger and Heck, 1996).

Educational policy makers are also convinced that the principal is the key variable in a student's scholastic achievement (Murphy, 1990). Therefore, from 1975 to 1990, the policy from state-mandated evaluations of principals jumped from nine to 40 states showing the increased focus on principals as a major and important component in the student's learning and the school's effectiveness. Hallinger et al. (1990) and Heck et al. (1990) viewed the influence of the principal on student achievement as the leader's role in the environmental, personal and in-school relationship aspects, which eventually lead to stronger organizational outcome.

DATA ANALYSIS AND DISCUSSION (USA SCHOOLS)

Principal's Leadership Style

The principal's leadership style is indicated in this study by the level of verbal and written communication of principals; specifically, hours per week of communicating with community, teachers, parents and students. Three leadership styles were investigated: authoritative, integrative and mixed. The three styles were identified by a reasonable communication level criterion selected in this study.

Authoritative leadership style

This style is indicated by a low communication level. Principals using this style spend at most 33.3% of their time per week communicating with the students, teachers, parents and community. Out of the 183 USA schools investigated in the TIMSS data, 56 schools were found to have authoritative principals based on this criterion. Those principals exercised their decision and informative role more than their interpersonal role. Table 2 (Appendix) shows a summary of descriptive statistics of the communication level of the authoritative leadership style principals.

Integrative leadership style

This style is identified by a high communication level, both verbal and written. Principals who spend at least 66.6 % of their time per week in communicating with students, teachers, parents, and the community are characterized by an integrative leadership style. Only 12 of the 183 USA schools in the TIMSS data were found to have principals with an integrative leadership style. Those principles tended to exercise their interpersonal role more than their decision-making role in leading people and achieving organizational goals. Table 3 (Appendix) shows descriptive statistics of the data of the integrative leadership style.

Figure 2 (Appendix) is a comparison of the Whisker Box plots of the authoritative and integrative leadership style data. The Whisker Box plot is a visual tool that summarizes important descriptive statistics, namely, the median (solid line), the mean (dashed line), the Inter-quartile rang (IQR) or the data variability ($P_{75}-P_{25}$), and moderate and extreme outliers. While Figure 2 indicates a significant difference in the mean of communication hours per week of the two styles, it shows a very close IQR between the two leadership styles. The plot does not show any outliers in the data.

School Environment

In this study, the school environment is an uncontrolled variant. The school environment was indicated by the level of the cooperation and collaboration among the teachers in sharing and discussing instructional ideas, experiences and materials. Cooperation is believed to be an indicator of school environment because it reflects freedom, collectivism, comfort and trust in the school's environment. Low cooperation and collaboration (low school environment) reflects the low trust level among the teachers and their discomfort. Both categories of schools, the one with principals of an authoritative leadership style and the ones with principals of an integrative leadership style, were investigated for a cooperative environment.

From the category of schools with an authoritative principal leadership style, the data revealed that 50% of these schools have a policy to promote cooperation among teachers. The data of these schools show that 90% of the time the teachers actually meet to discuss and share instructional experiences. On the other hand, 66% of the schools that are run by an integrative principal have a policy to promote teacher cooperation. In addition, the data revealed that the teachers cooperate regularly and share their experiences and material 100% of the time. This data clearly indicates that cooperation and collaboration among teachers takes place more in schools run by integrative principals than schools run by authoritative principals. Furthermore, the data shows that not only do the integrative leadership style principals set the rules to make sure that cooperation exists, but they also make sure that the policy is implemented so that cooperation exists.

School Outcome

The school outcome is the dependent variable in this study. The focus of this study was to investigate the possible relationship between the school outcome and its

administration leadership style. The two indicators are used to measure the school outcome are the students' academic achievement and the principal's influence on the school's curriculum. The students' academic achievement is a direct measure of the school outcome, while the school curriculum is an indirect indicator.

Students' Academic Achievement

This indicator is a direct measure of the outcome of the school. The student background section of the TIMSS data is the source of the mathematics and science academic achievement of the students. Only the student's academic achievement data that correspond to those schools with an authoritative principal and schools with integrative principals are analyzed.

Figure 4 (Appendix) is a histogram that compares the academic achievement in science of the students from schools with integrative principals and school with authoritative principals. The histogram indicates that the mode of both data sets is the same (i.e. "Agree"). However, if the two modes are compared, the academic achievement mode of the students who come from schools with integrative principals exceeds the one of the students from the schools of authoritative principals.

A similar trend is found when the mathematics academic achievement is related to the two principal's leadership styles. Figure 5 (Appendix) illustrates that the mode of the data set of mathematics achievement from schools with the integrative leadership style exceeds the mode of the mathematics academic achievement from schools with an authoritative leadership style (see "Agree" and "Strongly Agree" responses).

Overall all, both science and mathematics students' academic achievement data show that schools with integrative principals tend to have better outcomes in term of mathematics and science achievement of the students. This cause and effect relationship could be direct (principal leadership style → academic achievement) or/and indirect (principal leadership style → school environment → academic achievement). Related to the direct relationship, one of the organizational elements that school principals affect is the people element, specifically, students. The principal's influence on students could be through motivation, modeling positive behaviors, recognition, and providing individualized support. This direct influence requires continued interaction and communication between the principal and the students. In the indirect relationship, the principal's effects on teachers may be related to an increase of high outcomes of schools. Heck et al. (1990) found that in high producing schools, the principal spends more time in the classroom than their counterparts in low producing schools. They supervise and support teachers as well as coordinate the school's instructional program.

Principal Curriculum Influence

In this study, the amount of influence the principal has on the school's curriculum is considered as an indirect measure of school outcome. The influence of the principal's curriculum is related to the curriculum alignment with the school's mission and vision. The principal's involvement in curriculum development is mainly related to framing, conveying and sustaining the educational goals to assure the focus of curriculum on the school's purpose and vision. In this view of the principal's curriculum influence, the

school outcome is perceived more broadly as achieving the school's overall goals, including the student's academic achievement. Hallinger (1996) found that establishing and maintaining a clear school vision was a key avenue of an increased school outcome. Furthermore, Goldring and Pastrnak (1994) found that curriculum linked to a vision established collectively by teachers, staff and the administration is a strong predictor of school outcome. On this basis, the principal's influence on curriculum is selected by this study as a school outcome indicator (see Question 4 in TIMSS Questions).

Table 4 (Appendix) summarizes the descriptive statistics of the influence of both the authoritative and integrative principals' leadership styles on the school curriculum. Since this data is interval data, the mode ("most likely" value) is used as the measure of the central tendency. (Note: the numerical values are assigned for each of the four scales as seen in Question 3 in TIMSS Questions).

Table 4 (Appendix) indicates that the integrative leadership style of the principal tends to influence the curriculum more often than those principals who possess an authoritative leadership style. This is illustrated in Figure 6 when the mode of value 4 ("A lot" of influence) is compared with the mode of value 3 ("Some" influence). The extreme difference between the two modes of the two styles is seen on the multiple histograms (Figure 6, Appendix) and shows the distribution of the curriculum influence for both the authoritative and integrative principal leadership styles.

The histogram indicates that the curriculum influence modes of the two styles of leadership are different. One concern with this data is the difference in sample size as Table 4 (Appendix) shows. One way to minimize this discrepancy is to compare the percentages of the two modes. Approximately 50% of the integrative principals have "a lot" of influence on the school curriculum (solid line in Figure 6, Appendix). On the other hand, the data shows approximately 40% of the authoritative principals have some influence on their school curriculum (dashed line in Figure 6, Appendix).

All in all, the data analysis of the USA schools and students revealed that the integrative principal leadership style not only encourages, but also creates cooperative school environments. Consequently, the school's effectiveness and outcomes are high. This relationship between the principal's leadership style and school outcome could be direct, indirect or both. Figure 7 (Appendix) depicts this cause/effect model that is suggested by the USA schools and student data.

CULTURE IMPACT ON PROPOSED MODEL(KUWAIT VS. USA)

This section investigates the cultural impact on the principal's leadership style and subsequent school environments and outcome. The religious, conservative culture of Kuwait is selected to investigate the leadership styles of its school's principals, the schools' environment and the school's outcome, as well as any interrelationship. The following approach is carried out with Kuwait data analysis and also compared with the USA results:

- Compares the principals' leadership styles in both cultures;
- Analyze Kuwait schools' environment and outcome;
- Develop a cause/effect model for Kuwait; and
- Investigate the differences and similarities in both cause/effect models of Kuwait and the USA in light of any cultural difference.

Principal Leadership Style Comparison

A comparison of the leadership styles of both cultures uses principals' communication level as an indicator. This analysis was used to determine whether there was a significant difference in the principals' communication levels between the USA and Kuwait. This will suggest a different leadership style between the two cultures.

In this analysis, an Analysis of Variance (ANOVA) was used to investigate the null hypothesis of equal population means of principals' communication hours per hours of Kuwait and the USA schools (Table 5, Appendix). The tested null hypothesis and the alternative hypothesis are as follows:

$$H_0 : \mu_{US} = \mu_{Kuwait}$$

$$H_a : \mu_{US} \neq \mu_{Kuwait}$$

The ANOVA calculates the P-value which is the area under the F-distribution curve that corresponds to the F value of 19.81. This represents the probability that the null hypothesis would occur by chance. Using a significance level of 5%, the null hypothesis was rejected in favor that the alternative hypothesis since the obtained P-value was less than the 0.05 significance level. Descriptive statistics is presented in Table 6 (Appendix) to provide more insight to the investigated data.

This data illustrate that principals in Kuwait spend less time communicating with parents, teachers, students and the community than their counterparts in the USA. This suggests that the principal's in Kuwait tend to be more authoritative and less integrative when compare with the USA principals. This finding coincides with one of the Kuwait culture characteristics, namely high power distance. Unlike the USA culture, Kuwait culture is characterized by high power distance in which authority and power is exercised most of the time. This is common in Kuwait and the Middle Eastern cultures in general, where this characteristic is observed in the work place as well as with family dynamics.

ANOVA Assumptions

A Brief discussion on the five ANOVA assumptions is carried out to insure the accuracy of the above ANOVA results, especially the calculated F-value and P-value.

Random sampling

The sample of each data set should was randomly selected as described by the TIMSS study – random sampling was vital to the external validity and the results.

Homogeneity of variance

This assumption states that the variance (or standard deviation) of each data set must be approximately equal. A homogeneity of variances test was conducted (Table 7, Appendix) to test for the following null hypothesis.

$$H_0 : s_{US} = s_{Kuwait}$$

$$H_a : s_{US} \neq s_{Kuwait}$$

The P-value was greater than the 0.05 significance level: the null hypothesis was accepted. Therefore, the assumption of approximately equal standard deviations was fulfilled.

Normal population

The observations with each data set should be from normally distributed populations. This assumption is usually relaxed when there are equal observations in each data set, which is not the case in this analysis. Therefore, a one-sample Kolmogorov-Smirnov test was conducted on each sample set to check the validity of this assumption. The following null hypothesis was tested in this analysis.

H₀: There is no difference between this sample and the population in term of normality.

The test resulted in significant P-values (Table 8, Appendix) for Kuwait and the USA. Adopting a 5% significance level, both P-values were greater than 0.05, therefore the null hypothesis was accepted and the normal population assumption was fulfilled.

Samples Independence

This assumption is related to the independency of the two groups so that no one observation was used in the two groups. The importance of this assumption insured that the contribution of each group to the total variance was additive. This assumption was fulfilled by the methodology of the TIMSS study in which there were independent groups from Kuwait and the USA principals.

Interval/ratio dependent variable

The dependent variable must be interval/ratio data. The number of hours of communication per week was a ratio scale fulfilling this assumption.

Summary of assumptions

The analysis of the five ANOVA assumptions revealed that all the assumption were fulfilled, hence the obtained ANOVA results are accurate and valid.

Kuwait School Environment

In this analysis, the teachers' cooperation and collaboration in instructional experience and material (TIMSS Question #2) was used as an indicator of the Kuwait school environment. Each of the 27 schools used in this study have a policy to promote cooperation among teachers yet two schools (7.4%) answered that teachers don't meet regularly to share and discuss instructional goals and material. Qualitatively, this

indicates that Kuwait schools maintain a cooperative environment which should result in high school outcomes in relation to academic achievement.

Kuwait Schools Outcome

The indicators (dependent variables) in this investigation of the school's outcome are the students' mathematics and science academic achievement. The TIMSS data for the other indicator of principal's influence on curriculum is null for Kuwait. The data from TIMSS Question # 4 was analyzed and a multiple histogram of both mathematics and science academic achievement of Kuwait schools' students is seen in Figure 8 (Appendix). The modes in the histogram indicate high academic achievement which is represented by an "Agree" answer. Furthermore, there are a high percentage of observations (40%) with the answer of "Strongly Agree" showing an extraordinary academic achievement for the Kuwait schools.

A brief analysis of data from Kuwait schools and students suggest a different relationship than the one developed using the USA data. The Kuwait data analysis showed that although the authoritative principal's leadership style is predominant in Kuwait schools, the schools maintain a cooperative environment and school outcome is in terms of student academic achievement. Figure 9 (Appendix) depicts the proposed Kuwaiti schools' cause/effect model and the relationship between principal's leadership style, school's environment and school outcome.

Kuwait and USA Data Comparison

The results of the ANOVA showed a significant difference in the communication level between the Kuwait and the USA principals which indicates the difference in leadership styles between the two countries. Kuwait principals tend to be authoritative in their leadership style while the USA principals are more integrative. Additionally, the data of the schools' environments in both cultures revealed the same trend; cooperation and collaboration exists in both schools' cultures. Table 9 (Appendix) summarizes the level of cooperation in Kuwait and the USA cultures.

There was a large difference in the percentage of schools, between the two cultures, that officially promote cooperation (100% in Kuwait and 57% in the USA, Table 9, Appendix). Cooperation, however, is encouraged in both cultures (100%) and the actual cooperation was found to be similar as well (92.6% in Kuwait and 90.7 % in the USA). This shows that in spite of the principal's leadership style, the same results are produced – a cooperative environment. This finding suggests that there is not a universal principal leadership style that will result in the same environmental outcome. The school's outcome (student academic achievement) in both cultures show similar models of each culture. Figure 10 (Appendix) and Figure 11(Appendix) compare the mathematics and science academic achievement, respectively, of the students in the Kuwait and the USA schools.

Similar to the school's environment trend, the academic achievements of the students of both cultures almost match one another. The mode in both Kuwait and the USA samples is "Agree", indicating a reasonably high academic achievement in each. These results indicate that although the principals' leadership style is different in the two

cultures (authoritative in Kuwait and integrative in the USA), both styles create the same school environment (cooperative) and school outcome (academic achievement).

By comparing the Kuwait and the USA models, it was concluded that their cultures had great impact on their principal's leadership style, yet there was no unique and universal leadership style that always achieved an increase in school outcome. In some cultures, the authoritative principals' leadership style was the appropriate style to achieve the high outcome of the school, while in other cultures the integrative style was the appropriate style. This explanation is probably dependent on how each culture perceives power, authority, and relationships in the work place and in their society in general.

CONCLUSIONS AND RECOMMENDATION

Conclusions

Following are the general conclusion of this study:

- There exists a cause/effect, direct and indirect relationship between principal's leadership style and school outcome. An indirect one is where the principal's leadership style influences the school's environment which in turn impacts the school's outcome.
- The indirect principal leadership style and school outcome relationship seems to be the predominant one in the USA and Kuwait.
- In the USA, an integrative principal leadership style promotes, encourages and creates cooperation and collaboration among the teachers more than the leadership of the authoritative principals. Consequently, schools with integrative principals achieve higher academic outcomes than schools with authoritative principals.
- There is a difference in the principal's leadership styles between Kuwait and the USA. Kuwait principals are characterized as authoritative leaders, while the USA principals are characteristically integrative in style.
- In Kuwait, unlike in the USA, the authoritative principal's leadership style was found to promote, encourage and create cooperation and collaboration among teachers, thus school's high academic outcomes are achieved.
- Culture has a significant impact on the principal's leadership style. Principals in high power, distance cultures (such as Kuwait) exercise their authoritative role more than their interpersonal role.
- There is not a universal and appropriate leadership style of principals for all schools and cultures. The appropriate principal leadership style depends on the culture in which the school exists.

Recommendation

The following recommendations are made for future research into this topic:

- Add more data, possibly more data from western countries, to the USA data, to compare more integrative leadership styles;
- Acquire specific data on principals' leadership styles (i.e. decision making process, school structure, and planning) from secular schools and Islamic schools in the USA; and

- Using TIMSS data, investigate more than one country in the Middle East to come up with a more general model.

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APPENDIX

Table 1. Construct and Indicators

Construct	Indicator
Principal Leadership Style	Written and Verbal communication Level
School Environment	Teacher Cooperation and Collaboration
School Outcome	Student Academic Achievement and Principal Influence on Curriculum

Figure 1. Leadership style grid (Bennett, 1996).

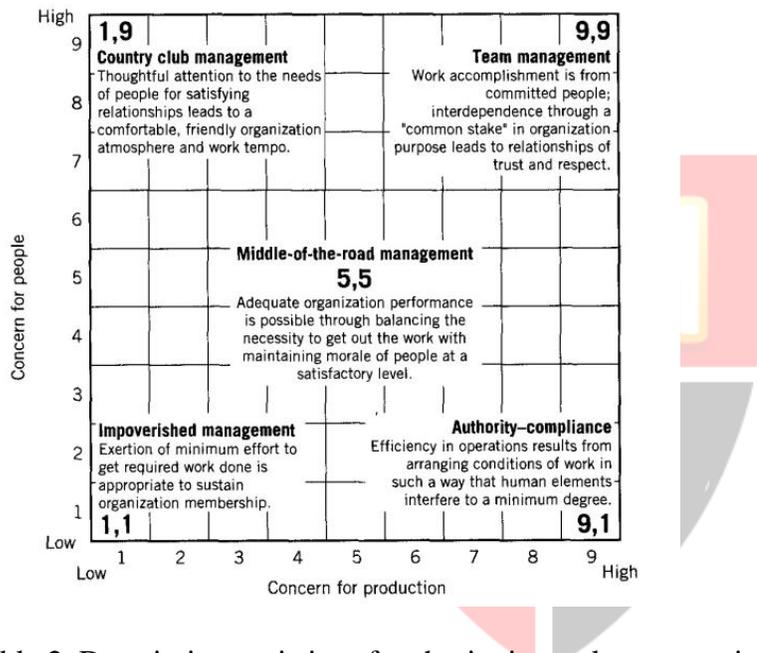


Table 2. Descriptive statistics of authoritative style communication level (hrs./wk.)

Mean	8.97
Median	9.50
Mode	12
Standard Deviation	3.24
Variance	10.52
Sample No. (N)	62

Table 3. Descriptive statistics of integrative style communication level (hrs./wk.)

Mean	31.58
Median	32.50
Mode	34
Standard Deviation	2.75
Variance	7.54
Sample No. (N)	12

Figure 2. Comparison Whisker Box plot of leadership style (communication level)

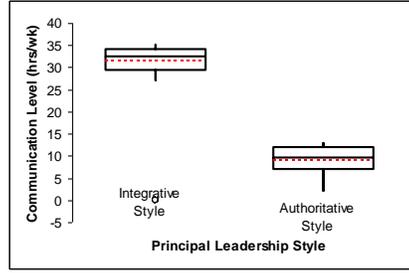


Figure 4. A comparison histogram of student academic science achievement and principal’s leadership style

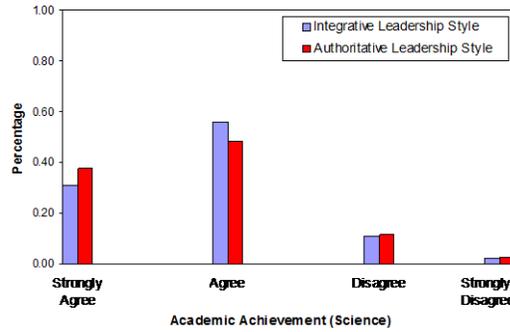


Figure 5. A comparison histogram of student academic math achievement and principal’s leadership style

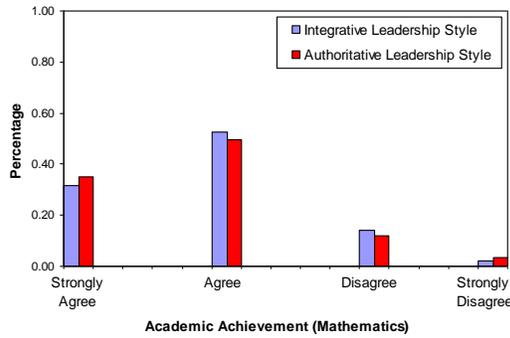


Figure 6. Comparative histogram of curriculum influence of the two leadership styles

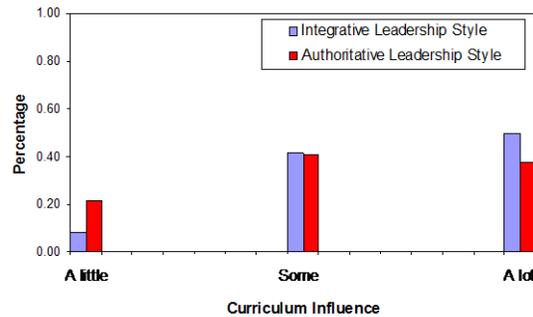


Table 4. Curriculum influence descriptive statistics

Discriptive statistics	Authoritative style	Integrative Style
Mean	3.16	3.42
Median	3	3.5
Mode	3	4
Standard Deviation	0.76	0.67
Variance	0.57	0.45
Sample No. (N)	56	12

Figure 7. Suggested principal style/school outcome - USA model

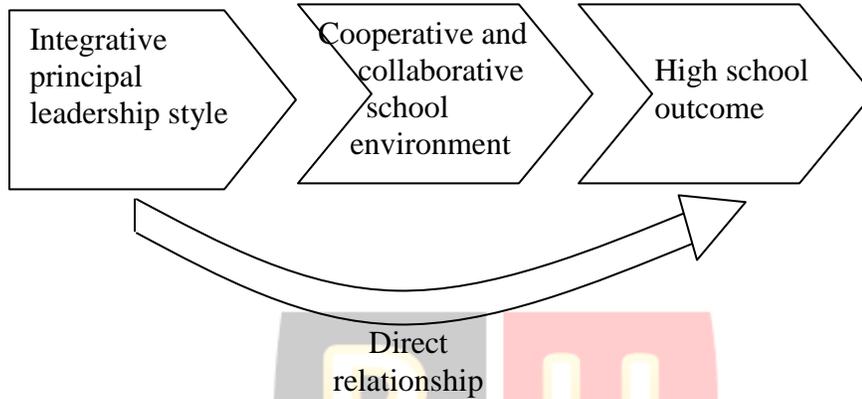


Table 5. ANOVA Table of Kuwait and the USA Principal’s Communication Level

Variation Source	Sum of Squares	df	Mean Square	F	P-value
Between Groups	996.41	1	996.41	19.81	<0.0001
Within Groups	8551.07	170	50.3		
Total	9547.49	171			

Table 6. Data sets descriptive statistics

	Mean	Standard Deviation	N
Kuwait	9.123	5.31	28
USA	15.64	7.38	144
Total	14.58	7.47	172

Table 7. Homogeneity of variance

Levene Statistics	df1	df2	P-value
2.471	1	170	0.118

Table 8. Population normality assumption test results

Country	Kolmogorov-Smirnov Z	Asymp. P-value (2-tailed)
Kuwait	0.916	0.372
USA	0.922	0.363

Figure 8. Math and science Kuwait students’ academic achievement

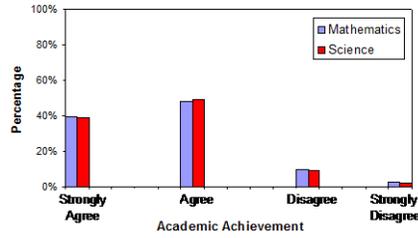


Figure 9. Suggested principal style/school outcome cause/effect in Kuwait schools.

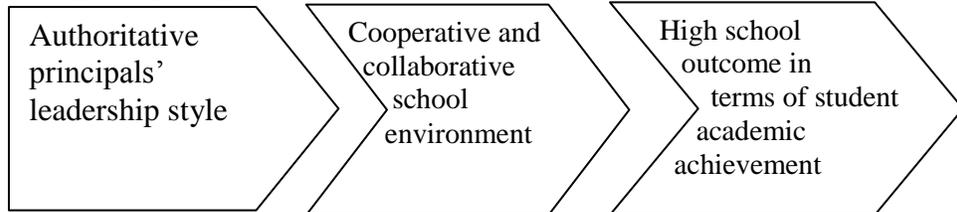


Table 9. Percentage of schools in which cooperation is officially promoted, encouraged and actual.

Country	Cooperation and collaboration among teachers is:		
	Officially promoted (%)	Encouraged (%)	Actual (%)
Kuwait	100	100	92.6
USA	57	100	90.7

Figure 10. A multiple histogram to compare the math academic achievement of Kuwait and the USA cultures.

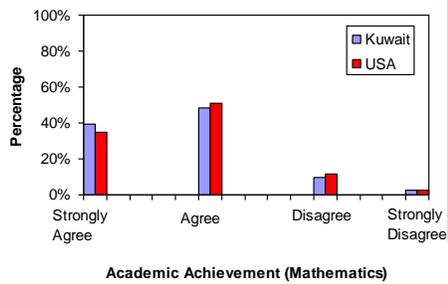


Figure 11. A multiple histogram to compare the science academic achievement of Kuwait and the USA cultures.

