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ABSTRACT

THE PREDICTIVE ROLES OF THE PERSONAL VARIABLES AND THE LEADER  
ATTRIBUTES AND BEHAVIORS OF DEPARTMENT CHAIRPERSONS  
REGARDING THE OUTCOMES OF LEADERSHIP AS PERCEIVED  
BY DEPARTMENT MEMBERS IN SELECTED  
JAMAICAN UNIVERSITIES

by

Vivienne Lyn Quarrie

Chair: Sylvia Gonzalez

## ABSTRACT OF GRADUATE STUDENT RESEARCH

Dissertation

Andrews University

School of Education

Title: THE PREDICTIVE ROLES OF THE PERSONAL VARIABLES AND THE LEADER ATTRIBUTES AND BEHAVIORS OF DEPARTMENT CHAIRPERSONS REGARDING THE OUTCOMES OF LEADERSHIP AS PERCEIVED BY DEPARTMENT MEMBERS IN SELECTED JAMAICAN UNIVERSITIES

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Date completed: August 2012

### Problem

Leaders within the Jamaican education system have often been selected either because of their personal aspirations or their emergence. Since institutional success is integrally linked to leadership, an intentional approach to leader identification should be established in an effort to consistently yield the desired outcomes. The purpose of this study, therefore, is to identify the predictive roles of the four personal variables (Leader Gender, Formal Leadership Training, Informal Leadership Training, and Years of Service as an Educator), and the nine leader attributes and behaviors of Bass's Full-Range Leadership Model (Idealized-Influence Attributed, Idealized-Influence Behavior, Inspirational Motivation, Intellectual Stimulation, Individualized Consideration, Contingent Reward, Management-by-Exception Active, Management-by-Exception Passive, and Laissez-Faire Leadership) regarding the three outcomes of leadership

(Extra Effort, Effectiveness, and Satisfaction) as perceived by Department Members concerning the leadership of their Department Chairpersons in selected Jamaican universities. Such an effort, it is hoped, will identify core characteristics to be used in the process of leader identification, so that success is not achieved merely by happenstance, by the few, but by design, by the majority.

### Method

The HLM 7 Hierarchical Linear and Nonlinear Modeling statistical program was used to analyze the data in this quantitative research. Level-one data were obtained from 148 of 795 Department Members using the Multifactor Leadership Questionnaire (MLQ) Rater Form (5X-Short), and level-two data were obtained from 20 of 41 Department Chairpersons using the researcher-developed Leader Attributes and Behaviors Demographic Information (LABDI) Leader Form. The Statistical Package for the Social Sciences (SPSS) was used to organize the data, to provide descriptive statistics, and to cross-validate the findings of the HLM analyses.

### Findings

The process of data analysis revealed that Inspirational Motivation, with a regression coefficient of 0.360 ( $SE = 0.138$ ,  $t_{(119)} = 2.602$ ,  $p < 0.01$ ); Individualized Consideration, with a regression coefficient of 0.372 ( $SE = 0.119$ ,  $t_{(119)} = 3.118$ ,  $p < 0.01$ ); and Management-by-Exception Passive, with a regression coefficient of -0.165 ( $SE = 0.083$ ,  $t_{(119)} = -1.990$ ,  $p < 0.05$ ), are the best predictors of Extra Effort. Idealized-Influence Attributed, with a regression coefficient of 0.276 ( $SE = 0.101$ ,  $t_{(119)} = 2.745$ ,  $p < 0.01$ ); Intellectual Stimulation, with a regression coefficient of 0.183 ( $SE = 0.088$ ,  $t_{(119)} = 2.085$ ,  $p < 0.05$ ); and Laissez-Faire Leadership, with a regression coefficient of -0.168 ( $SE = 0.059$ ,  $t_{(119)} = -2.849$ ,  $p < 0.01$ ), are the best predictors of Effectiveness. Idealized-Influence Attributed, with a regression coefficient of 0.261 ( $SE = 0.111$ ,  $t_{(119)} = 2.362$ ,  $p < 0.05$ ); Intellectual Stimulation, with a regression coefficient of 0.324 ( $SE = 0.097$ ,  $t_{(119)} = 3.355$ ,  $p < 0.01$ ); and Individualized Consideration, with a regression

coefficient of 0.198 ( $SE = 0.096$ ,  $t_{(119)} = 2.072$ ,  $p < 0.05$ ), are the best predictors of Satisfaction.

In addition, none of the four personal variables was found to be a significant predictor of the three outcomes of leadership. The full model explained 71.1% of the variance in Extra Effort, 79.1% of the variance in Effectiveness, and 79.3% of the variance in Satisfaction. These findings indicate the discrediting of each of the three null hypotheses, and the partial acceptance of each of the three research hypotheses.

### Conclusions

If the preferred outcomes of leadership (Extra Effort, Effectiveness, and Satisfaction) are to be realized, then methodologies that strategically identify aspiring, potential, and emergent leaders will need to be determined. The findings of this research indicate the necessity for the conducting of other studies on leadership in the field of education.

Andrews University

School of Education

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JAMAICAN UNIVERSITIES

A Dissertation

Presented in Partial Fulfillment

of the Requirements for the Degree

Doctor of Philosophy

by

Vivienne Lyn Quarrie

August 2012

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Date approved

Dedicated to the memory of my parents, Victor and Ena Quarrie, who did not live to see the results of their labor; to my deceased brother, Kevon; and to my living siblings Attlee, Cannute, Clive, Lloyd, Vanessa, and Veronee for their tenacity and determination to succeed despite the specter of economic poverty.

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## LIST OF ABBREVIATIONS

CHID	Department Chairperson's Identification Number
CR	Contingent Reward
EE	Extra Effort
EFF	Effectiveness
FLTR	Formal Leadership Training
HLM	The Hierarchical Linear Model
IC	Individualized Consideration
ID	Participant Identification Number
II-A	Idealized-Influence Attributed
II-B	Idealized-Influence Behavior
ILTR	Informal Leadership Training
IM	Inspirational Motivation
IS	Intellectual Stimulation
LABDI	Leader Attributes and Behaviors Demographic Information (LABDI) Leader Form
LF	Laissez-Faire Leadership
LGEN	Leader Gender
LYOS	Years of Service as an Educator
MBE-A	Management-by-Exception Active
MBE-P	Management-by-Exception Passive
MLQ	The Multifactor Leadership Questionnaire (MLQ) Rater Form (5X-Short)
SAT	Satisfaction
SPSS	The Statistical Package for the Social Sciences (SPSS)

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## CHAPTER I

### INTRODUCTION

#### **The Imperative of Leadership**

The matter of leadership is of critical importance to societal growth and development, and has implications for personal, professional, organizational, national, and international development. It is this realization that has prompted this examination of the predictive roles of specified personal variables, and the leader attributes and behaviors of Department Chairpersons within Jamaican institutions of higher education, regarding the outcomes of leadership Extra Effort, Effectiveness, and Satisfaction as perceived by their Department Members. This prologue to the entire work has, therefore, introduced the concept of organizational leadership, has provided the background to the problem, has given a statement of the problem, has affirmed the purpose and significance of the study, has posed the three research questions and hypotheses, has supplied the theoretical framework, has identified the significance of the study, has defined the significant terms used in the study, has outlined the general methodology, and has identified the assumptions, limitations, and delimitations of the study. A summary, followed by an outline of the organization of the study, completes this overview.

#### **An Introduction to the Concept of Organizational Leadership**

The leader attributes and behaviors of those who lead organizations and institutions are of vital importance to the outcomes of leadership, since the performance of organizations has been linked primarily to the type and quality of leadership that the organization receives. This is a view held by Yukl (2002) who has proffered the argument that “the most commonly used

measure of leader effectiveness is the extent to which the leader's organizational unit performs its tasks successfully and attains its goals" (p. 8). In support of this stance, Hernez-Broome and Hughes (2004) have opined that, "today, effective leadership is commonly viewed as central to organizational success, and more importance is placed on leadership development than ever before" (p. 27). Similarly, John W. Gardner (1993), in his classic work on leadership, posits that there is an integral inter-relationship between the leader, the organization, and the followers, which needs to be recognized and nurtured for the accomplishment of organizational goals. This view is summarized in the quotation below:

Leaders cannot be thought of apart from the historic context in which they arise, the setting in which they function . . . and the system over which they preside. They are integral parts of the system, subject to the forces that affect the system. They perform (or cause to be performed) certain tasks that are essential if the group is to accomplish its purposes. (p. 1)

In our highly mechanized world in which technological advancements have propelled the development of dynamic work environments, there is a need for dynamic, visionary leaders who possess leadership skills that are capable of meeting the challenges and opportunities that exist in the modern workplace that is intent on promoting the change necessary for developing and maintaining the competitive edge (Burke, 2002). If this is true for leadership in general, then it is even more critical that leaders of the highest caliber are identified, developed, and honed within our educational institutions, so that a cadre of leaders may be prepared, not only for work in the field of education, but also for the market place in general. To meet this challenge, Cascio (1995) suggests that "more often today's networked, interdependent, culturally diverse organization requires transformational leadership" (p. 930). This need for outstanding leadership has been further reinforced by Avolio and Bass (2004), Bass (2008), Bass and Riggio (2006), Sosik and Jung (2010), and Yukl (2002). These have suggested that the Full-Range Leadership Model, identified by Bass, and spanning three leadership styles—Passive/Avoidant Leadership, Transactional Leadership, and Transformational Leadership—should be used to identify the

predictive roles of this range of leader attributes and behaviors regarding the three outcomes of leadership—Extra Effort, Effectiveness, and Satisfaction.

Schippers, Den Hartog, Koopman, and Van Knippenberg (2008), in a study of the predictive role of Transformational Leadership on the performance of workers, found that Transformational Leadership leads to higher team performance than other leadership styles. Bass (2008) has indicated that other studies conducted to examine the veracity of claims such as this have found that Passive/Avoidant Leadership has been identified as the style that predicts the outcomes of leadership most negatively, followed by Transactional Leadership, with Transformational Leadership being the best positive predictor of the outcomes of leadership. Further, Leithwood (1994), a researcher in the field of education, found that there is strong support for the assertion that Transformational approaches to leadership contribute considerably to the enhancement of the school restructuring process. This claim is substantiated by Hoy and Miskel (2005), who have presented the following view:

Overall, transformational leadership theory is being used widely and is generally supported by numerous studies. Consequently, a model of transformational leadership can provide intellectual capital for educational leaders as they confront the challenges of modernizing their school organizations. . . . To lead transformational initiatives, however, requires a range of abilities, skills, and behaviors that, according to Bass (1998), can be developed, taught, and learned. (p. 402)

Additionally, they have indicated that based on research done by Dvir, Eden, Avolio, and Shamir (2002), there is some evidence that Transformational Leadership can be enhanced through formal training, a view also espoused by Bass and Riggio (2006), Gardner (1993), Hughes, Ginnett, and Curphy (2009), Kouzes and Posner (2007), Muczyk and Adler (2002), Wren (1995), and Yukl (2002). This is a strong indicator that whatever the gifts and talents of the individual, appropriate and adequate education serves to enhance and improve performance.

Further, in his discussion of possible factors that influence leadership outcomes, Bass (2008) has indicated that there are numerous personal variables—among others—that interact and interplay to predict the outcomes of leadership. Four of these personal variables being examined

in this study are gender, formal leadership training, informal leadership training, and years of service as an educator. While the selection of these four personal qualities is neither exhaustive nor representative of the range of skills and qualities necessary for successful leadership, these are among the most commonly considered variables in this study of the predictive roles of the leader attributes and behaviors necessary for the attainment of the preferred positive outcomes of leadership. The selection of these qualities is also significant since more women than men work as educators at all levels of the education system in Jamaica, since intentional formal and informal leadership preparation is not often a priority in the sphere of education, and since experience and expertise developed over time are often considered to be adequate preparation for promotion to positions of leadership in the realm of education. Moreover, within the context of the institution of higher education, Buller (2009) speaks of the Department Chairperson as a campus leader who functions in the multiple roles of academic leader, visionary leader, practical leader, and honest broker, who is viewed as a resource person to deans and presidents, especially in environments in which there are limited resources. The pivotal role played by these chairpersons places them at the core of the leadership spectrum in universities, and makes their preparedness necessary for institutional success.

### **Background to the Problem**

It has been generally accepted that some leader attributes and behaviors promote success, while others promote mediocrity and ultimate failure (Maxwell, 2007; Sosik & Jung, 2010). While it is true that the outcomes of leadership are contingent on numerous variables, the findings of research have indicated that individuals are not only shaped by their inherited qualities, tendencies, gifts, and talents; their personalities; their environments; or by their experiences; but they are also impacted in varying degrees by the process of education (Bass, 2008).

However, despite this knowledge, the achievement of institutional or organizational goals has often been hindered because there is little, if any, of this eclectic and integrated approach to

the preparation of individuals to fulfill their responsibilities as leaders. When this travesty occurs, not only are personal and professional relationships jeopardized, but also such problems cause or promote inefficiencies within the system that stymie potential growth within the institution. Educational institutions are not immune to this problem, and often pay a much higher price than other types of organizations, as the outcomes often have major negative implications, not only for the students, the workers, the institutions, or the stakeholders, but also for national growth, development, and progress. As has been indicated by Bass (2008), this realization has led to the development of principles and programs to promote leadership development from the level of the high school, through to the institution of higher education.

Although some educational institutions in Jamaica are investing in the formal and informal preparation of their selected or emergent leaders, this secret to outstanding institutional success needs to be more intentional, as well as widespread. Such a necessary revolution continues to be tempered despite the fact that a similar recommendation was made to the Jamaican Ministry of Education by Mead (1976), after analyzing the findings of his study entitled, *The Leadership Behavior of Jamaican High School Principals: Perceptions and Expectations of Teachers and Principals*. The importance of investing in both the formal and informal preparation of selected and emergent leaders has been highlighted by numerous writers, among whom are Bass and Riggio (2006) and Hernez-Broome and Hughes (2004). The former, while being critical of some of the inadequate formal leadership programs available, speak of the significance of formal education for the teaching of leadership skills in the following way:

For too long, leadership development has been seen mainly as a matter of training, as such, and skill development. But leadership—particularly transformational leadership—should be regarded as an art and a science likely to be enhanced with a quality education process. (p. 135)

The latter, who overtly subscribe to an eclectic approach to leader preparation, have made the observation that

one clear trend over the past 20 years has been the increasing use and recognition of the potency of a variety of developmental experiences. Classroom-type training—for long

the primary *formal* development mode—is now complemented (or even supplanted) by activities as diverse as high ropes or reflective journaling.

Classroom training should not be the only part of a leadership development initiative. While training may even be a necessary element of leadership development, developmental experiences are likely to have the greatest impact when they can be linked to or embedded in a person's ongoing work, and when they are an integrated set of experiences. Activities like coaching, mentoring, action learning, and the 360-degree feedback, are increasingly key elements of leadership development initiatives. (p. 25)

If it is true that leadership education and training are of such importance to the effective fulfillment of leadership roles, then it becomes necessary for organizations and institutions to identify the leader attributes and behaviors that are relevant for the fulfillment of their organizational goals, and provide their leaders and prospective leaders with these exposures, in an effort to enhance their performance. Since many of our leaders are trained in universities, the premier institutions of higher education, it seems appropriate to recommend that in addition to the information available in the existing body of knowledge, studies be done to determine the leader attributes and behaviors that are characteristic of their focal leaders in an effort to determine those that lead to the motivation of followers to make the extra effort to fulfill their goals, those that lead to effectiveness, and those that promote satisfaction with the leader. If this is done, it will then become possible to develop models that guide leaders and potential leaders to achieve the positive outcomes of leadership that are relevant to the national goals within the Jamaican context.

The preceding views support the need for an eclectic approach to leader preparation, in an effort to optimize organizational output. While it is true that some institutions, associations, and support groups continue to engage educators in programs and activities that aim to prepare their educational leaders, there needs to be a more intentional approach to leader identification, selection, and preparation within the Jamaican context. It seems that a solution to this problem would be to identify the leader attributes and behaviors that produce the desired outcomes, and identify and prepare leaders and potential leaders—using the best available resources—for organizational success. Such an effort, it is hoped, will encourage educational institutions to intentionally prepare

those who are placed in positions of leadership, so that success is not achieved merely by happenstance, by the few, but by design, by the majority.

### **Statement of the Problem**

An examination of the course requirements and contents of the programs of study in the selected universities as observed in their student handbooks and curricula between 2008 and 2010 reveal that there is little, if any, leadership preparation included or required for most programs of study being undertaken at the undergraduate, graduate, and postgraduate levels in the institutions, with the exception of management, administration, and leadership programs. This means that individuals who are trained in the various disciplines, apart from those that are directly leadership related, are not formally exposed to leadership education and preparation. This is unfortunate, as many of the individuals who are presently in positions of leadership in institutions of higher education have, over time, emerged as leaders, not having intentionally sought these positions. Even when those who aspire to become leaders in the field of education have completed the specified training programs, they are still relatively unprepared, but for a few courses that are often inadequate to meet the challenges of leadership.

Although it is widely accepted that there are numerous correlates that influence the ability of the individual to lead, studies that have “looked at the effects of transformational leadership training on the performance of military, public sector, and private industry leaders in the United States, Canada, and Israel . . . indicated that improving transformational leadership skills is quite easy” (Hughes et al., 2009, p. 650), as participants who intentionally worked on improving those skills reported improved scores. These findings suggest that even in those who possess these leader attributes and behaviors that produce positive outcomes, preparation for leadership, intentionally done, heightens the possibility for exponentially improved results.



### **Purpose of the Study**

The purpose of this study is to identify the predictive roles of the four personal variables (Leader Gender, Formal Leadership Training, Informal Leadership Training, and Years of Service as an Educator) and the nine leader attributes and behaviors of Bass's Full-Range Leadership Model, regarding the three outcomes of leadership of Department Chairpersons from the perspective of the Department Members in selected Jamaican universities, in an effort to determine any relationships that may predispose these Department Chairpersons to inspire their followers to display the preferred outcomes of leadership.

### **Research Questions**

Three research questions, determined by contemplating the predictive roles of the personal variables and the leader attributes and behaviors of Department Chairpersons regarding the three outcomes of leadership as perceived by Department Members in selected Jamaican universities, will be answered by this study. They are:

Research Question 1: What are the predictive roles of the four personal variables (Leader Gender, Formal Leadership Training, Informal Leadership Training, and Years of Service as an Educator) and the nine leader attributes and behaviors of Bass's Full-Range Leadership Model (Idealized-Influence Attributed, Idealized-Influence Behavior, Inspirational Motivation, Intellectual Stimulation, Individualized Consideration, Contingent Reward, Management-by-Exception Active, Management-by-Exception Passive, and Laissez-Faire Leadership) regarding the outcome of leadership Extra Effort, as perceived by Department Members concerning the leadership of their Department Chairpersons?

Research Question 2: What are the predictive roles of the four personal variables (Leader Gender, Formal Leadership Training, Informal Leadership Training, and Years of Service as an Educator) and the nine leader attributes and behaviors of Bass's Full-Range Leadership Model (Idealized-Influence Attributed, Idealized-Influence Behavior, Inspirational Motivation,

Intellectual Stimulation, Individualized Consideration, Contingent Reward, Management-by-Exception Active, Management-by-Exception Passive, and Laissez-Faire Leadership) regarding the outcome of leadership Effectiveness, as perceived by Department Members concerning the leadership of their Department Chairpersons?

Research Question 3: What are the predictive roles of the four personal variables (Leader Gender, Formal Leadership Training, Informal Leadership Training, and Years of Service as an Educator) and the nine leader attributes and behaviors of Bass's Full-Range Leadership Model (Idealized-Influence Attributed, Idealized-Influence Behavior, Inspirational Motivation, Intellectual Stimulation, Individualized Consideration, Contingent Reward, Management-by-Exception Active, Management-by-Exception Passive, and Laissez-Faire Leadership) regarding the outcome of leadership Satisfaction, as perceived by Department Members concerning the leadership of their Department Chairpersons?

The research questions were answered by examining the predictive roles of the four personal variables, and the nine leader attributes and behaviors of Bass's Full-Range Leadership Model, regarding each of the outcomes of leadership—Extra Effort, Effectiveness, and Satisfaction—of Department Chairpersons, as perceived by Department Members in the selected Jamaican institutions of higher education being studied.

### **Research Hypotheses**

The research hypotheses that were tested in this study are indicated below.

Research Question 1 was tested with the following hypothesis:

Hypothesis 1: There is a significant relationship between Leader Gender (LGEN), Formal Leadership Training (FLTR), Informal Leadership Training (ILTR), and Years of Service as an Educator (LYOS); and Idealized-Influence Attributed (II-A), Idealized-Influence Behavior (II-B), Inspirational Motivation (IM), Intellectual Stimulation (IS), Individualized Consideration (IC), Contingent Reward (CR), Management-by-Exception Active (MBE-A), Management-by-

Exception Passive (MBE-P), and Laissez-Faire Leadership (LF) that predicts Extra Effort (EE), as perceived by Department Members regarding the leadership of their Department Chairpersons.

Null Hypothesis 1: There is no significant relationship between Leader Gender (LGEN), Formal Leadership Training (FLTR), Informal Leadership Training (ILTR), and Years of Service as an Educator (LYOS); and Idealized-Influence Attributed (II-A), Idealized-Influence Behavior (II-B), Inspirational Motivation (IM), Intellectual Stimulation (IS), Individualized Consideration (IC), Contingent Reward (CR), Management-by-Exception Active (MBE-A), Management-by-Exception Passive (MBE-P), and Laissez-Faire Leadership (LF) that predicts Extra Effort (EE), as perceived by Department Members regarding the leadership of their Department Chairpersons.

Research Question 2 was tested with the following hypothesis:

Hypothesis 2: There is a significant relationship between Leader Gender (LGEN), Formal Leadership Training (FLTR), Informal Leadership Training (ILTR), and Years of Service as an Educator (LYOS); and Idealized-Influence Attributed (II-A), Idealized-Influence Behavior (II-B), Inspirational Motivation (IM), Intellectual Stimulation (IM), Individualized Consideration (IC), Contingent Reward (CR), Management-by-Exception Active (MBE-A), Management-by-Exception Passive (MBE-P), and Laissez-Faire Leadership (LF) that predicts Effectiveness (EFF), as perceived by Department Members regarding the leadership of their Department Chairpersons.

Null Hypothesis 2: There is no significant relationship between Leader Gender (LGEN), Formal Leadership Training (FLTR), Informal Leadership Training (ILTR), and Years of Service as an Educator (LYOS); and Idealized-Influence Attributed (II-A), Idealized-Influence Behavior (II-B), Inspirational Motivation (IM), Intellectual Stimulation (IS), Individualized Consideration (IC), Contingent Reward (CR), Management-by-Exception Active (MBE-A), Management-by-Exception Passive (MBE-P), and Laissez-Faire Leadership (LF) that predicts Effectiveness (EFF), as perceived by Department Members regarding the leadership of their Department Chairpersons.

Research Question 3 was tested with the following hypothesis:

Hypothesis 3: There is a significant relationship between Leader Gender (LGEN), Formal Leadership Training (FLTR), Informal Leadership Training (ILTR), and Years of Service as an Educator (LYOS); and Idealized-Influence Attributed (II-A), Idealized-Influence Behavior (II-B), Inspirational Motivation (IM), Intellectual Stimulation (IS), Individualized Consideration (IC), Contingent Reward (CR), Management-by-Exception Active (MBE-A), Management-by-Exception Passive (MBE-P), and Laissez-Faire Leadership (LF) that predicts Satisfaction (SAT), as perceived by Department Members regarding the leadership of their Department Chairpersons.

Null Hypothesis 3: There is no significant relationship between Leader Gender (LGEN), Formal Leadership Training (FLTR), Informal Leadership Training (ILTR), and Years of Service as an Educator (LYOS); and Idealized-Influence Attributed (II-A), Idealized-Influence Behavior (II-B), Inspirational Motivation (IM), Intellectual Stimulation (IS), Individualized Consideration (IC), Contingent Reward (CR), Management-by-Exception Active (MBE-A), Management-by-Exception Passive (MBE-P), and Laissez-Faire Leadership (LF) that predicts Satisfaction (SAT), as perceived by Department Members regarding the leadership of their Department Chairpersons.

### **Theoretical Framework**

The theoretical framework that supports this research is the model of Transformational Leadership, propounded by Burns (1978), and later developed by scholars such as Bass (1985), Bennis (2009), Bennis and Nanus (2007), and Tichy and Devanna (1997). This framework, which involves a continuum called a Full-Range Leadership Model (Bass, 1998), includes the three major leadership styles: Passive/Avoidant, Transactional, and Transformational (Bass, 1998). Although the number of factors that comprise the styles has changed over the years, the three styles have remained constant (Avolio, Bass, & Jung, 1999).

The Full-Range Leadership Model (Appendix A) was developed to include nine factors that have been divided among the three styles. According to Antonakis, Avolio, and

Sivasubramaniam (2003), the factors which comprise the Passive/Avoidant Leadership Style are Laissez-Faire Leadership (LF) and Management-by-Exception Passive (MBE-P); those that comprise the Transactional Leadership Style are Management-by-Exception Active (MBE-A) and Contingent Reward (CR); those which comprise the Transformational Leadership Style are Individualized Consideration (IC), Intellectual Stimulation (IS), Inspirational Motivation (IM), Idealized-Influence Behavior (II-B), and Idealized-Influence Attributed (II-A). This model has been expanded to include three other factors—Extra Effort (EE), Effectiveness (EE), and Satisfaction (SAT)—included in the Multifactor Leadership Questionnaire (MLQ) Rater Form (5X-Short), and identified by Avolio and Bass (2004) as the outcomes of leadership (Appendices B, E, and F). This questionnaire is used by raters to evaluate the relevant leaders.

Additionally, to determine whether or not the four personal variables interact with the nine leader attributes and behaviors, and serve as predictors of the three outcomes of leadership of Department Chairpersons as perceived by Department Members in the selected universities, one researcher-developed demographic questionnaire, the Leader Attributes and Behaviors Demographic Information (LABDI) Leader Form (Appendices E and F), was used to collect data from the leaders being studied. This form is comprised of five items that relate to four personal variables—Leader Gender (LGEN) with one item, Formal Leadership Training (FLTR) with two items (with only the second of these items used in the analysis since the first was used primarily as a leading question), Informal Leadership Training (ILTR) with one item, and Years of Service as an Educator (LYOS) with one item.

### **Significance of the Study**

Since the majority of the research done in leadership development has been done outside the field of education, and since a search of the literature within the Jamaican context has revealed that there is limited research in the area of leader behavior, with even less available resources on this subject in the sphere of education, this study is significant for three primary

reasons. The first major reason is the hope that the findings will contribute to the existing body of knowledge that guides leader preparation and practice in education in general, and more specifically, in higher education. The second major reason is the possibility that the outcomes of this research will inspire further research in the area. The third major reason is that it is anticipated that this study will help to inform and influence the relevant institutional leaders and government ministries to develop and promote procedures and programs that prepare present and prospective leaders to serve within educational institutions. This research should, therefore, fill an existing void in the available body of knowledge in the realm of higher education on the island of Jamaica.

### **Definition of Terms**

It will be valuable to define numerous terms that have been used in this study in relation to their intended use in this context, so that there are no misconceptions regarding their meanings. Definitions have been adapted primarily from the work of Avolio and Bass (2004) that has served as the foundation of this research, from Sosik and Jung (2010), as well as from the commonly understood applications of each concept. The terms are:

*Census*: A research design that involves the potential participation of all members of specifically selected strata of subjects, chosen from a pre-determined population.

*Challenging Job Assignments*: Job-related challenges presented as assignments geared towards the learning of leadership that helps to enhance the potential for development.

*Coaching*: The provision of guidance and feedback about the specific knowledge, skills, and abilities necessary for task completion, job performance, and the handling of assignments.

*Coefficient of Linear Determination*: Also referred to as  $R^2$ , the coefficient of linear determination is the proportion of total variance that is explained by the regression model.

*Contingent Reward (CR)*: The extent to which followers perceive their leaders to be involved in constructive transactions with them, clarifying expectations and offering recognition when goals are achieved.

*Department Chairpersons*: Leaders below the level of administrators who supervise Department Members in fulfilling the daily tasks that keep an organization functioning.

*Department Chairperson's Identification Number (CHID)*: The identifying number that connects participating Department Members with their Department Chairpersons.

*Department Members*: All the persons in the unit, or group, or organization who are supervised by a Department Chairperson.

*Effectiveness (EFF)*: Raters' perceptions of the effectiveness of their leaders at interacting at different levels of the organization, meeting the job-related needs of others, representing their group to higher authority, meeting organizational requirements, and leading a group that is effective.

*E-mentoring Programs*: Virtual mentoring programs using the web, computers, virtual classrooms, distance learning, and/or digital collaboration, and which have become the new form of mentoring in the 21<sup>st</sup> century.

*Extra Effort (EE)*: The frequency with which raters perceive their leaders to motivate them to do more than they expected to do, thus heightening their desire to succeed, and increasing their willingness to try harder.

*Formal Leadership Training (FLTR)*: The level of leadership education acquired and certified through educational institutions by the leader prior to, or during the period of his or her appointment as a Department Chairperson.

*Idealized-Influence Attributed (II-A)*: The extent to which followers perceive their leaders to be charismatic, confident, powerful, and focused on higher order ideals and ethics.

*Idealized-Influence Behavior (II-B)*: The extent to which followers perceive that the charismatic actions of their leaders focus on values, beliefs, and a sense of mission.

*Individualized Consideration (IC)*: The extent to which followers perceive their leaders to be focused on understanding their needs, and to be working continuously on getting them—the followers—to develop to their full potential.

*Informal Leadership Training (ILTR)*: The sum of the number of leadership exposures (such as none, experience, challenging assignments, modeling by superiors, job rotation, coaching, mentoring, *e*-mentoring programs, personal development, counseling, and any other specified exposures) not acquired and certified through educational institutions, and received prior to, or during the period of the appointment of the leader as a Department Chairperson.

*Inspirational Motivation (IM)*: The extent to which followers believe that their leaders possess the energy, initiative, persistence, and a vision that move them to achieve performance outcomes that exceed expectations, as well as develop their leadership potential.

*Intellectual Stimulation (IS)*: The extent to which followers believe that their leaders possess the ability to stimulate them to be innovative and creative, to get them to question the tried ways of problem-solving, to encourage them to examine problems from different angles, and to involve them in the decision-making process within their organizations.

*Job Rotation*: An accepted, time-tested developmental program used by business, industry, and the military, whereby managers and management trainees are rotated through a set of job assignments, each held from periods ranging from 6 months to several years, and intended to prepare potential leaders to fill positions within the organization.

*Laissez-Faire Leadership (LF)*: The degree to which followers perceive their leaders to be reactive, taking corrective action only after problems have become serious, and often avoiding making any decisions at all.

*Leader Attributes*: The four leader attributes, namely, instilling pride in others for being associated with the leader, going beyond self-interest for the good of the group, acting in ways that build the respect of others for the leader, and displaying a sense of power and confidence,



that are evident in Transformational Leadership, and that have been identified as Idealized-Influence Attributed.

*Leader Behaviors:* The full range of leadership behaviors (with the exception of Idealized-Influence Attributed) that span the Transformational, Transactional, and Passive/Avoidant styles of leadership. They are Idealized-Influence Behavior, Inspirational Motivation, Intellectual Stimulation, Individualized Consideration (Transformational Behaviors); Contingent Reward, Management-by-Exception Active (Transactional Behaviors); and Management-by-Exception Passive, and Laissez-Faire Leadership (Passive/Avoidant Behaviors).

*Leader Code (LCOD):* The identifying number that represents the department to which each participating Department Chairperson and Department Member being studied is connected.

*Leader Gender (LGEN):* An indication of whether or not the leader is female or male.

*Leadership:* A process whereby an individual influences a group of individuals to achieve a common goal.

*Leadership Counseling:* A superior organizational citizenship approach to leadership development whereby the influencing of the careers of leaders within the organization is done within individual and group sessions by professional consultants, advisors, human resources staff, and sponsors, who may or may not be coaches or mentors.

*Leadership Opportunities:* Prospects for being assigned to positions of leadership.

*Management-by-Exception Active (MBE-A):* The extent to which followers perceive their leaders to be focused on monitoring and controlling them through forced compliance with rules and regulations and expectations for meeting performance standards and behavioral norms.

*Management-by-Exception Passive (MBE-P):* The degree to which leaders are perceived by followers to display passive and reactive modes of behavior that do not respond to situations and problems systematically, and avoid specifying agreements, clarifying expectations, and providing goals and standards to be attained by followers.

*Mentoring*: The process of advising and guiding on matters related to education, relationships, and career development.

*Modeling*: The act of being an exemplar for others to follow.

*Nested Data*: Hierarchical data structures in which individuals or groups within an organization are units within given levels, in which variables are measured at each level, in which each level is represented by its own sub-model which expresses the relationships within that level, and in which relationships between each level are measurable.

*Participant's Identification Number (ID)*: The number used to identify each questionnaire collected from participating Department Chairpersons and Department Members being studied.

*Passive/Avoidant Leadership*: The degree to which leaders are perceived to display the characteristics of Management-by-Exception Passive and Laissez-Faire Leadership, both considered to be non-Transactional behaviors.

*Personal Development*: Becoming involved in meaningful self-reflection, self-disclosure, self-direction, self-reliance, relationships, and personal skill development in an effort to enhance one's personal contributions to the work environment.

*Personal Variables*: The four selected distinguishing personal characteristics—Leader Gender, Formal Leadership Training, Informal Leadership Training, and Years of Service as an Educator—of each of the Department Chairpersons being studied.

*Quantitative Research*: The mode of testing objective theories by using the philosophical assumptions of post-positivist knowledge to examine the relationships among variables which may be measured using surveys and experiments employing closed-ended questions that provide numeric data that are analyzed using statistical procedures and hypothesis testing.

*Satisfaction (SAT)*: The extent to which raters are satisfied with their leaders' methods of working with others.

*Transactional Leadership*: The extent to which leaders are perceived to be able to work towards providing a sense of direction while recognizing and clarifying the roles and tasks

required of followers for the achievement of desired outcomes, and to be relating the needs and desires of followers to expected rewards when desired outcomes are achieved, thereby motivating and energizing them to exert the effort necessary for goal achievement.

*Transformational Leadership*: The degree to which followers perceive their leaders to be proactive, to possess the capacity to influence and change the awareness of their associates regarding what is important, and to move them to see themselves and the opportunities and challenges of their environment in new ways that seek to optimize individual, group, and organizational development and innovation while not merely achieving performance expectations, thereby striving for higher levels of potential as well as higher moral and ethical standards.

*University Name (UNAM)*: The name of the institution in which Department Chairpersons and Department Members are being studied.

*Years of Service as an Educator (LYOS)*: The number of years for which the leader has been working as an educator.

### **General Methodology**

The population used was the Department Members and Department Chairpersons in selected universities in the island of Jamaica. These universities are: the Mico University College, the Northern Caribbean University, the University of Technology, and the University of the West Indies, which were selected because they all fit four important criteria—that each institution should have been in existence for more than 50 years, that each should have a minimum of 10 departments or entities, that the department or entity selected should have at least three Department Members other than the Department Chairperson being rated, and that both Department Chairpersons and Department Members should have worked together for at least one term or semester. These criteria helped to ensure that reliable data that were viable for analysis using the Hierarchical Linear Model (HLM), the method of statistical analysis selected for this research, were collected from institutions of higher education that had endured the changing

economic, political, social, and other vicissitudes of life, and that had continued to contribute to academia locally and internationally in our geographically small island nation.

It is the supervisors of the departments within the colleges, faculties, or schools of these selected universities who are referred to as Department Chairpersons; and it is the persons supervised by them in each of these departments who are referred to as Department Members. The Department Chairpersons provided demographic information about themselves, and were evaluated by their Department Members.

One of the set of instruments from the MLQ, the Multifactor Leadership Questionnaire (MLQ) Rater Form (5X-Short), developed by Avolio and Bass (1995) and adjusted over the years; and one researcher-developed demographic questionnaire, the Leader Attributes and Behaviors Demographic Information (LABDI) Leader Form, were used. The MLQ Rater Form (5X-Short) was distributed to each Department Member who qualified to participate in the study in each of the selected universities, and the LABDI Leader Form was distributed to each Department Chairperson who qualified to participate in the study in each of the selected universities. By responding to the questionnaires, the Department Chairpersons provided demographic data about themselves, and the Department Members described their perceptions of the Department Chairperson by whom they are supervised (Appendix E).

### **Assumptions**

Assumptions in this research included the expectation that each university would include Department Chairpersons and Department Members who served at local off-site campuses and who qualified to participate in the research; and that in departments where there are more than three Department Members—the minimum number required for the participation of a department—that all Department Members who qualified would be allowed the opportunity to participate.

### **Limitations of the Study**

There were three major limitations to this study. The first limitation was that the use of the HLM as the principal method of statistical analysis indicated that analyses would have been done at the levels of the Department Members, the Department Chairpersons, and the institutions. However, because of the relatively small number of institutions being studied, analyses were focused only on levels one and two, that is, the levels of the Department Members and Department Chairpersons.

The second of the three major limitations to this study was the fact that each educational institution, with its own unique academic calendar and programs, may not have had all of its Department Members and Chairpersons available simultaneously across the entire calendar year, thus potentially impeding the timely collection of data.

The third of the three major limitations to the study was that the differences in situations under which each individual or group did the appropriate questionnaires varied based on their availability, and therefore did not permit each category to be privy to exactly the same degree of guidance and instructions for the completion of the questionnaires.

While the potential amelioration of the first limitation was dictated primarily by the findings of research, an effort was made to ameliorate the second and third limitations by collecting the data from all of the institutions within as close a time span as possible, and by providing precisely written instructions, respectively.

### **Delimitations of the Study**

This research was delimited to include only the selected Jamaican universities, to the exclusion of the other tertiary institutions, since these universities are the primary local institutions that prepare individuals who become tertiary educators. Additionally, within these universities, leaders at the high end of the administrative structure were excluded and Department Chairpersons selected, primarily because the number of top administrators and their direct

subordinates in the universities being studied are too few to produce a viable sample size, and using that group would have necessitated the inclusion of numerous institutions that would have made the cost of completing this research prohibitive. This would have proven not only to be a very costly undertaking, but would also have been an extremely time-consuming venture. These delimitations were necessary primarily to control cost, while maintaining the largest possible sample size, thus helping to ensure the validity of the research.

### **Summary**

The critical importance of the leader to the outcomes of leadership in organizational and institutional settings implies the dire necessity of an intentional approach to leader identification, selection, and preparation. These are important for the purposes of securing the best possible leadership talent, for developing latent leadership skills and talents possessed by leaders and potential leaders, as well as for the acquisition and honing of those skills which may be taught and nurtured. Bernard M. Bass, among others, has postulated that there are numerous personal qualities and abilities that are prerequisites to the achievement of the positive outcomes of leadership that have been identified as a result of using the MLQ Rater Form (5X-Short) to test the variables in his Full-Range Leadership Model. This will greatly assist in the enhancement of the quality of leadership preparation that is made available to practitioners and potential practitioners in the educational arena and beyond.

### **Organization of the Study**

Chapter 1 serves to introduce the study by stating the imperative of leadership, introducing the concept of organizational leadership, providing the background to the problem, presenting a statement of the problem, affirming the purpose of the study, posing the three research questions and hypotheses, supplying the theoretical framework, identifying the significance of the study, defining the significant terms used in this study, outlining the general

methodology, identifying the assumptions, noting the limitations and delimitations, giving a brief summary of the chapter, and outlining the organization of the study.

Chapter 2 provides a review of the related literature regarding the personal, independent, and dependent variables being tested in relation to the leader attributes and behaviors, and outcomes of leadership of Department Chairpersons as perceived by Department Members in the selected Jamaican universities that were studied.

Chapter 3 discusses the research methodology, the design, the population and sample, and the questionnaires used, in addition to the justification of the use of the quantitative approach and the Hierarchical Linear Model in this study. An explanation of the primary formulae used in the process of data analysis is also included.

Chapter 4 deals with the analysis of the findings of the study, and provides tabulated statistical data, along with relevant explanations.

Chapter 5 summarizes the study, analyzes the research questions in light of the findings, and arrives at conclusions. Implications for practice and recommendations for further research are also highlighted.

## CHAPTER II

### REVIEW OF LITERATURE

#### **Introduction**

The concept of leadership has been a consistent fixture in the lives of human beings from the beginning of time. To this end, Safferstone (2005) has indicated this sentiment in the words, “The need for leaders and leadership is a perennial subject that traces its beginnings in the Old Testament, ancient China, and 16<sup>th</sup>-century Italy” (p. 620). As the concept of leadership continues to evolve,

numerous contemporary authors have crystallized definitions of leadership, identified the need for leadership in modern organizations, documented the positive impact of effective leadership on organizational performance, and proposed leadership models and leadership development strategies. (Ardichvili & Manderscheid, 2008, p. 620)

Leader behavior has therefore been of optimal importance, as behaviors naturally influence outcomes except in instances when unexplained phenomena intervene to impact this natural law of life. The early studies on leader behavior presupposed that there were two major influences that determined outcome—one concerned with people, interpersonal relations, and group maintenance, and the other with production, task completion, and goal-achievement (Cartwright & Zander, 1998). These findings were also supported by other studies (Avolio & Yammarino, 2002; Hoy & Miskel, 2005; Hughes et al., 2009; Yukl, 2002).

The review of the literature related to the research topic will examine definitions of leadership and provide the definition being used in this research; deal with the development of leadership theories, and more specifically, with the theories of Passive/Avoidant, Transactional, and Transformational Leadership, and with their inter-relationships in the process of leadership.



## **Leadership Defined**

Leadership has many different meanings, determined by any of the over 65 different classification systems developed to provide a definition for the varying dimensions of leadership (Fleishman et al., 1991), and “rests on one’s ontological commitments” (Fairhurst, 2007, p. 4), that is, one’s basic beliefs about the nature of existence. Among these definitions is one proposed by Bass (2008), in which he suggests that some definitions view leadership as the “focus of group processes” (pp. 11-20), and as such, designates the leader with the responsibilities of group change and activity, while empowering such an individual to represent the will of the group. Other definitions perceive leadership from the personality perspective, as an act or behavior, in terms of the power relationship, as an instrument of goal achievement, and from a skills perspective (Bass & Riggio, 2006; Hughes et al., 2009; Yukl, 2002).

Despite the existence of these numerous concepts of leadership, four elements have been accepted as being integral to leadership. These are that leadership is a process, that leadership involves influence, that leadership occurs within the context of a group, and that leadership involves goal attainment. The resultant definition, “Leadership is a process whereby an individual influences a group of individuals to achieve a common goal” (Northouse, 2010, p. 3), is the one that has been employed in this research.

## **The Development of Leadership Theories**

The study of leadership can be traced to notable historical figures such as Plato (1955/2007), Sun Tzu (2010), and Machiavelli (2008), but it has only been subject to widespread attention for the past 60 years. Over these years, many changes have taken place in the area of leadership, leading to the development of theories that build on the practices and findings of previous research. These views will be succinctly presented to highlight some of the major developments in this area of study.

## Concepts and Theories of Leadership

From the beginning of recorded history, there have been indications that leadership of some kind has existed among human beings, with definitions as many and as varied as the number of persons who have proffered such definitions (Bass, 2008, pp. 4, 11). In earlier times, words that meant “head of state,” “military commander,” “princeps,” “proconsul,” “chief,” or “king,” were those predominantly used in societies to distinguish between the ruler and the head of state. It was in the nations with an Anglo-Saxon heritage in which there began a distinction between the headship of those who had achieved their status by “inheritance, usurpation, or appointment, and “leaders.” Bass (2008) has indicated that although the word “leader” was noted by the *Oxford English Dictionary* (1933) to have appeared in the English language as early as 1300, “the word ‘leadership’ did not appear until the first half of the nineteenth century, in writings about the political influence and control of the British Parliament” (p. 15). This word did not appear in most other languages until recent times.

Leadership has been seen as fulfilling various roles. It has been seen as a focus of group processes, personality and its effects, the art of inducing compliance, the exercise of influence, an act or behavior, a form of persuasion, a power relation, an instrument of goal achievement, an emerging effect of interaction, a differentiated role, the initiation of structure, and a combination of these elements. Its distinction from “headship” has also been made, with “headship” being an imposition on the group, and “leadership” being accorded by the group. This definition has been substantiated by the definitions of Gibb (1969), Holloman (1968, 1986), and Kochan, Schmidt, and de Cotiis (1975). Whatever the definition accepted, it is understood that the concept of “leadership” is an ever evolving one, and that research should be designed to examine the spectrum so that meaningful conclusions may be drawn.

Various typologies and taxonomies of leadership have been developed. Among them are numerous classifications, including leaders of crowds; educational and student leaders; public leaders, such as statesmen, politicians, and influentials; women leaders; socio-psychological

classifications; psychoanalytic taxonomies; personality types; organizational and institutional leaders; typologies of leaders by their functions, roles, and behaviors; and organizational leadership. Commonalities have been identified in these taxonomies despite the multiplicity that exists, and an integrated model, summarized and integrated by Mumford, Fleishman, Levin, Korotin, and Hein (1988, as cited in Bass, 2008), includes:

(1) The search for and structuring of information (acquisition, organization, evaluation, feedback, and control), (2) the use of information in problem-solving (identifying requirements, planning, coordinating, and communicating), (3) managing personnel resources (acquisition, allocation, development, motivation, utilization, and monitoring), and (4) managing material resources (acquisition, maintenance, utilization, and monitoring. (p. 44)

The many theories and models of leadership that have evolved can be placed in numerous categories. There are personal and situational theories that include ‘Great-Man’, Trait, Situational, Personal-Situational, and Psychoanalytic Theories; as well as Political and Humanistic Theories, which serve only to broadly categorize and summarize the wide spectrum of existing concepts, groups, and models. Interaction and Social Learning Theories include the Leader-Role Theory, Theories of the Attainment of the Leadership Role, Reinforced-Change Theory, Path-Goal Theory, and Contingency Theory. Theories and Models of Interactive Processes include the Multi-Linkage Model, the Multiple-Screen Model, Vertical-Dyad Linkage, Exchange Theories, Behavioral Theories, and Communication Theories. Perceptual and Cognitive Theories include Attribution Theories, Information Processing, Open-Systems Analysis, and the Rational-Deductive Approach, and numerous hybrid explanations, the most popular of which is Transformational Leadership.

Among the major proponents of this popular hybrid that emerged from Transactional Leadership, the view that leadership was contingent on a “transaction or exchange between the leader and the led” (Hollander, 1986, p. 50), were Avolio, Barnard, Bass, Bennis, Bradford, Burns, Cohen, Devanna, Downton, Freud, Gilbert, Hater, Kuhnert, Numerof, Russell, Seltzer, Stodgill, Tichy, Waldman, and Yammarino. As a direct result of the emergence of the theory of

Transformational Leadership, many methods and measurements of leadership have evolved, and empirical research in this area began with studies of the personal factors that contribute to the emergence and success of a leader (Bass, 2008).

The development of this broad spectrum of leadership theories, many of which were too narrow to effectively manage the realities of leading in a dynamic world, led many theorists, including Bernard M. Bass, to work towards identifying the elements of each of the major theories that could be cohesively combined to provide a more pragmatic and comprehensive approach to leadership. It is, therefore, important that the contributions of the major leadership theories included in Bass's Full-Range Leadership Theory be examined.

#### A Comparison of Passive/Avoidant, Transactional, and Transformational Leadership

The development of the theory of Transformational Leadership can be linked to two seminal works, the Pulitzer Prize-winning book, *Leadership*, by James McGregor Burns (1978); and an article, "A 1976 Theory of Charismatic Leadership," by Robert J. House (1976). The impact of these works on Bernard Bass led to the writing of his book, *Leadership and Performance Beyond Expectations*, which served as a precursor to the development of the Transformational (and Charismatic) Leadership Theory.

Research in the area of Transformational Leadership—significantly influenced by the work of Burns (1978)—has increased exponentially over the past 30 years by a record of more than 300 studies done using the MLQ Rater Form (5X-Short) developed by Avolio and Bass in 1985 and revised in 1997, and by more than 150 studies done using the Leadership Practices Inventory (LPI) developed by Kouzes and Posner in 1988. Most of the research on Transformational, and on Charismatic Leadership—a noted quality of the Transformational Leader—has been done on leader behavior and its relationship to follower motivation and performance. Designed to test either one or the other of these leadership theories, many of these studies may be used to evaluate more than one of these theories. Among the types of research

done are the survey, laboratory experiments, field experiments, descriptive and comparative studies, and intensive case studies (Yukl, 2002).

Three major findings of these studies have been identified. The first of these findings is that Transformational Leadership has been identified to be in existence in all countries, institutions, and organizational levels, but is more prevalent in public institutions, and at lower organizational levels. The second of these findings is that there is also unquestionable evidence that Transformational Leadership has the capacity to predict organizational development more efficiently than do Transactional and Passive/Avoidant Leadership, and that organizations which were Transactional in nature should move towards developing qualities that were more Transformational within their cultures, while maintaining a base consisting of Transactional qualities. The third of these findings is that Passive/Avoidant Leadership was negatively correlated with Effectiveness.

Ardichvili and Manderscheid (2008) speak to the differences between leaders who display the qualities associated with Transformational, Transactional, and Passive/Avoidant Leadership. They suggest that while Passive/Avoidant Leadership is impoverished, attempting to leave workers to their own devices; that Transactional Leadership encourages the activity or inactivity of workers based on the execution of an efficient token economy by the leader; and that Transformational Leadership is characterized by the development of such meaningful relationships between leaders and followers. These relationships, they contend, are so influential that followers are compelled—not by force—but by responding to the influence of leadership that helps them to see deeper purposes in their work, and that treats them as unique and valuable individuals even while they are being infused with organizational goals and beliefs, as well as with the values and vision that the leader would like the organization to achieve. This framework has been validated by a significant body of research (Bass, 1998), and the model is being used in leadership training programs with great success (Avolio, 2005; Avolio & Gardner, 2005).

With the overwhelming findings that Transformational Leaders are more effective at motivating their followers to achieve higher levels of organizational change due to their positive impact on the followers, studies are now being conducted to determine whether or not it is possible to teach individuals to develop the attributes and behaviors of the Transformational Theory of Leadership. Although findings have been inconclusive, additional approaches, including the selection of individuals with the natural ability to be Transformational, are being empirically studied.

This has led to studies in the importance of childhood experiences, leadership traits, and inherited tendencies in the matter of Transformational Leadership. Researchers such as Zacharatos, Barling, and Kelloway (2000) have indicated that children who were perceived by others to be Transformational usually had parents with these tendencies also. Others such as Antonakis and House; Hogan, Curphy, and Hogan; Nilsen; House, Spangler, and Woycke; House, Woycke, and Fodor; Judge and Bono; and Ross and Offerman, have all indicated that specific traits identified in the Five Factor Model (FFM) were all predictors of Transformational Leadership (Hughes et al., 2009). Despite these evidences of the possibility that Transformational Leaders may be trained, the reality is that the quality of Charisma, an important factor in the pursuits of Transformational Leaders, is a perceived quality that cannot be forced on followers.

Of particular importance at this time is the ever-growing interest that has been generated in the pursuit of empirical research in the areas of Transformational and Transactional Leadership which has assisted in the process of arriving at an understanding of the leaders, followers, and situational variables of Transformational and Charismatic Leaders. Also worthy of note is the perception that this type of research is a reflection of human preferences since measures of evaluation—including the MLQ Rater Form (5X-Short)—seem to be more reflective of socially accepted leader attributes and behaviors than it is of an identification of specific skills that are perceived to be needed by leaders (Hughes et al., 2009).

Bass (1985), a major proponent of Transformational Leadership, has argued that this style of leadership is augmented by the effects of Transactional Leadership, despite the opposing views of Burns (1978), who posits that Transformational and Transactional Leadership are at opposite ends of the gamut of leadership styles (Bass, 2008). Despite the multiplicity of contingent findings, the augmentation effect has been reported to be a positive predictor of the outcomes of leadership—Extra Effort, Effectiveness, and Satisfaction (Bass, 2008; Bass & Riggio, 2006; Northouse, 2010; Sosik & Jung, 2010). This augmentation effect of Transformational Leadership proposed by Bass (1985) to counter the views of Burns (1978), that Transformational and Transactional Leadership were diametrically opposed to each other, suggests that the needs and desires of the individual to achieve more, to work harder, and to strive for the highest levels of performance are increased by Transformational Leadership (Avolio & Bass, 2004). Antonakis and House (2002) found that although a variety of variables such as the gender of the leaders and followers, the risk and stability of conditions, and the hierarchical level of the leader affected results, the model of the full range of leadership remained unscathed. Their research findings have given credence to the view that the best leaders have been described as those who integrate highly task-oriented approaches with the commensurate relations-oriented approaches. It is this augmentation that has led to the development of the Full-Range Leadership Model which supports the Full-Range Leadership Theory on which this study is based.

#### A Critique of the Theory of Transformational Leadership

Having examined the strengths of the Theory of Transformational Leadership in relation to its counterparts, it is prudent that its weaknesses be identified, to avoid the pitfall of promoting this theory as a panacea for all the ills of our existing multi-faceted leadership situations.

The Theory of Transformational Leadership purports that this model is more effective at inspiring followers to achieve change in their organizations than do others (Hughes et al., 2009) because their followers are usually more intrinsically motivated by their charismatic leader to

become personally involved in any process of change that will be to their benefit, and because it helps leaders and organizations to understand the dynamics between leaders and followers that may be harnessed in the interest of the growth of the organization.

Although these and other accolades have been given regarding the efficacy of this theory, numerous weaknesses have been identified. While employment of this leadership style often ensures that much change may be accomplished, this does not often tend towards the improvement of the institution, as the change that Transformational Leaders may posit may be manufactured in an effort to gain popularity. Additionally, the change is not often lasting, and may, in the long run, hinder the progress of the organization if the vision were not one that was genuinely needed. Additionally, Beyer (1999), Bryman (1993), and Yukl (1999), suggest that there are conceptual weaknesses inherent in these perceived “new” theories. These, they suggest, include, but are not limited to, “ambiguous constructs, insufficient description of explanatory processes, a narrow focus on dyadic processes, omission of some relevant behaviors, insufficient specification of situational variables, and a bias toward heroic conceptions of leadership” (Yukl, 2002, p. 262).

The first of the three weaknesses identified is that most of the theories of Transformational Leadership lack specification of the underlying processes of influence. Although its counterpart, Charismatic Leadership, provides the most detailed explanation available, it is still inadequate, and there is a need to explain the reciprocal relationships that occur between both leader and followers.

The second of the three weaknesses is that most of the theories focus too narrowly on the dyadic processes. While the influence of the leader on the follower is an important dynamic in Transformational leadership, explanations regarding the processes used by leaders to enhance mutual trust and cooperation, identification with the team, collective self-efficacy, and team learning would be more beneficial to the process of theory-building than a mere presentation of the approaches used by leaders to enhance team building. There is also insufficient information



about the external roles of the leader such as their representation of a team or organization; and their assistance in the securing of resources, members, and political support. There is also the need for the presentation of a more detailed description of the processes involved in change-oriented leadership at both the group and organizational levels.

The final weakness identified is that there is the need for attention to the situational variables that determine the occurrence and effectiveness of Transformational Leadership, and that while some progress has been made to address the issue, there is the need for more empirical research in this area (Beyer, 1999; Bryman, 1993; Yukl, 1999; Yukl, 2002).

A further critique of this theory is the view stated by Beyer, Yukl, and Antonakis and House, that proponents of this theory tend to ignore the usefulness of elements of all other theories, and subtly suggest that “there is only one way to be an effective leader, and that is by demonstrating transformational skills” (Hughes et al., 2009, p. 652). This view of exclusivity will impact negatively on the theory, as there has been an acceptance of the fact that varying leadership situations need to be managed for effectiveness, using differing approaches.

Despite the stated disadvantages, this theory of Transformational Leadership is one that will aid organizational leaders to drive desired organizational change (Deluga, 1988). While it is clear that the Transformational Leader seems to elicit more participation and worker motivation in institutions and organizations, there is the potential for abuse, probably more so than the other theories of leadership. This is evidenced in the wide range of world-renowned leaders to whom this title of Transformational Leader has been ascribed, and to leadership situations that have been fraught with abuse in the name of transformation.

With this evidence that even the best theories may be manipulated by the individuals who are empowered to use them, the critical importance of the personal attributes of leaders cannot be overlooked.

## Personal Attributes of Leaders

The matter of the personal attributes of leaders is one that has consistently been the subject of discussion, debate, and research. Various studies were conducted on this subject between 1904 and 1947, followed by later improvements in methods and measurements. A resulting factor analysis of both sets of results revealed that although there were some differences in the findings, possibly due to the increased number of studies done on adults in the workplace in the 1970 survey, compared to more studies done with children and social groups in the 1948 survey, the major results were strikingly similar. This made it possible to infer that personality traits function to distinguish between leaders and followers, the successful and unsuccessful, and high- and low-level leaders. Numerous factors, classified under six general headings—capacity, achievement, responsibility, participation, status, and situation—were identified as follows:

*Capacity* (intelligence, alertness, verbal facility, originality, and judgment); *Achievement* (scholarship, knowledge, and athletic accomplishments); *Responsibility* (dependability, initiative, persistence, aggressiveness, self-confidence, and the desire to excel); *Participation* (activity, sociability, cooperation, adaptability, and humor); *Status* (socioeconomic position and popularity); *Situation* (mental level, status, skills, needs and interests of followers, objectives to be achieved, and so on. (Bass, 2008, p. 95)

Some researchers have made a clear distinction between the leader and the figurehead, and noted that the concept of leadership is one that is associated with the attainment of the goals and objectives of the group being led. The findings of trait research suggest that

leadership is not a matter of passive status or of the mere combination of traits. Rather, leadership appears to be a working relationship among members of a group, in which the leader acquires status through active participation and demonstration of his or her capacity to carry cooperative tasks to completion. Significant aspects of this capacity for organizing and expediting to cooperative efforts appear to be intelligence, alertness to the needs of others, and insight into situations, further reinforced by such habits as responsibility, initiative, persistence, and self-confidence. (Bass, 2008, p. 96)

Leadership has also been associated with activity level, task competence, inter-personal competence, authoritarianism, power orientation, and Machiavellianism; as well as with values, needs, well-being, accorded status, esteem, and charisma. All of these factors are related to the success or failure of the leader.

## **The Impact of Major Leadership Theories on the Full-Range Leadership Theory**

Although the concept of leadership has been with human beings since the beginning of time, there has been an overwhelming preoccupation with its development since the early 20<sup>th</sup> century. During this period, eight major Leadership Theories, spanning a multiplicity of leadership styles, have evolved. These eight theories are the ‘Great Man,’ Trait, Contingency, Situational, Behavioral, Participative, Management, and Relationship Theories (Van Wagner, 2009).

Of all the theories of leadership, the Relationship or Transformational Model seems to “contribute in an incremental way to extra effort, effectiveness, and satisfaction with the leader as well as to appraised subordinate performance beyond expectations that are attributable to transactional leadership” (Bass, 1985, p. 229), or to any of the other individual theories. According to Avolio and Bass (2004), Northouse (2010), and Sosik and Jung (2010), many of these theories, along with their various permutations, have contributed to the development of the Full-Range Leadership Theory.

While inherited tendencies, and personality traits such as intelligence, self-confidence, determination, integrity, and sociability—propounded by the supporters of the Trait Theories, and such as are found in great leaders—are not considered in the development of the Full-Range Leadership Theory, these qualities have been linked by research to the positive, adaptive, active, and developmental leader traits that support social influence processes for most effective leaders (Bass, 2008; Judge et al., 2002; Kirkpatrick & Locke, 1991).

Although major concepts of the Psychodynamic Theories such as self-concept, ego states, and personality issues that undergird the parent-child relationship existing between the leader and the follower are not considered in the development of the Full-Range Leadership Theory, prior leadership experience and the skills developed by leaders and followers in the process of

achieving self-awareness are qualities assigned to those who are the most effective leaders (Kets de Vries, 1994; Zaleznik, 2004).

The Skills Theories indicate that emotional awareness and control are essential to effective leadership (Goleman, 1995); and that problem-solving, social skills, and knowledge predict leadership effectiveness (Mumford et al., 2000). Both of these concepts are integral to the development of the Full-Range Leadership Theory, since the emotional connection between the leader and follower, as well as their intellectual acuity is required within successful leadership situations.

The Style Theories, which emphasize the importance of the skills of task-orientation and inter-personal relationships that greatly influence the performance and satisfaction of followers, are integrally related to the development of the Full-Range Leadership Theory, as these are behaviors of leaders who are perceived to be most effective (Cartwright & Zander, 1998; Stogdill, 1963).

The Situational Leadership-Oriented Theories, which hold that the appropriate leader behavior of directing, coaching, supporting, or delegating is determined by the degree of competence and confidence of the followers, are critical to the development of the Full-Range Leadership Theory, as these leader behaviors that are universal across many situations and cultures allow effective leaders to be either directive or participative (Blanchard et al., 1985).

The Contingency Theories match leaders to the appropriate situation depending upon task/relationship orientation, relationships with followers, task structure, and position power. The development of the Full-Range Leadership Theory has greatly benefited from these important behaviors of effective leaders, as some situations may require the display of more task-oriented leadership skills, while others may require more development-oriented leadership behaviors (Fielder, 1967).

The Path-Goal Theories have contributed to the development of the Full-Range Leadership Theory in a marked way. The ability of the leader to select the appropriate

intervention of either directive-, supportive-, participative-, or achievement-oriented behavior, after having considered the tasks and follower characteristics, is critical to the clarification of expectations, the charting of a path for followers, the raising of self- and collective-efficacy, and because most effective leaders may be both directive and participative (House & Mitchell, 1974).

The Leader-Member Exchange Theories (LMX), in which the quality of the leader-follower dyad determines in-group and out-group behavior as well as effectiveness, have contributed to the development of the Full-Range Leadership Theory, as the most effective leaders are known to provide individualized attention to their followers, providing them with coaching, mentoring, and variety (Graen & Uhl-Bien, 1995).

The Authentic Leadership Theories, with their key concepts being positive psychological states, organizational contexts, and self-development, promote positive outcomes that have contributed to the development of the Full-Range Leadership Theory, since those leaders who are adjudged to be the most effective are true to themselves and others, self-aware, positive, and development-oriented (Avolio, Gardner, Walumbwa, Luthans, & May, 2004).

The contributions of the leadership theories to the development of Bass's Full-Range Leadership Model cannot be overestimated, as, in addition to its contribution to the process of model-building, these considerations have helped to lay the foundation for the creation of the Multifactor Leadership Questionnaire (MLQ) Rater Form (5X-Short), used as the major instrument in this research.

### **Relevant Research**

Among the relevant research on the subject of leadership are seminal studies on leadership, other findings of leadership research, and findings of Jamaican leadership studies.

#### **Seminal Studies on Leadership**

Seminal studies in the field of leadership have been pioneered by researchers in the Ohio State Leadership Studies which began in the 1950s and focused on the ways in which leaders

could meet the common needs of group members (Shartle, 1979). According to Yukl (2002), research that was conducted in the military as well as among civilians—by having subordinates complete the Leader Behavior Description Questionnaire (LBDQ), and by having leaders complete the Supervisor Behavior Description Questionnaire (SBDQ), initially developed by John K. Hemphill and Alvin Koons, and further refined by Andrew Halpin and B. J. Winer—produced results that are similar to those of current research. Findings indicated that Initiating Structure and Consideration were the two most important dimensions of leadership, that these qualities were independent of each other, and that they could be measured as being either “high” or “low.”

The Michigan Leadership Studies which followed, also began in the 1950s, and were conducted by researchers at the University of Michigan as field studies among leaders, including middle managers in an insurance company, in a large manufacturing company, and among railroad workers. These studies, which focused on the relationships between leader behavior, group processes, and measures of group performance, found that leaders could be either “employee centered” or “job centered,” and identified three important characteristics of effective leaders to be task-oriented behavior, relationship-oriented behavior, and participative-leadership behavior (Yukl, 2002).

Other landmark studies include those done by Douglas McGregor during the 1960s as he developed Theory X and Theory Y, describing employee motivation. McGregor suggests that Theory X assumes that people are passive and resistant to organizational concerns, and consequently need to be directed and motivated by leadership to achieve organizational goals. To the contrary, Theory Y assumes that workers are motivated and desire responsibility, hence organizational activities should be so arranged that the organizational goals of these enthusiastic employees may be achieved while they work towards the achievement of their personal goals. The theories—both of which rest on the premise that the role of management is to organize the

factors of production, including human resources, for the economic benefit of the organization—are divergent.

Findings from these seminal works have led to the overwhelming proliferation of leadership theories, models, and works, including a Leadership Grid by Blake and McCauley, who used the responses to a leadership questionnaire to categorize leaders based on their concern for both results and people (Hoy & Miskel, 2005; Hughes et al., 2009; Yukl, 2002). These notables are among those responsible for documenting and promulgating the findings of the leadership research that now serve as the foundation of present leadership research and scholarship.

#### Other Findings of Leadership Research

The MLQ Rater Form (5X-Short) has been used in various studies to examine the relationship between Transformational and Transactional Leadership and the three outcomes of leadership—Extra Effort, Effectiveness, and Satisfaction. Srisilpsophon's (1999) study in the area of leadership concluded, as did others such as Avolio and Bass (1998), and Yammarino and Bass (1990), both cited in Bass (2008), that Laissez-Faire Leadership and Management-by-Exception Passive were negatively correlated with the outcomes of leadership. To the contrary, Transformational and Contingent Reward Leadership were found to be positively correlated to the three outcomes of leadership.

There is evidence that the MLQ Rater Form (5X-Short) has been used in the island of Jamaica in the field of education prior to this study, at least, by Horace Anthony Williams in his 2004 unpublished research entitled, *Relationship Between Perceived Leadership Style and Perceived Leadership Effectiveness in Selected Tertiary Institutions in Jamaica*, and in the field of business by Alston Albert Golding, in his 2003 unpublished research entitled, *An Examination of Bass' Full Range Leadership Model in Jamaican Organizations*. Based on the claims of Avolio and Bass (2004), that they have “seen a tremendous amount of consistency across raters,

regions and cultures in terms of support for the nine factor full range model,” the questionnaire was used without any adjustments.

Numerous other studies that have examined leadership style and its impact on the outcomes of leadership serve to corroborate the findings indicated. Among them is Grazier (1992), who, in commenting on the relationship between the degree of employee Extra Effort and Transformational Leadership, suggests that it lies in the level of motivation which creates inducements for workers to create excellence. Such a leader, he says, is able to inspire and encourage workers to consistently perform to the best of their abilities. The outcome of such an impact is usually the display of exceptional qualities that are the result of attitudes, skills, knowledge, talent, and creativity.

Both the Extra Effort and the Effectiveness of the follower were found to be positively predicted by Transformational Leadership. According to Bass (1985), an effective leader is one who develops a good rapport with followers, and is able to successfully influence them to maintain a focus to achieve goals. Bond (2007), along with DeGroot et al. (2000), and Singer (1985) have noted that the primary goal of effective leadership is to increase the positive results from subordinates and thus increase their effects on organizational outcomes; and that effectiveness, as well as satisfaction, was more highly correlated with Transformational Leadership than with Transactional Leadership.

Additionally, Bogler (2001) found that teachers' Satisfaction with leadership was significantly correlated with Transformational Leadership ( $r = 0.56, p < 0.0001$ ), while Transactional Leadership showed a negative correlation ( $r = -0.21, p = 0.0001$ ). This means that the satisfaction of teachers increases as they perceive a change in the leadership style of their principal from being less Transactional to being more Transformational. Smith (1982) found that persons whose leaders were Transformational were more self-assured, worked for longer hours, and rated their leaders as dynamic high performers, capable of encouraging them to higher standards of excellence.



These findings, which indicate that there are positive relationships existing between Transformational Leadership and the three outcomes of leadership identified in Bass's Full-Range Leadership Model, are of utmost importance to the field of education, as workers and students who are motivated to make extra effort, to be effective, and are consequently satisfied with the outcomes of leadership would serve to significantly enhance the quality of the education product.

#### Findings of Jamaican Leadership Studies

Findings of related leadership studies done in Jamaica by Nehemiah Mead (1976) entitled, *The Leadership Behavior of Jamaican High School Principals: Perceptions and Expectations of Teachers and Principals*; by Alston Albert Golding (2003) entitled, *An Examination of Bass' Full Range Leadership Model in Jamaican Organizations*; by Haldane Luther Johnson (2004) entitled, *Individual Perceptions of Leadership Attributes by Industrial Technology Teachers in Selected Public High and Technical High Schools in Jamaica*; and by Horace Alexander Williams (2004) entitled, *Relationship Between Perceived Leadership Style and Perceived Leadership Effectiveness in Selected Tertiary Institutions in Jamaica*, have revealed significant results that are congruent with those of other landmark studies.

#### **The Nehemiah Mead Study**

Mead (1976), whose research was done in the field of education, studied 16 school principals and 195 teachers, using the Leader Behavior Description Questionnaire (LBDQ) Real and Ideal Forms, in an effort to identify the perceptions and expectations related to Initiating Structure (by which principals establish lines of communication and methods of procedure) and Consideration (by which trust and friendship are established with their staff members). The results indicated that principals believed that they showed significantly greater Initiating Structure than the teachers acknowledged, that they should show significantly greater Initiating Structure and Consideration than their teachers thought necessary, and that their performance was

significantly lower than desirable; whereas teachers indicated that the performance of their principals was significantly lower than expected.

In summarizing the 21 recommendations of his study, Mead (1976) identified concerns that are of relevance to this research on leader attributes and behaviors conducted in selected Jamaican universities. The recommendations (pp. 90-95), succinctly summarized in the final paragraph of the abstract indicated below, indicate the need for interventions that would serve to ameliorate the situation. It reads:

Inasmuch as the teachers and principals themselves are not satisfied that the principals are meeting these expectations adequately, it is recommended that the Ministry of Education and the principals adopt policies and develop programs that will facilitate achievement of these expectations at higher levels of efficiency. (Abstract)

Additionally the fifth of seven implications identified for further study, “There is a need to determine the type of training necessary to produce a specific type of leader” (pp. 95-96), also has implications for this study, as it seems that little has been done after 36 years to address the concerns indicated in the Mead (1976) study.

### **The Alston Albert Golding Study**

Using the MLQ Rater Form (5X-Short), Golding (2003), in his work, studied 100 subordinates and 22 superiors across seven organizations. He indicated that the correlation results are similar to the Transformational Leadership Theory from the perspectives of both the subordinates and superiors. From the perspective of the subordinates, findings indicated that Idealized Influence and Contingent Reward were positively correlated, while Laissez-Faire Leadership was negatively correlated to the outcomes of leadership; and that from the perspective of the superiors, Individualized Consideration, Contingent Reward, and Management-by-Exception Passive were related to Satisfaction with leadership, while Contingent Reward was positively correlated to Extra Effort. (Abstract)

Although done in the field of business, this study done by Alston Albert Golding provides an indication of the universality of the MLQ Rater Form (5X-Short), as its findings generally match the outcomes identified by the proponents, Bruce J. Avolio and Bernard M. Bass.

### **The Haldane Luther Johnson Study**

Johnson's (2004) mixed methodology study of 103 teachers of Industrial Technology across 27 randomly selected public high- and technical high-schools in Jamaica, as well as training administrators, training personnel, and a professional association leaders, aimed at achieving two major goals: (a) To determine the leadership potential, along with the environmental and personal factors that influenced their growth and development as leaders, and (b) to determine the administrative and policy perspectives on leadership development programs, as well as the leadership potential, environmental, and personal factors that influenced their growth and development as leaders.

This study found that teachers with 0-10 years of teaching experience had significantly less leadership experience than those with 16-20 years of teaching experience, while there was no significant association between the demographic factors of Age Range, Qualification, College Industrial Experience, and School Type, and the perception of the respondents regarding Leadership Potential and Leadership Experience. There was a significant association between Attitude to Professional Development, Community Activity, and the personality factors (Surgency, Adjustment, Agreeableness, Conscientiousness, and Openness to Experience), with the respondents' perception of Leadership Potential. Attitude to Professional Development and Agreeableness were significantly associated with Leadership Potential and Leadership Experience. Education and training in management and administration were perceived to be most necessary for the attainment of positions of leadership in the area of Industrial Technology in the realm of education, while a concerted effort at providing coordinated programs of leadership development was recommended as the major solution to this problem. (Abstract)

### **The Horace Alexander Williams Study**

The study done by Williams (2004), using the *ex post facto* research design, has examined the cultural context that has influenced the leadership styles exhibited at varying levels within selected tertiary educational institutions in Jamaica. Using the MLQ Rater Form (5X-Short) to measure the independent variables of the Transformational, Transactional, and Laissez-Faire Leadership Styles, as well as the dependent variables of subordinates' perception of Leadership Effectiveness, the writer has sought to study the relationship between the perceived Leadership Style and perceived Leadership Effectiveness experienced by both leaders and subordinates. Results of this research, considered to be significantly valuable to the tertiary education system, indicate that subordinates perceive their leaders to be Transformational, and therefore effective in their respective institutions (Abstract).

Findings of leadership research done in the island of Jamaica, both within and without the discipline of education, have indicated that positive outcomes of leadership are necessary for goal achievement. The four studies identified are among the groundbreaking studies on leadership in the Jamaican landscape, and are consequently significant contributions to the scholarly collections in this Caribbean nation.

### **Situational Moderators**

The outcomes of leadership are also inextricably linked to the situations in which the process of leadership occurs. Situational moderators include leadership, environment, and organization; leaders and their immediate groups; leadership, their task and technology; stress and leadership; space, networks, leadership, and its substitutes; and persistence, transfer, and succession of leadership (Bass, 2008). This implies that within an educational institution of higher learning, there are personal and departmental variables that may positively or negatively predict the outcomes of leadership of those who are in such important positions.

The first situational moderator includes the leadership situations, the external leadership environment, organizational constraints, and organizational culture, which all impact the leadership, environment, and organization within an institution.

A second situational moderator relates to the leader and his immediate group. The formation and development of groups is an important goal in the accomplishment of most major assignments. The reciprocal and positive relationships between the leader and the group usually tend towards group drive and cohesiveness.

A third situational moderator involves leadership, task, and technology. The requirements of the task are often major indicators of whether or not a leader is required to fill a particular position, of who emerges as the leader if such an individual is required, of how the selected leader behaves, and of the consequent leader behaviors exhibited by the selected or emergent leader. These all serve to impact the approach to leadership taken, and are often explained by the Path-Goal Theory, which suggests the following:

To obtain the subordinate's effective performance and satisfaction, the leader must provide structure if it is missing and must supply rewards that are contingent on the adequate performance of the subordinates. To do so, leaders must clarify the desirability of the goals for the subordinates, a role seemingly suited for transformational leaders. (Bass, 2008, p. 811)

A fourth situational moderator, stress and leadership, deals with the nature of stress and its impact on the relationship between the leader, the organization, and the group members. Stressful situations fall in various categories, and do exist on a continuous basis in the life of the individual leader, as well as the members of the group in many organizations. It has been found that a leader who was traditionally seen as an effective leader may become ineffective during times of crises, if they are unable to adequately assess the situation at hand, and make decisions that will be of long-term benefit to the organization. The converse is also true, indicating that differing situations may require individuals with differing leadership skills, and that no one type of leader is necessarily ideal, but that the individual possessing a cross-section of the required skills may be best suited for positions of leadership. The crowding of the physical, psychological,

and psychosocial spaces is an unquestionable source of stress, which must be adequately managed for the successful functioning of organizations (Bass, 2008).

Space, networks, as well as leadership and its substitutes constitute a fifth situational moderator. The need for spatial and social arrangements in the workplace cannot be overemphasized, as both leaders and group members, alike, need to have access to the physical space in which they may operate. Psychological space is also important, as the pressures of the position, the workplace, and of the varying tasks at hand necessitate that the existing conditions allow for this crucial element. Not only is it necessary for the existence of physical and psychological space, but the need also exists for psychosocial space as well as psychosocial distance. The leader also needs to develop and maintain networks that will serve as a support system for the many and varied roles of leadership, both in and out of the work environment. Ironically the effective coordination of these necessary tools has the potential of becoming authentic, functional substitutes for leadership (Bass, 2008).

A sixth situational moderator is the persistence, transfer, and succession of leadership. Persistence has been seen to be a vital quality that marks an individual as a potential leader with the ability to succeed. Additionally, evidence seems to indicate that leadership is transferable, to the extent that individuals who tend to be successful in one area are often successful in other positions of leadership also. Indications are that individuals who have been leaders in high school and college tend to become leaders in their other pursuits in life. When unsuccessful groups are given new and successful leaders, they tend also to become successful; but when previously successful groups are placed in this position, there is the tendency for their effectiveness to be diminished. Groups that have a high rate of leader turnover tend to decline more rapidly than others that are not subject to this level of instability. In addition to the considerations indicated, the gender of the individual who is asked to serve as leader during the process of change has been identified as critical to the situational outcomes (Bass, 2008). This sixth situational moderator serves as the foundation for the selection of the four personal variables—Gender (LGEN), Formal

Leadership Training (FLTR), Informal Leadership Training (ILTR), and Years of Service as an Educator (LYOS)—under observation in this study, since the gender, leadership preparation, and longevity of leaders all seem to impact organizational growth, development, and effectiveness.

### Gender

The impact of gender on leadership has increased in importance over the past four decades, as women all over the world have been rising to positions of prominence that were once relegated to men. This has been made possible, in part, by the recognition that women are able to lead and fulfill challenging tasks as well as, or even better than, their male counterparts, except in instances when physical strength was needed, or when it was physically challenging for physiological reasons. Despite these findings, male and female supervisors who behave in the same manner are often evaluated differently, placing the female in an unfavorable position. This has been validated by the findings of Morrison, White, and Van Velsor (1987, as cited in Bass, 2008), from a review of interview and assessment data on successful women in positions of leadership. This study concluded that executive women may actually differ little from their male counterparts on most matters that count, but unlike the men, they must confront two sets of demands. To be successful,

[they have] to show their toughness and independence and at the same time count on others. They [must] contradict the stereotypes that their male executives and co-workers have of women—they [must] be seen as different, “better than women” as a group [yet they must not] . . . forfeit all traces of femininity, because that would make them too alien to their superiors and colleagues. . . . [They must] do what *wasn't* expected of them, while doing enough of what *was* expected of them as women to gain acceptance. The capacity to combine the two consistently, to stay within the narrow band of acceptable behavior, is the real key to success. (pp. 736-737)

These findings indicate the challenges that women must face in their varying positions of leadership. They are required to make adjustments that are not required of their male counterparts, and must redouble their efforts to show their toughness, while at the same time not lose their femininity. This is a delicate balance that must be maintained if they are to be successful. Of major significance to the discussion regarding women in leadership positions is

the finding that even in female-dominated jobs men tend to be selected as leaders. It is worthy of note that jobs and positions that are predominantly female-dominated are usually less financially lucrative than those jobs and positions that are dominated by men (Bass, 2008).

A meta-analysis of gender-related leadership studies done across numerous countries has further indicated that women tend to be more Transformational, while men tend to be more Transactional in their approach to leadership by respondents (Butterfield, Alves, & Bartol, 2004; Eagly et al., 2003; van Engen, van der Leeden, & Willemsen, 2001, all cited in Embry, Padgett, & Caldwell, 2008). While it is true that the elements of Transactional Leadership have their place, those attributes and behaviors aligned to Transformational Leadership are considered to produce the most ideal institutional results. Those elements associated with Transactional Leadership are considered by Avolio and Bass (2004) to be important, to the extent that they serve to augment the elements associated with Transformational Leadership. These results have major implications for the attitudes that attend the selection of individuals to positions of leadership in general, and in the choices made in the realm of education in particular, and therefore help to support the inclusion of Leader Gender (LGEN) as a dependent variable in this research.

#### Formal and Informal Leadership Training

While it is true that giftedness and natural ability tend to be predictors of the quality of leadership provided in any given situation, Leadership Training, both formal and informal, has been considered to be among the components that enhance the quality of leadership provided in the educational environment, as well as to organizations in general. This perspective was highlighted by W. Edwards Deming (1986, as cited in Bass, 2008), among others, who in the development of his 14 principles of quality control identified the teaching and instituting of leadership as a pre-eminent prerequisite of success in organizations. This, he intimated, was necessary for the establishment of a climate of innovation and the removal of barriers that rob



human beings of pride and human dignity in the workplace. Institutions established for the purpose of leadership training, especially those emulating the models drawn from history, political science, philosophy, psychology, and anthropology have been successful in preparing individuals who have developed their leadership potential. Other approaches have included modeling, mentoring, managing, and the monitoring of learning. The leadership preparation done in the classroom is that which is considered to be Formal Leadership Training (FLTR), and that done within the work environment, in which on-the-job leadership exposures and experiences may be had, is that which is considered to be Informal Leadership Training (ILTR).

The multiplicity of definitions of leadership—complemented by the shared vision of establishing a guiding vision, the possession of passion, and the need to act with integrity, all foundational to the concept of leadership (Bennis, 1989, as cited in Ardichvili & Manderscheid, 2008)—along with the perceived importance of leadership in contemporary society, has contributed to the assigning of large percentages of many organizational budgets, and the development of a coordinated approach to leadership training. To facilitate this process, considered to be among the most popular areas of human resource development, practice and academic research,

comprehensive overviews of leadership development were provided by Cacioppe (1998), Conger (1992), Conger and Benjamin (1999), Day (2001), Fulmer, Gibbs, and Goldsmith (2000), Giber, Carter, and Goldsmith (2000), Hermez-Broome and Hughes (2004), and Macauley and Van Velsor (2005) . . . Naquin and Holton (2006) . . . and Trehan (2007). (Ardichvili & Manderscheid, 2008, p. 620)

Other sources devoted to leader development (the preparation geared towards the development of the capacity of the individual leader) and leadership development (the process established for the purpose of developing individuals to perform their specified formal roles, thereby expanding organizational capacity) have been established. Evidence from research suggests that leadership development, entrenched and understood within the context of the organizational mission as well as the social and organizational realities, is best suited to maximally achieving organizational goals (Day, 2001; Last, Olivares, & Hess, 2007; McCauley

& Van Velsor, 2005). These views provide support for, and give credence to the inclusion of the concept of leadership preparation—both formal and informal—in this research.

### Years of Service

The years of service of individuals, including educators, has been considered to have two-fold significance in organizations, since the length of one's service is usually perceived to be associated with the quality and type of leadership, while there is an expectation that such individuals would possess the skills and abilities necessary to serve as models of organizational values, and ultimately become leaders within these institutions. These views have been promulgated by leadership researchers who suggest that “a core element of transformational leadership is the development of followers to enhance their capabilities and their capacity to lead” (Sosik & Godshalk, 2000; Sosik, Godshalk, & Yammarino, 2004, as cited in Bass & Riggio, 2006, p. 55). The expectation, therefore, is that the Transformational Leaders within institutions or groups prepare their followers to become leaders whose performance is exemplary.

Additionally, there is limited evidence that there are connections between the length of service of followers and the practice of Transformational Leadership within their organizations. This is highlighted by the findings that “followers of transformational leadership demonstrated greater commitment to their organizations as evidenced by their lowered intentions to turnover” (Martin & Epitropaki, 2001, as cited in Bass & Riggio, 2006, p. 43), among other considerations.

The two-fold importance of follower-tenure has implications for organizations, including educational institutions, since veteran and experienced educational leaders are expected to foster the replication of similarly outstanding educational leaders, with the potential to impact the student, the educator, the institution, and the society at large. This is among the reasons that the personal variable, Years of Service as an Educator (LYOS) associated with the Department Chairpersons within institutions of higher education, was included in this study.

## **Leadership and Management Compared**

Distinctions made between leadership and management have led to studies of the work of leaders and managers; the qualities of autocratic and authoritarian versus those of democratic and egalitarian leadership; directive versus participative leadership; task versus relations-oriented leadership; consideration, initiating structure, and related factors for describing leadership; and Laissez-Faire Leadership versus the motivation to manage (Bass, 2008).

A report of clinical observations made by the psychoanalyst, Zaleznik (2004), supports the findings of leadership theorists that managers and leaders are different in many respects. Leaders are said to be Transformational; attract strong feelings of identity and intense feelings of love and hate; send clear messages of purpose and missions; generate excitement at work and heighten expectations through the images and meanings they provide; cultivate, establish, and break off intensive one-to-one relationships; reveal empathy for individuals, and consequently see what different events mean to different individuals; more concerned with ideas rather than process, and are able to articulate and project these into images; and more active. Conversely, managers were found to be Transactional; not to attract strong feelings of identity and intense feelings of love and hate; send ambiguous signals of purpose and missions; tolerate the mundane; make flexible use of rewards and punishments; try to maintain, not change, a controlled, rational, equitable system; were role players engaged in an activity, whose meaning lies in itself as a process; and to be more passive (Bass, 1985).

The effectiveness of an organization is often viewed in relation to the measurement of responsibility, authority, and delegation, and their interrelationships at different levels of the organization. This view is supported by Hoy and Miskel (2005), whose empirical findings suggest that many school administrators only possess the power and authority of their office alone, and are consequently sterile bureaucrats, and not leaders. Similarly, Barnard (1938, as cited in Hoy & Miskel, 2005) is of the view that it is “only when the authority of leadership is combined with the authority of position will superiors be effective in inducing subordinates to

comply with directives outside the bureaucratic zone of indifference” (p. 206). It is the possession of formal and informal authority that differentiates between formal leaders (who have both formal and informal authority); officers (who are ascribed with formal, but not informal authority); and informal leaders (who have informal, but not formal authority). As expected, followers have neither formal nor informal authority (Hoy & Miskel, 2005). These relationships, among others, naturally lead to varying outcomes of leadership, and are therefore instrumental in engendering and promoting the perceptions of leader behavior that are reported by group members at varying levels of leadership in the institutions and organizations in which they serve.

### **Improving Leadership and Leadership Research**

Three major issues have been identified as being important in improving leadership and leadership research. They are the development, education, and training for leadership and management; the assessment and forecasting of performance; and the identification of leadership issues pertinent to the 21<sup>st</sup> century, with a view to preparing to support the strengths and off-setting the attending challenges.

### **The Development of Leaders and Managers**

The need for leadership development is one that has become more critical with the changing and diverse roles that are now required of leaders. To compound the problem, retiring leaders are being replaced with younger, well-published scholars who often lack administrative experience. While it is true that length of service does not necessarily translate to or equate with the possession of requisite skills, experience, and expertise, it is true the possession of these qualities, coupled with formal and informal leadership exposures, will be more likely to produce a more effective leader. Commenting on this issue of leadership training, Guthrie (1990) has noted that “the preparation of professional educational administrators is one of the weakest components of the United States’ education” (pp. 228-229). Adding to the discussion, Fossey and Shoho (2006) have concluded that while educational leaders may disagree with many of the criticisms

leveled at educational leadership preparation programs, they concur that weak programs do exist. These observations are not only true of the United States of America, but also of other nations around the world, including Jamaica.

Development, education, and training for leadership and management, along with the assessment and forecasting of the performance of leaders and managers, are critical to the process of leader development in the 21<sup>st</sup> century. Also of great importance is the need to ascertain the major considerations necessary for looking ahead. These may include methodological and other substantive issues.

Development issues such as family influences, birth order, size of the family, treatment by parents, parents as models, the importance of a strong single-parent mother, parental standards; opportunities in childhood and adolescence; educational issues including access to secondary, and higher education, as well as continuing adult education and development, were cited as being crucial to leadership development. Career issues, including individual and organizational alignment, and career planning; leader-subordinate relations; career paths, including the mobility of managers; careerism, including career failures and the costs to the organization, impact immeasurably on the professional upward mobility of the aspiring leader.

The value of training cannot be overlooked, as it is among the most critical elements in the process of preparation for leadership and management. Prior to the development of such training programs, needs assessments should be done using the top-down, or bottom-up approach, depending on the organization and the situation. In some instances, training may not be as necessary as is the need for a change of organizational facilities, resources, policies, and practices that support the growth and development of the worker.

Methods of leadership training, including lectures and discussions, role playing, simulation, computer-assisted and programmed instruction, behavioral modeling, and sensitivity training have been found to be effective in the process of leadership development and training. On-the-job leadership training and development have also been found to be extremely valuable.

When a purposive approach is taken, organizations may capitalize on the virtues of learning from experience by providing coaching and mentoring, and by consistently evaluating workers. The purposes of leadership training include the improvement in the attitudes and knowledge of the leader, as well as improved self-perception, decision-making, and theory-based training. Further, training should focus on the success and effectiveness of the leader by the provision of opportunities for growth (Pounder, 2006).

Training and education in leadership styles are other important components of this effort, as individuals may be taught to become more successful leaders by learning how and when to use the major styles of leadership. Various programs have been developed to accommodate the ever-growing number of existing and emerging leaders in workplaces around the globe. Attention must be paid to the factors that potentially affect training outcomes. In addition to the “personal attributes of trainees, the composition of the training group, follow-up strategies, behavior of the trainer, congeniality if the environment to which the person returns” (Bass, 2008, pp. 851), and other factors have been found to impact training and learning outcomes (Bass, 2008).

Commenting on the need for leadership development, Hannum, Martineau, and Reinelt (2007) have identified seven goals that may be achieved by focusing on this important aspect of leadership. They are:

- (1) Expanding the capacity of individuals to be effective in leadership roles and processes;
- (2) developing the pipeline of leaders within an organization or field;
- (3) identifying and giving voice to emerging and/or invisible leadership;
- (4) strengthening the capacity of teams to improve organizational outcomes;
- (5) supporting the creation of new organizations or fresh approaches to leading;
- (6) encouraging collaboration across functions, sectors, industries; [and] (7) creating a critical mass of leaders that can accelerate change in communities and countries to address key issues and problems. (p. 6)

Among the key reasons for leadership development is the fact that research in this area has been increasingly concerned with the identification of theoretical frameworks and leadership styles that most effectively fulfill the varying objectives of leadership. The individual, group,

organization, or institution that is concerned with excellent leadership would do well to avail itself to the overwhelming body of knowledge that is presently available.

Burns (1978), in speaking of the evolving body of knowledge available on leadership as well as of the possibilities for training, indicates that there are many different types of leadership that are being developed and supported within the arena of leadership development, with one of the earliest arising from the distinctions made between Transactional and Transformational Leadership (Hannum et al., 2007).

### **A Fundamental Concept in Leader Identification**

Among the fundamental concepts related to the identification of leaders is the view that it is the group members who determine whether or not one is a leader. This view has been postulated by Kouzes and Posner (2007) in their book, *The Leadership Challenge*, in which they state that “leadership is in the eye of the follower” (p. 15), and is also supported by Yukl (2002) and Gardner (1993) who suggest that the attitudes of the group members are primarily responsible for, and serve as the most important indicator, not only of the perceived success of the leader, but also of the outcomes of leadership of such an individual.

#### **Major Assumptions and Principles**

Numerous assumptions and principles have been postulated regarding the identification of an ideal leader. These foundational postulations and standards, summarized by Hoy and Miskel (2005), include a broad range of ideas, among which are the following:

1. A number of personality and motivation traits increase the likelihood that individuals can and will engage in effective leadership efforts to influence others.
2. Leadership skills help individuals formulate and implement solutions to complex social and technical problems and to accomplish goals in an effective fashion.
3. Leadership and situational factors display strong reciprocal relationships.

4. Leaders exercise influence through situational variables while situational variables support and limit leader influence.

5. Neglecting task behaviors limits leader influence on performance outcomes, whereas discounting interpersonal relations reduces the satisfaction of followers.

6. A general proposition of contingency models of leadership is that leader traits and skills combine with characteristics of the situation to produce leader behaviors, which in turn predict performance outcomes.

7. Transformational Leaders expand on Transactional relationships to manage meaning, to emphasize the importance of the followers' emotional responses, and to achieve unusually high performance outcomes.

8. Distributed leadership theory postulates that schools rely on multiple sources of leadership to complete numerous tasks, especially during periods of transformation when comprehensive reforms are being implemented.

9. Leading includes instrumental and behavioral activities, as well as symbolic and cultural actions.

If these basic assumptions and principles are to be incorporated into the program of any institution, it becomes necessary to determine measures that help to identify their existence in institutional leaders in an effort to ensure their implementation. Among the most popular modes of leader identification across a multiplicity of disciplines is the Multifactor Leadership Questionnaire (MLQ) Rater Form (5X-Short), developed over time by Bernard M. Bass and Bruce J. Avolio.

#### The Development of the Multifactor Leadership Questionnaire (MLQ) Rater Form (5X-Short)

In a changing world in which competition is a major determinant of organizational success, new models of leadership are required to produce the leaders who may effectively face the challenges of this new era (Avolio, 1995; Cascio, 1995; Drucker, 1988; Quinn, 1992). This



has seen the need for the evolution of leadership theories that go beyond the Transactional Theory and its predecessors, as the hierarchical paradigm that supported these constructs have become inadequate to meet the ever-increasing demand for the training and development of workers and leaders with the competitive edge. This necessitates the identification of leaders—whether by the process of selection or training—who possess a wide range of leadership skills (Bennis & Nanus, 2007; Kouzes & Posner, 2007; Tichy & Devanna, 1997). The possession and positive impact of the use of this range of leadership skills is referred to by House and Podsakoff (1994) as “outstanding leadership,” which can achieve the transformation necessary to compete in a fast-paced, technology-driven world. In view of this, the last 20 years have seen numerous studies that have tested a new paradigm of Transformational and Transactional Leadership (Bass & Avolio, 1994).

Among the major concerns of Avolio and Bass (2004) was the need to broaden the scope of leader behaviors to include the “‘full range’ of leadership styles ranging from the charismatic and inspirational leaders to avoidant laissez-faire leaders” (Avolio & Bass, 2004, p. 1). While much of the former literature on leadership research has focused on Charisma and Inspirational Leadership, Antonakis, Avolio, and Sivasubramaniam (2003) argue that the need still exists for the inclusion of a full range of leadership styles in models and measures in an effort to adequately assess these styles. The MLQ Rater Form (5X-Short), the instrument that has been most widely used to measure Transformational and Transactional Leadership, was used in this research.

Transactional Leadership is said to possess two components—Contingent Reward and Management-by-Exception Active. Both constructive and corrective in nature, those who subscribe to Transactional Leadership in its constructive form seek to motivate their followers by the exchanging of rewards for the rendering of pre-contracted services (Avolio & Bass, 2004; Hoy & Miskel, 2005). This means that they “pursue a cost-benefit economic exchange to meet followers’ current material and psychological needs in return for contracted services rendered by the subordinate” (Hoy & Miskel, 2005, p. 396). In its corrective form, there is a focus on Active

Management-by-Exception. The setting of standards is its major objective, with close monitoring for the meeting of established standards, and the assignment of punitive measures when there are occurrences of errors. To the contrary, Passive/Avoidant Leadership is considered to be non-leadership, as individuals who display the attending behaviors—Management-by-Exception Passive and Laissez-Faire Leadership—are not believed to be displaying the expected or required qualities of leaders (Avolio & Bass, 2004).

Whereas Transactional Leadership is considered to be an exchange of something that has value for both leaders and followers, Transformational Leadership is a process that leaders and followers engage in that raises one another's level of morality and motivation by appealing to ideals and values. Another way of distinguishing between Transactional and Transformational Leadership is to identify the differences between what leaders do and who leaders are. Early understandings of leadership focused almost exclusively on the traits, characteristics, and capacities of individual leaders (Hannum et al., 2007). However, when various categories of individuals were asked to describe the characteristics of the leaders who they considered to be most effective, their responses indicated that these individuals displayed attributes and behaviors that went beyond the description of the Transactional Leader, and resembled those qualities that are used to describe Transformational Leaders. According to Avolio and Bass (2004), "they described leaders who had the greatest influence on them as transformational: inspirational, intellectually stimulating, challenging, visionary, development oriented, and determined to maximize performance" (p. 3). The word "charisma" was often used to identify such a leader.

Additionally, James McGregor Burns was also instrumental in bringing to the fore differences in approaches to leadership taken by both great and ordinary politicians to motivate their followers. This view, along with the data collected from research done on leadership, pointed to the emergence of a new and more broadened scope of leadership behaviors, ranging from the least effective behaviors possessed by those who are considered to be Passive/Avoidant

in practice, to the Transactional Leader, and moving to the Transformational Leader described by the raters in their research.

As a direct result of the findings of these studies, the Full-Range Leader Development Program (FRLD) was developed to capture a “broader range of leadership behaviors” (Avolio & Bass, 2004, p. 4) than was previously possible. This program uses the Multifactor Leadership Questionnaire (MLQ) Rater Form (5X-Short), the MLQ Manual, and the MLQ Report. Complementing this effort are the Multifactor Leadership Questionnaire for Teams (MLQT) and the Organizational Development Questionnaire (ODT).

Numerous advantages attend the use of the MLQ Rater Form (5X-Short). The Full-Range Leadership Model, often represented by its styles and their variables on a continuum, can be readily assessed by the MLQ Rater Form (5X-Short), among other instruments. At worst, the questionnaire assesses Passive/Avoidant Leadership; and at best it assesses perceptions and leader behaviors that promote Transformational Leadership attributes and behaviors. This quality places the MLQ Rater Form (5X-Short) in a unique position, as it not only serves to identify a narrow range of leader behaviors, but more importantly, it covers a wide spectrum of leadership styles, their related attributes and behaviors, as well as their attending outcomes. Other significant advantages of the MLQ Rater Form (5X-Short) are its 360-degree capacity to assess leaders at different levels of the organization from varying internal and external perspectives; evidence that its factors can be “universally applied across cultures” (Avolio & Bass, 2004, p. 4); its emphasis on development; the fact that its model is easily understood, as it assesses a leader on a range of leadership styles, and identifies the path to pursue for improved effectiveness; and finally, the fact that the model links the leadership styles to expected performance outcomes, evidenced by numerous prior studies that support this claim (Dumdum, Lowe, & Avolio, 2002). Also validating the claims of Avolio and Bass are Marturano and Gosling (2008) who, in referring to the MLQ Rater Form (5X-Short), have indicated that “the most important impact of Bass, and

later Avolio, has been their systematic research of leadership using a reliable and valid instrument” (p. 21).

The MLQ Rater Form (5X-Short), a 45-item validated form, used for the purposes of conducting organizational surveys and researches, and for the preparation of reports for individual leaders; and the MLQ Rater Form (5X-Long), a 63-item validated form, used for the purposes of training, development, and feedback, along with additional “correlated items of behavior” (Avolio & Bass, 2004, p. 5), are available for the study of the Full Range Leadership Model. Both the discriminatory and confirmatory factor analyses have been used to validate these questionnaires.

#### The Reliability and Validity of the Multifactor Leadership Questionnaire (MLQ) Rater Form (5X-Short)

Concerns regarding the reliability and validity of the MLQ Rater Form (5X-Short) have been addressed by Bass and Riggio (2006). Internal consistency, rate-rerate consistency, subordinate-superior agreement, favorable peer ratings based on performance in small groups, evidence of construct validity, interdependence of the components, and correlations with independent variables are all indicators of the reliability and validity of the instrument.

Evidence from research has indicated that the scales of this survey have demonstrated “good to excellent internal consistency with alpha coefficients of above the .80 level for all the MLQ scales, using the most recent version of the MLQ across a large sample” (Bass & Riggio, 2006, p. 22).

Regarding the rate-rerate consistency of this instrument, Pile (1988, as cited in Bass and Riggio, 2006) found, after allowing 6 months between a first and a second rating of the same groups of leaders and the followers, that the first set of results predicted the second. The correlations for the rate-rerate self-ratings of 30 leaders studied are Idealized Influence, also referred to as Charismatic Behavior ( $r = 0.60$ ), Inspirational Motivation ( $r = 0.45$ ), Intellectual Stimulation ( $r = 0.61$ ), Individualized Consideration ( $r = 0.70$ ), Contingent Reward ( $r = 0.44$ ),

Management-by-Exception ( $r = 0.74$ ), and Laissez-Faire ( $r = 0.73$ ). The correlations for the rater self-ratings of 193 followers studied are Idealized Influence also referred to as Charismatic Behavior ( $r = 0.79$ ), Inspirational Motivation ( $r = 0.66$ ), Intellectual Stimulation ( $r = 0.66$ ), Individualized Consideration ( $r = 0.77$ ), Contingent Reward ( $r = 0.52$ ), Management-by-Exception ( $r = 0.61$ ), and Laissez-Faire ( $r = 0.82$ ). Later similar studies were found to have produced even higher correlations in both categories.

Analyses of instances of subordinate-superior agreement on evaluations of focal leaders suggest that there is general agreement between both groups, although from differing perspectives. A study of 107 midshipmen at the Naval Academy in the United States done by Atwater and Yammarino (1993), found that responses of both superiors and subordinates regarding the focal midshipmen had correlations of .35 and .34 respectively on the measures of Transformational and Transactional Leadership. Since leaders and followers tend to view middle managers from differing perspectives, this finding suggests that “considerable variance in the MLQ was attributable to consistent individual differences in the focal midshipmen” (p. 23).

Favorable peer ratings based on performance in small groups have been used to show the validity of the instrument. The mean correlation of a list of 21 items used to assess the components of the models of Transformational and Transactional Leadership in the survey was 0.35, and is evidence of its validity.

Evidence of construct validity has been verified by researchers such as Antonakis et al. (2003) who have countered the arguments of those who suggest that factors in the nine-factor model of the MLQ Rater Form (5X-Short) are not evident and should be consequently combined or collapsed, by showing that the inconsistencies in the findings are the result of the use of “heterogeneous samples of leaders from different cultures, organizational types, and organizational levels” (p. 24), and that a correction of these issues provided the expected results.

The interdependence of the components, correlations with independent components arrived at from meta-analyses of studies done using this survey, as well as all of the other measures of

Transformational Leadership, all strongly indicate the reliability and validity of the MLQ Rater Form (5X-Short), one of the two questionnaires used in this study.

While the contributions of the leadership theories to the development of Bass's Full-Range Leadership Model, as well as the group of questionnaires that study this construct cannot be overestimated, the seminal studies that were done in the area of leadership also supported and contributed to the process of model-building undertaken by Bass and his cohorts.

### **Summary**

The concept of leadership continues to be an integral field of study in the area of educational administration, as it is among the significant pillars that determine the failure or success of organizations and institutions. Because of the complexity and elusiveness of the concept of leadership, however, it is expected that empirical misconceptions will exist. Despite this reality, major progress has been made with the development of a scholarly and enviable body of work on the subject.

There is general agreement that leadership involves a process of social influence in which an individual exerts intentional influence over others in an effort to organize activities and forge and develop relationships in a group or an organization. Numerous models of leadership have consequently been developed, proposed, and examined in an effort to determine their viability and effectiveness. Contingency theories, which became popular in the 1970s, were illustrated by Fielder, who postulated that leadership effectiveness is contingent on the matching of the leadership style with the appropriate situation. Within a decade, this development gave way to varying theories and models, including the eclectic approach called Transformational Leadership. This model "incorporates emotional responses of followers and visionary, change-oriented behaviors" (Hoy & Miskel, 2005, p. 407). Although this approach is still being developed and empirically tested, Transformational Leadership has been receiving much attention, especially as

it seems to offer the best fit to complement most other existing models of leadership, while having the potential to be the answer to a wide range of leadership situations.

While it is true that additional empirical studies need to be done to verify some of the claims of various leadership styles, it is clear that many organizations and educational institutions do not train their leaders to exemplify the qualities in these approaches that have been associated with success. Empirical evidence is pointing to the possibility of successfully training functionaries to model some attributes and behaviors that are deemed necessary for the achievement of organizational goals and objectives (Hughes et al., 2009). Complementary to the development of these theories were questionnaires that tested the developing theories of leadership. Notable among the instruments used in numerous groundbreaking surveys is the MLQ Rater Form (5X-Short), which was used in this research.

## CHAPTER III

### RESEARCH METHODOLOGY

#### **Introduction**

Among the considerations used to determine the research design used in any study are the three important fundamental principles: philosophical assumptions, strategies of inquiry, and specific research methods, along with the additional factors of the nature of the research problem, the personal experiences of the researcher, and the audiences for whom the research study is intended (Creswell, 2009).

#### **Description of the Research Design**

The research design used in this research is the quantitative approach in which the investigator traditionally uses what has come to be known as post-positivist claims—including reasoning from cause to effect, reduction to specific variables and hypotheses and questions, measurement and observation, and the test of theories—for the purpose of developing knowledge. Among the strategies used for the quantitative approach are experiments, surveys, and data collection on pre-determined instruments developed to yield statistical data. Additionally, Creswell (2009) indicates that the quantitative approaches—including the survey method used in this research—make use of closed-ended questions, pre-determined approaches, and numeric data. These practices test and verify theories or explanations, identify variables to be studied, relate variables in questions, use standards of validity and reliability, observe and measure information numerically, use unbiased approaches, and employ statistical procedures.



## The Survey Method

The use of the survey method greatly assisted with the identifying of the relationships between the 16 independent, dependent, and personal variables studied. The approach to sampling used was similar to a census, as it involved the potential participation of all qualifying persons from specifically selected strata of subjects, the Department Members and Department Chairpersons, who were chosen from the pre-determined population, the participating universities. The data provided by these purposively selected groups of respondents could potentially yield a wealth of information that may be useful in guiding policy makers in education to develop and prepare leaders to become more efficient and effective educational leaders in their departments, thereby promoting sustained organizational growth and development. The questionnaires used were designed to elicit information that, it is hoped, will serve as the basis for further research, as well as a source of potential solutions for the leadership concerns in institutions of higher education.

## Justification for the Use of the Quantitative Approach

The use of the quantitative approach to do this research is justified under these circumstances for varying reasons. The first reason is that the data for the research were collected in universities, all of which have varying schedules and programs that may not readily be able to adapt to the requirements of a qualitative study. The second reason is that the quantitative approach allowed for a more efficient use of time and facilitated the conflicting program schedules of subjects within these institutions, schools, faculties, or departments, which may not as readily allow the researcher enough individual time slots for many meetings of focus groups or interviews. The third reason is that this approach also helps to protect the privacy of the respondents in such a setting, especially as the questionnaires related to much smaller, nested populations. Finally, in addition to the reasons already given for the choice of the quantitative approach, the overriding argument is the fact that the survey method was best suited to the

process of uncovering the nested data that were anticipated to be present within the responses of the various groups. When there are additional resources and time, other approaches may then be used for the purposes of the cross validation of research findings, as well as for the garnering and documenting of additional insights on the subject.

### **Population and Sample**

The population that was used was 795 Department Members, and 41 Department Chairpersons; and the sample, derived from the usable returned questionnaires was 148 Department Members and 20 Department Chairpersons from selected universities on the island of Jamaica.

The survey of at least 100 individuals is in keeping with the recommendations of Warner (2007), who says:

It is generally a good idea to have studies with at least  $N = 100$  cases where correlations are reported, partly to have adequate statistical power, but also to avoid situations where there is not enough information to evaluate whether assumptions (such as bivariate normality and linearity) are satisfied and to avoid situations where one or two outliers can have a large effect on the sample  $r$ . (p. 294)

The universities that were initially selected for participation were chosen using the criterion that each institution should have been in existence for more than 50 years. This criterion was important, as it helped to ensure that the institutions evaluated were those that were enduring, and therefore primarily responsible for the training of individuals who eventually became leaders. Of the six universities in Jamaica, four—the Mico University College (founded in 1835), Northern Caribbean University (founded in 1907), the University of Technology (founded in 1958), and the University of the West Indies (founded in 1948)—were selected because they fit this criterion. Having been established before the independence of Jamaica from Great Britain on August 6, 1962, they have stood the test of time, they have changed and grown to become relevant and successful without losing their essence, yet have remained fundamentally what they

were when they were founded (Shrader, 2004). In the end, only three of the four institutions selected provided the preliminary data necessary for participation.

Having identified the selected universities, it became necessary to establish additional criteria, in an effort to assist in ensuring that the available sample size could provide potentially viable data, since an  $N$  of 100 is the minimum number of respondents recommended for a study such as this—in which correlations are being reported—to ensure adequate statistical power, and to avoid the specter of having outliers affecting the outcomes on the sample  $r$  because of insufficient information to evaluate whether or not assumptions are satisfied (Warner, 2007). Because the universities were selected using the first criterion, because a minimum of 100 respondents was required for the viability of the data, and because it is required that a minimum of three supervisees other than the Department Chairperson being rated in each department be selected in an effort “to protect the anonymity of raters” (Avolio & Bass, 2004, p. 13), then it was determined that the second criterion be that each selected institution should have had a minimum of 10 departments or entities; and that the third criterion be that in these departments or entities, there should be at least three Department Members other than the Department Chairperson. In addition to ensuring that the sample size was adequate to provide viable data, it was also of critical importance to this research that the respondents had worked together, so that valid data might be collected. This led to the establishment of a fourth criterion—that both Department Chairpersons and Department Members should have worked together for at least one term or semester.

The use of these criteria implies that each of the selected institutions would have provided a minimum of 40 respondents with at least 30 being Department Members, and 10 being Department Chairpersons who should have worked together for at least one semester or term prior to the process of data collection, thus providing a sample size of a minimum of 120 Department Members, who would have rated a minimum of 40 Department Chairpersons. This

approach indicates that participants were selected at the supervisory and the group member levels using a research design similar to a census.

### **The Research and Null Hypotheses**

The three research hypotheses, along with their three corresponding null hypotheses that were tested in this study, are indicated below.

The research hypothesis that represents the concerns of Research Question 1 is:

Hypothesis 1: There is a significant relationship between Leader Gender (LGEN), Formal Leadership Training (FLTR), Informal Leadership Training (ILTR), and Years of Service as an Educator (LYOS); and Idealized-Influence Attributed (II-A), Idealized-Influence Behavior (II-B), Inspirational Motivation (IM), Intellectual Stimulation (IS), Individualized Consideration (IC), Contingent Reward (CR), Management-by-Exception Active (MBE-A), Management-by-Exception Passive (MBE-P), and Laissez-Faire Leadership (LF) that predicts Extra Effort (EE), as perceived by Department Members regarding the leadership of their Department Chairpersons.

To answer Research Question 1, represented by Research Hypothesis 1, the following null hypothesis was tested:

Null Hypothesis 1: There is no significant relationship between Leader Gender (LGEN), Formal Leadership Training (FLTR), Informal Leadership Training (ILTR), and Years of Service as an Educator (LYOS); and Idealized-Influence Attributed (II-A), Idealized-Influence Behavior (II-B), Inspirational Motivation (IM), Intellectual Stimulation (IS), Individualized Consideration (IC), Contingent Reward (CR), Management-by-Exception Active (MBE-A), Management-by-Exception Passive (MBE-P), and Laissez-Faire Leadership (LF) that predicts Extra Effort (EE), as perceived by Department Members regarding the leadership of their Department Chairpersons.

The research hypothesis that represents the concerns of Research Question 2 is:

Hypothesis 2: There is a significant relationship between Leader Gender (LGEN), Formal Leadership Training (FLTR), Informal Leadership Training (ILTR), and Years of Service as an

Educator (LYOS); and Idealized-Influence Attributed (II-A), Idealized-Influence Behavior (II-B), Inspirational Motivation (IM), Intellectual Stimulation (IS), Individualized Consideration (IC), Contingent Reward (CR), Management-by-Exception Active (MBE-A), Management-by-Exception Passive (MBE-P), and Laissez-Faire Leadership (LF) that predicts Effectiveness (EFF), as perceived by Department Members regarding the leadership of their Department Chairpersons.

To answer Research Question 2, represented by Research Hypothesis 2, the following null hypothesis was tested:

Null Hypothesis 2: There is no significant relationship between Leader Gender (LGEN), Formal Leadership Training (FLTR), Informal Leadership Training (ILTR), and Years of Service as an Educator (LYOS); and Idealized-Influence Attributed (II-A), Idealized-Influence Behavior (II-B), Inspirational Motivation (IM), Intellectual Stimulation (IS), Individualized Consideration (IC), Contingent Reward (CR), Management-by-Exception Active (MBE-A), Management-by-Exception Passive (MBE-P), and Laissez-Faire Leadership (LF) that predicts Effectiveness (EFF), as perceived by Department Members regarding the leadership of their Department Chairpersons.

The research hypothesis that represents the concerns of Research Question 3 is:

Hypothesis 3: There is a significant relationship between Leader Gender (LGEN), Formal Leadership Training (FLTR), Informal Leadership Training (ILTR), and Years of Service as an Educator (LYOS); and Idealized-Influence Attributed (II-A), Idealized-Influence Behavior (II-B), Inspirational Motivation (IM), Intellectual Stimulation (IS), Individualized Consideration (IC), Contingent Reward (CR), Management-by-Exception Active (MBE-A), Management-by-Exception Passive (MBE-P), and Laissez-Faire Leadership (LF) that predicts Satisfaction (SAT), as perceived by Department Members regarding the leadership of their Department Chairpersons.

To answer Research Question 3, represented by Research Hypothesis 3, the following null hypothesis was tested:

Null Hypothesis 3: There is no significant relationship between Leader Gender (LGEN), Formal Leadership Training (FLTR), Informal Leadership Training (ILTR), and Years of Service

as an Educator (LYOS); and Idealized-Influence Attributed (II-A), Idealized-Influence Behavior (II-B), Inspirational Motivation (IM), Intellectual Stimulation (IS), Individualized Consideration (IC), Contingent Reward (CR), Management-by-Exception Active (MBE-A), Management-by-Exception Passive (MBE-P), and Laissez-Faire Leadership (LF) that predicts Satisfaction (SAT), as perceived by Department Members regarding the leadership of their Department Chairpersons.

### **The Definition of the Variables**

The conceptual, instrumental, and operational definitions of the 18 variables presented in the two questionnaires studied in this research are indicated below. Two of these variables are demographic in nature, nine are independent (level-one) variables, three are dependent (level-two) variables, and four are independent (level-one) personal variables.

#### Demographic Variables

The demographic variables, used primarily to organize the data in this research, are:

Participant's Identification Number (ID), conceptually defined as the number used to identify each questionnaire collected from participating Department Chairpersons and Department Members being studied, is operationally defined as consecutive Arabic numbers. As categorical data, this serves as the unique identifying number assigned to each questionnaire used as a rubric to organize the data.

Department Chairperson's Identification Number (CHID), conceptually defined as the identifying number that connects participating Department Members with their Department Chairpersons, is instrumentally defined as "Department Chairperson's Identification Number." As categorical data, this is the unique identifying Arabic number assigned to each participating Department Chairperson and also assigned to each corresponding Department Member thereby connecting them for the purpose of data analysis.

## The Independent and Dependent Variables

The nine independent (level-one) and three dependent (level-two) variables were derived from the responses to the 45 items on the MLQ Rater Form (5X-Short), a 5-point, Likert-type scale with the anchors 4:3:2:1:0, with 0 = Not at all, 1 = Once in a while, 2 = Sometimes, 3 = Fairly often, and 4 = Frequently, if not always. To measure each of the 12 variables, the score for each item was added and averaged by dividing by either the number of items included in the scale, or the number of items answered, creating an exact interval scale of 0 to 16 for each of the nine independent variables and the dependent variable Effectiveness (EFF), of 0 to 12 for Extra Effort (EE), and 0 to 8 for Satisfaction (SAT). Because of the specifications of the copyright holder that only 5 of the 45 items may be reproduced in this research (Appendix E), sample questions are available only for five of the 12 variables. Their conceptual and permitted instrumental definitions follow.

### **Independent (Level-One) Variables**

The conceptual and permitted instrumental definitions for the nine independent (level-one) variables are:

Idealized-Influence Attributed (II-A), conceptually defined as the extent to which followers perceive their leaders to be charismatic, confident, powerful, and focused on higher order ideals and ethics, is instrumentally defined by item 18, “Goes beyond self-interest for the good of the group,” along with items 10, 21, and 25.

Idealized-Influence Behavior (II-B), conceptually defined as the extent to which followers perceive that the charismatic actions of their leaders focus on values, beliefs, and a sense of mission, is instrumentally defined by items 6, 14, 23, and 34.

Inspirational Motivation (IM), conceptually defined as the extent to which followers believe that their leaders possess the energy, initiative, persistence, and a vision that move them to achieve performance outcomes that exceed expectations, as well as develop their leadership

potential, is instrumentally defined by item 9, “Talks optimistically about the future,” along with items 13, 26, and 36.

Intellectual Stimulation (IS), conceptually defined as the extent to which followers believe that their leaders possess the ability to stimulate them to be innovative and creative, to get them to question the tried ways of solving problems, to encourage them to examine problems from different angles, and to involve them in the decision-making process within their organizations, is instrumentally defined by items 2, 8, 30, and 32.

Individualized Consideration (IC), conceptually defined as the extent to which followers perceive their leaders to be focused on understanding their needs, and to be working continuously on getting them—the followers—to develop to their full potential, is instrumentally defined by items 15, 19, 29, and 31.

Contingent Reward (CR), conceptually defined as the extent to which followers perceive their leaders to be involved in constructive transactions with them, clarifying expectations and offering recognition when goals are achieved, is instrumentally defined by item 35, “Expresses satisfaction when I meet expectations,” along with items 1, 11, and 16.

Management-by-Exception Active (MBE-A), conceptually defined as the extent to which followers perceive their leaders to be focused on monitoring and controlling them through forced compliance with rules and regulations and expectations for meeting performance standards and behavioral norms, is instrumentally defined by item 27, “Directs my attention toward failures to meet standards,” along with items 4, 22, and 24.

Management-by-Exception Passive (MBE-P), conceptually defined as the degree to which leaders are perceived by followers to display passive and reactive modes of behavior that do not respond to situations and problems systematically, and avoid specifying agreements, clarifying expectations, and providing goals and standards to be attained by followers, is instrumentally defined by items 3, 12, 17, and 20.



Laissez-Faire Leadership (LF), conceptually defined as the degree to which followers perceive their leaders to be reactive, taking corrective action only after problems have become serious, and often avoiding making any decisions at all, is instrumentally defined by items 5, 7, 28, and 33.

### **Independent (Level-Two) Variables**

The four independent level-two personal variables, indicated below, elicit information that is considered to be demographic in nature and instrumentally defined in a manner that is similar to those presented in the questionnaires prepared by the statistical institutions in Jamaica and the United States mentioned above. These are:

Leader Gender (LGEN), an indication of whether or not the leader is female or male, is operationally defined as categorical data, with values of 0 for female, and 1 for male.

Formal Leadership Training (FLTR), the level of leadership education acquired and certified through educational institutions by the leader prior to or during the period of his or her appointment as a Department Chairperson, is ordinal data, with 0 representing no formal leadership training, 7 representing postgraduate certification, and with 8 representing any other training not specified on the questionnaire.

Informal Leadership Training (ILTR), the sum of the number of leadership exposures (such as none, experience, challenging assignments, modeling by superiors, job rotation, coaching, mentoring, *e*-mentoring programs, personal development, counseling, and any other specified exposures) not acquired and certified through educational institutions, and received prior to or during the period of the appointment of the leader as a Department Chairperson, is discrete data numbered from 1 to 10 representing each of the exposures itemized above.

Years of Service as an Educator (LYOS), the number of years for which the leader has been working as an educator, is ordinal data, with the number presented representing the total number of years of service of each of the relevant individuals.

## **Dependent Variables**

The conceptual and permitted instrumental definitions for the three dependent variables are:

Extra Effort (EE), the frequency with which raters perceive their leaders to motivate them to do more than they expected to do, thus heightening their desire to succeed and increasing their willingness to try harder, is instrumentally defined by items 39, 42, and 44.

Effectiveness (EFF), how effective raters perceive their leaders to be at interacting at different levels of the organization, meeting the job-related needs of others, representing their group to higher authority, meeting organizational requirements, and leading a group that is effective, is instrumentally defined by item 45, “Leads a group that is effective,” along with items 37, 40, and 43.

Satisfaction (SAT), the extent to which raters are satisfied with their leaders’ methods of working with others, is instrumentally defined by items 38 and 41.

Further information regarding the conceptual, instrumental, and operational definition of the demographic, level-one, level-two, and outcome variables may be found in the Table of Specifications in Appendix G.

## **Instrumentation**

One of the set of instruments from the MLQ, the Multifactor Leadership Questionnaire (MLQ) Rater Form (5X-Short)—developed by Avolio and Bass (1995) and adjusted over the years—and one researcher-developed demographic questionnaire, the Leader Attributes and Behaviors Demographic Information (LABDI) Leader Form, were used in this research.

### **The Multifactor Leadership Questionnaire (MLQ) Rater Form (5X-Short)**

The primary questionnaire, the Multifactor Leadership Questionnaire (MLQ) Rater Form (5X-Short), was developed by Avolio and Bass to reflect a range of leader attributes and

behaviors representative of the Passive/Avoidant, Transactional, and Transformational Leadership Styles, and called by Bass (1998) a Full-Range Leadership Model.

Used by raters to evaluate their leaders, the MLQ Rater Form (5X-Short) is comprised of 45 items, with 36 items designated to the nine style variables, and the remaining nine items designated to the three variables related to the outcomes of leadership.

In addition to the four personal variables, the independent variables studied in this research were the nine variables related to Transformational, Transactional, and Passive/Avoidant Leadership styles. Leader attributes were measured by the Transformational Leadership variables of Idealized-Influence Attributed (II-A) with four items. Leader Behaviors were measured by the Transformational Leadership variables of Idealized-Influence Behavior (II-B) with four items, Inspirational Motivation (IM) with four items, Intellectual Stimulation (IS) with four items, and Individualized Consideration (IC) with four items; the Transactional Leadership variables of Contingent Reward (CR) with four items, and Management-by-Exception Active (MBE-A) with four items; and the Passive/Avoidant Leadership variables of Management-by-Exception Passive (MBE-P) with four items, and Laissez-Faire Leadership (LF) with four items.

The dependent variables were measured by the nine items related to the three outcomes of leadership, distributed as follows: Extra Effort (EE) with three items, Effectiveness (EFF) with four items, and Satisfaction (SAT) with two items, as well as four personal variables derived from the researcher-developed demographic questionnaire completed by each of the Department Chairpersons regarding himself or herself, and the department chaired by him or her.

### **Purposes, Description, Administration, and Use**

The MLQ Rater Form (5X-Short) has been, and continues to be, used in a variety of situations. Because it was used as the major questionnaire in this research, it consequently becomes necessary to identify some of its major purposes, to describe the instrument, and to discuss its administration and use.

## Major purposes

The MLQ Rater Form (5X-Short) has been widely used in field and laboratory research to study the Transformational, Transactional, and Passive/Avoidant Leadership Styles. In addition to its major uses, it can be aptly used “for selection, transfer, and promotion activities as well as for individual, group, or organizational development and counseling” (Avolio & Bass, 2004, p. 7).

**Uses in field and laboratory research.** In a multiplicity of organizations, the ratings of leaders by their contemporaries produced results that demonstrated a positive correlation between both specific objective and subjective criteria of Effectiveness and the Transformational Leadership Factor Scales, and associate them with Satisfaction with their leaders. Additionally, while the results on the Transactional Contingent Reward Scale were lower among these relationships, there was still a positive and significant relationship between them. To the contrary, however, there were strong negative associations among the relationships on the Management-by-Exception Passive, or the Laissez-Faire Leadership Scales.

This prototype of results was confirmed by the first major analysis of the literature (Lowe, Kroeck, & Sivasubramaniam, 1996), which found that Transformational Leadership was the strongest and most positive predictor of success, whether or not there were subjective or objective measures of the outcomes of leadership. There was also a consistent hierarchical pattern of results which showed that regardless of the target leader’s level in the organization, Transformational Leadership was a more positive predictor of Effectiveness and Satisfaction than was Transactional Leadership, which in turn, was a more positive predictor than Management-by-Exception Passive and the Laissez-Faire Leadership. These findings were confirmed by a more recent meta-analysis of leadership-related literature, conducted by Dumdum et al. (2002).

**Other uses.** The scores derived from using the MLQ Rater Form (5X-Short) can be used to assist with the selection of candidates to training programs, to positions of leadership, and for

promotion to supervisory positions. In addition, these scores may be used in tandem with other assessments to provide more exhaustive information on the performance and leadership capacities of potential candidates in each category.

These uses, although of major importance to the development of effective leaders, are not the focus of this study. In this case, Department Chairpersons who are already actively functioning in their positions of leadership in selected Jamaican universities provided personal data regarding their gender, leadership training, and years of service as educators by answering a demographic questionnaire. The relationship between these personal variables and the leader attributes and behaviors of these Department Chairpersons, tested by the MLQ Rater Form (5X-Short), was studied, using the evaluations of each of the participating Department Members supervised by these Department Chairpersons. This was done with a view to identifying the predictive roles the four personal variables and the nine leader attributes and behaviors regarding the three outcomes of leadership—Extra Effort, Effectiveness, and Satisfaction—identified in the MLQ (Avolio & Bass, 2004). It is anticipated that the results of this study will assist in guiding the development of leader preparation programs for tertiary educators in the island of Jamaica.

#### Description

The MLQ Rater Form (5X-Short) contains 45 items that identify and measure critical leader attributes and behaviors that have been linked with organizational success. The four items used to measure the nine components of leadership are “highly inter-correlated items that are as low in correlation as possible with items of the other eight components” (Avolio & Bass, 2004, p. 13). The number of raters evaluating a single leader has ranged from three to 10 or more. Except for the stipulation that there should be no less than three raters, Avolio and Bass (2004) have indicated that “no specific optimal size for the rater group can be suggested” (p. 13). Because there is more variability when there are more raters for each leader, it is recommended that “the mean and range of ratings should be carefully reviewed” (Avolio & Bass, 2004, p. 13).

An examination of the factor structure has indicated that, in descending order, the factors—the Transformational, Transactional, and Passive/Avoidant Leadership Styles—were correlated with Extra Effort, Effectiveness, Satisfaction, with the more “corrective and passive forms of leadership being negatively correlated with the outcome measures” (Avolio & Bass, 2004, p. 74).

Over the past three decades, the MLQ has been the instrument of choice among a wide variety of groups in which leaders have been evaluated by varying raters for the purpose of reliably distinguishing between the highly effective and the ineffective leader within the military, government, educational, manufacturing, high technology, church, correctional, hospital, and volunteer organizations (Bass, 2008). In addition, others who have completed the MLQ include all of the managerial levels of Fortune 500 and 1,000 firms, numerous government and non-profit organizations, and other firms within and without the borders of the United States of America, “and various forms of the MLQ have been administered in more than 30 countries and in a multiplicity of languages in business and industrial firms, hospitals, religious institutions, military organizations, government agencies, colleges, primary schools, and secondary schools” (Avolio & Bass, 2004, p. 13). Raters have spanned the spectra of age and educational qualifications. The results of these studies have consistently found that the “psychometric properties of the MLQ are comparable for direct reports and for colleagues or peers rating leaders” (Avolio & Bass, 2004, p. 13). It has been found that despite anonymity, the ratings of leaders tended to be higher when the raters were contacted by the leaders being rated, rather than contacted by an independent authority (Seltzer & Bass, 1990).

#### Administration and use

Individuals who complete the MLQ Rater Form (5X-Short) report their perceptions of the frequency with which they, their superiors, their peers, or their subordinates, display 32 specific leader behaviors and four attributes. The attributes and behaviors comprise the nine components of Bass’s Full-Range Leadership Model. A 5-point, Likert-type scale, which possesses “a

magnitude estimation based ratio of 4:3:2:1:0, according to a tested list of anchors provided by Bass, Cascio, and O'Connor (1974),” is used (Avolio & Bass, 2004, p. 15). The anchors referred to are 0 = Not at all, 1 = Once in a while, 2 = Sometimes, 3 = Fairly often, and 4 = Frequently, if not always.

Ideally, the MLQ Rater Form (5X-Short) should be administered to all of the associates of the leader being studied, but where this is not possible, it is recommended that a neutral individual be responsible for a random selection of respondents. The questionnaire may be completed in 15 minutes, and strict confidentiality should be assured. Questionnaires may be distributed in person by an independent proctor, by internal and external mail services, and may be completed using the Internet (Avolio & Bass, 2004).

The scores of the completed MLQ Rater Form (5X-Short) may be used in research for various purposes, among which are to assist with accounting for the impact that different types of leaders have on their associates, teams, and organizations; to better understand early developmental factors and experiences that contribute to a wide range of adult leadership styles; and to provide pre-training and post-training data that may serve as the basis for evaluative research. Additionally, numerous recommendations for the use of this questionnaire for future research have been made, such as those identified by Howell (1988), Kuhnert and Lewis (1987), Shamir, House, and Arthur (1993), and Tichy and Devanna (1997).

While limitations, primarily related to inconsistent item loadings of the MLQ across regions and by level or source of rating, over time, and with numerous revisions, this questionnaire has consistently shown support for the nine-factor model as the best fit in leadership situations by region and by rater. These findings have verified the choice of this instrument for use in this research.

## The Leader Attributes and Behaviors Demographic Information (LABDI) Leader Form

The researcher-developed demographic questionnaire used in this research was the Leader Attributes and Behaviors Demographic Information (LABDI) Leader Form. This questionnaire, comprised of five items, relates to four variables—Leader Gender (LGEN) with one item, Formal Leadership Training (FLTR) with two items (with only the second of these items used in the process of data analysis since the first was used primarily as a leading question), Informal Leadership Training (ILTR) with one item, and Years of Service as an Educator (LYOS) with one item. All of these items elicit responses that will provide either categorical or ordinal data (Appendices E and F).

## The Development of the Leader Attributes and Behaviors Demographic Information (LABDI) Leader Form

To study the predictive roles of specified personal characteristics of Department Chairpersons concerning the three outcomes of leadership Extra Effort (EE), Effectiveness (EFF), and Satisfaction, (SAT), I developed the Leader Attributes and Behaviors Demographic Information (LABDI) Leader Form.

Susan J. Thomas (1999) suggests that to design a survey that works, the types of items, the response formats to be used, the scoring plans to be developed, the modes of collecting the necessary demographic information, the writing of clear instructions, the formatting of the survey items, the reviewing and revision of the survey, and points to be considered when developing open-response items, all need to be considered. Consequently, once the personal variables of the Department Chairpersons to be examined were identified, these guidelines were studied, and the practical guidelines were followed. Samples of other similar questionnaires eliciting demographic information were used as models. Additionally, the literature on leadership was perused to help identify and authenticate the necessary components that would be among the items that would best elicit the information necessary for inclusion in the survey, for example, the



commonly used approaches to informal leadership in institutions, used to develop the list that determines the degree to which Informal Leadership Training (ILTR) was experienced by Department Chairpersons (Bass, 2008; Sosik & Jung, 2010; Yukl, 2002).

After writing the items, a Table of Specifications that includes four columns—the name of the variable, along with the conceptual, instrumental, and operational definition of each of the variables—was developed to help ensure that the questionnaire met the requirements, standards, and purpose for which it was being developed. Having completed this process, the instrument was perused by three experts. Their recommendations were acknowledged and integrated into the questionnaire, thus leading to the completion of the final version of the five-item, four-variable questionnaire, the Leader Attributes and Behaviors Demographic Information (LABDI) Leader Form.

The minimum and maximum values vary for each of the five items on the LABDI Leader Form. For the only item dealing with Leader Gender (LGEN), Question 1 has a minimum categorical value of 0 and a maximum of 1. For the first of two items dealing with Formal Leadership Training (FLTR), Question 2 has a minimum categorical value of 0 and a maximum of 1. For the second of the two items dealing with Formal Leadership Training (FLTR), Question 3 has a minimum ordinal value of 1 and a maximum of 8. For the second of the two items dealing with Formal Leadership Training (FLTR), Question 3 has a minimum ordinal value of 1 and a maximum of 8, and was the only of these two items used in the process of data analysis. For the only item dealing with Informal Leadership Training (ILTR), Question 4 has a minimum categorical value of 0 and a maximum value of 10. For the only item dealing with Years of Service as an Educator (LYOS), Question 5 has a minimum ordinal value of 5 and a maximum value of 44.

This questionnaire was used to derive the level-two data, necessary for the process of data analysis using the HLM in determining whether or not the personal variables—Gender (LGEN), Formal Leadership Training (FLTR), Informal Leadership Training (ILTR), and Years

of Service as an Educator (LYOS)—were significantly related to the three outcomes of leadership and dependent variables, Extra Effort (EE), Effectiveness (EFF), and Satisfaction (SAT).

The items that were included in this, the Leader Attributes and Behaviors Demographic Information (LABDI) Leader Form, are instrumentally similar to the demographic items presented on surveys such as the Population and Housing Census prepared by the Statistical Institute of Jamaica (STATIN) and the Federal Employment Viewpoint Survey prepared by the United States Office of Personnel Management, and used to measure similar variables.

### **Data Collection**

In preparation for the mailing of the questionnaires to be sent to each institution, one copy each of the relevant letter, informed consent form, instruction sheet, code sheet, and questionnaire was placed in an envelope that was labeled either for the Department Member or for the Department Chairperson. The number of questionnaires needed for each department, as determined by the data provided by each of the participating institutions, along with one questionnaire for each Department Chairperson, was secured with a single sheet of paper identifying the department to which it was to be delivered by the contact person. An envelope with instructions and sample packages from each of the two groups of participants was prepared for each contact person. All of the pre-packaged envelopes, along with a sharpened pencil for each participant, were then placed in boxes. The boxes, addressed to the contact person in each institution, were simultaneously mailed to each institution.

The Department Chairpersons and Department Members, selected using the criteria indicated, were provided with the relevant questionnaires by the contact person identified in each of the selected institutions. The subjects were then required to complete the relevant questionnaire at their convenience, and return the completed questionnaires to the relevant contact person at a time arranged between them. Both Department Chairpersons and Department Members were asked to indicate the name of the institution, the name of the department, and the

leader code by writing the relevant code number created by arranging the departments alphabetically within each institution, and numbering them consecutively across the institutions.

### **Human Subjects Considerations**

Human subjects used to complete this instrument were all adult workers of selected universities in the island of Jamaica, who were all above the age of 18 years. They were informed both orally and in writing that their participation in the exercise was totally voluntary, and that completion of the questionnaire would be used as an indication of their informed consent. The intention was to ensure that subjects participated in non-threatening environments, as well as to ascertain that those who participated did so as a matter of choice and with the understanding that the findings of the research will be published.

In addition, in an effort to facilitate transparency, permission was sought from the major gatekeepers, the Presidents of the selected institutions studied. The Presidents or their designees were asked to communicate with all departments that met the qualifying criteria, and to convey the request, including the need of the researcher to identify the Department Chairpersons and Department Members in each case. Two form letters (Appendix C) were used to recruit Department Chairpersons and Department Members of the qualifying departments. Although the institutions, departments, and Department Chairpersons were identified using identification numbers and codes, and although Department Members indicated the level at which they serve, they were assured through instructions on an attached informed consent form that the responses of individual Department Chairpersons and Department Members would neither be made available nor accessible to the institution.

These guidelines were endorsed and confirmed by the Institutional Review Board (IRB), established for the purpose of supporting the process of scholarly research, of endorsing the sanctity of life and of assisting with the protection of the basic human rights of research

participants. This board is situated in the Office of Scholarly Research at Andrews University, in Berrien Springs, Michigan, in the United States of America.

### **Data Analysis**

The Hierarchical Linear Model (HLM), also known as Multilevel Analysis, is the method of statistical analysis that was used. The HLM 7 Hierarchical Linear and Nonlinear Modeling statistical program published by the Scientific Software International (SSI) Incorporated (2010) was used as the primary mode of data analysis, while the Statistical Package for the Social Sciences (SPSS) was used to assist in the process of organizing the data for HLM analyses, to derive descriptive statistics, to identify collinearity using Pearson Product-Moment Correlation Coefficients, and to cross-validate the findings of the HLM analyses.

Additionally, for the purpose of ensuring the integrity of the process of data analysis, certain measures were taken in the process of data collection:

The names of the institutions—which would have been arranged alphabetically to reflect the four institutions, with their identification numbers assigned as Mico University College (1), Northern Caribbean University (2), University of Technology (3), and University of the West Indies (4), and which would have seen the respondents asked to write the name of the institution that they represent—were arranged and adjusted to reflect the three participating universities, since one of the four institutions did not participate in the study.

The departments were arranged alphabetically within each institution and numbered consecutively across the institutions, meaning that the first alphabetically placed participating department in institution 1 was coded as department 1, with the first alphabetically placed participating department in institution 2 coded as department 13, and the third alphabetically placed participating department in institution 3 coded as department 32.

The Department Chairpersons (the leaders) were identified by the department name and their assigned code numbers, having identified himself or herself on the demographic

questionnaire by using the name of the department chaired by him or her, as well as the leader code number provided by the researcher. Their Department Members identified the leaders by indicating the name of the department and the leader code number on the questionnaire completed by them.

These indications also served to identify—for the researcher—the institution, the department, and the leader being rated. Department Members rated their Department Chairpersons using the MLQ Rater Form (5X-Short), consisting of 45 items; and leaders responded to the LABDI Leader Form, consisting of five demographic items regarding themselves. The data derived from this process were analyzed using the statistical procedures identified.

#### Justification for the Use of the Hierarchical Linear Model (HLM)

Research justifies the use of the HLM for the testing of hypotheses when nested data are to be analyzed. This is supported by Hofmann (1997, as cited in Zhu, Avolio, & Walumbwa, 2009), who has indicated that there are three different ways to deal with hierarchical data. The first option is to assign a score representing the unit at the higher level to the lower level. The problem with this alternative is that it cannot satisfy the assumption of independence of observations because the multiple respondents are exposed to the same group stimuli. The second option, that of aggregating the variables at the lower level into the higher level, is flawed as this approach may neglect to identify potentially meaningful individual-level variance in the outcome. This means that neither of these two approaches will optimally serve the interests of this research. The HLM is the third option that can be used to deal with hierarchically nested data structures, as it was designed to overcome the weakness of the disaggregated and aggregated approaches indicated (Gavin & Hofmann, 2002, as cited in Zhu et al., 2009).

Among the major advantages of using the HLM is that it allows researchers to simultaneously investigate relationships within a specific level and between levels (Bryk &

Raudenbush, 1992). Bickel (2007) gives credence to this view by his observation that, “explicitly acknowledging grouping through the use of multilevel regression analysis provides both improved analytical opportunities and a means of effectively addressing troublesome statistical difficulties, such as dependence among nested observations and correlated residuals” (p. 8). This selected approach will allow for the examination of the relationships involving predictors at two or more levels and an outcome at a single level, as was the case when at least three Department Members, in each case, rated one Department Chairperson.

According to Gavin and Hofmann (2002, as cited in Zhu et al., 2009), the HLM can be used to analyze conditions, such as (a) the influence of predictors at two levels of analysis (for example, individual and group) with regard to an individual-level outcome and (b) the moderating effect of group-level variables over the relationship between individual-level variables. An example of this is seen in a study in which the effect of leadership climate, defined as a group-level variable that moderates the relationship between task significance and hostility, was operationalized at the individual level. Consequently, as a result of these observations, as well as on the conceptualizations of leadership as a multilevel construct (Bickel, 2007), the HLM was used in this study.

#### Considerations Regarding Sample Size When Using the Hierarchical Linear Model (HLM)

The minimum number of respondents suggested by Warner (2009) as being necessary for the reporting of correlations that help ensure the adequacy of statistical power, for avoiding situations where there is not enough information to evaluate whether or not assumptions—including bivariate normality and linearity—is satisfied, and for avoiding situations where a negligible number of outliers have a large effect on the sample  $r$  is at least an  $N = 100$ . Although this assumption has been met at level one in this study ( $N = 148$ ), the population at level two represents fewer observations than would be ideal ( $N = 20$ ), given the guidelines for using the HLM.

The most commonly offered rule of thumb with regard to sample size for multilevel models is the use of at least 20 groups and at least 30 observations per group (Heck & Thomas, 2000). Additionally, a second guideline given by Hox (2002) indicated that a minimum of 30 groups with at least 30 observations per group should be used. He and others (Maas & Hox, 2004; Mok, 1995) make it clear that, at best, recommendations regarding sample size and sample structures are multifaceted and under-investigated subjects in multilevel analysis. This is reinforced by Bickel (2007), who, in commenting on this issue, says:

Increasing the sample size at level one does nothing to enhance statistical power at level two. Instead, as far as sample size is concerned, improving power at level two is accomplished only by increasing the number of observations at that level. (p. 282)

In addition to the view expressed in the quotation above, it has also been suggested that when doing multilevel analyses, the general principle used to determine sample size at the higher levels is to increase the number of groups, since this tends to provide better results, even if there was a diminishing the number of cases for each group (Snijders & Bosker, 1999). This suggests that any improvement in the statistical power in the analysis of the data in this research would be more likely achieved if there were more groups at level two, than an increase in the number of respondents at level one. Additionally, fewer observations in more groups are more likely to produce more power than more observations in a fewer number of groups.

Despite the smaller number of respondents than anticipated at both levels of the model in this research, the case for using multilevel analysis may be made when the intercept variance, as well as the unconditional intra-class correlation, is statistically significant (Bickel, 2007).

Having established the major potential concerns regarding the veracity of the data collected and used to arrive at the conclusions in this research, and having observed that despite the concerns indicated, the data may still be used to represent the reality that exists in the universities being studied. The following, therefore, is presented as the outcome of this research.

## The Application of the Hierarchical Linear Model (HLM)

Using the principles of the HLM in this research, analyses were focused at the levels of the Department Members and of the leaders. At level one, the level of the Department Member, the individual ratings of Department Members—done on the leader attributes and behaviors of Bass’s Full-Range Leadership Model of each individual Department Chairperson in relation to the outcomes of leadership—were tested. At level two, the level of the leader, the four personal variables—Leader Gender, Formal Leadership Training, Informal Leadership Training, and Years of Service as an Educator—were examined in relation to the nine leader attributes and behaviors of Bass’s Full-Range Leadership Model, and the results aggregated and analyzed. The models for each of the two levels, the relevant explanations of the formulae, as well as the formula for the mixed model, are indicated below.

### The Department-Member-Perception of Department Chairpersons (Level-One) Model

Level one, the level of the Department-Member-Perception of Department Chairpersons, is expressed as:

$$Y = \psi_{0j} + \psi_{1j}*(II-A_{mj}) + \psi_{2j}*(II-B_{mj}) + \psi_{3j}*(IM_{mj}) + \psi_{4j}*(IS_{mj}) + \psi_{5j}*(IC_{mj}) + \psi_{6j}*(CR_{mj}) + \psi_{7j}*(MBE-A_{mj}) + \psi_{8j}*(MBE-P_{mj}) + \psi_{9j}*(LF_{mj}) + e_{mj}, \text{ where:}$$

$Y$  = The predicted score of the perceptions of individual Department Members regarding their Department Chairpersons.

$\psi_{0j}$  = The predicted mean score for Department-Member-Perceptions of Department Chairpersons.

$\psi_{1j}$  = The regression slope representing the effect of the independent variable Idealized-Influence Attributed (II-A) on each of the three outcomes of leadership Extra Effort (EE), Effectiveness (EFF), and Satisfaction (SAT).



$\psi_{2j}$  = The regression slope representing the effect of the independent variable Idealized-Influence Behavior (II-B) on each of the three outcomes of leadership Extra Effort (EE), Effectiveness (EFF), and Satisfaction (SAT).

$\psi_{3j}$  = The regression slope representing the effect of the independent variable Inspirational Motivation (IM) on each of the three outcomes of leadership Extra Effort (EE), Effectiveness (EFF), and Satisfaction (SAT).

$\psi_{4j}$  = The regression slope representing the effect of the independent variable Intellectual Stimulation (IS) on each of the three outcomes of leadership Extra Effort (EE), Effectiveness (EFF), and Satisfaction (SAT).

$\psi_{5j}$  = The regression slope representing the effect of the independent variable Individualized Consideration (IC) on each of the three outcomes of leadership Extra Effort (EE), Effectiveness (EFF), and Satisfaction (SAT).

$\psi_{6j}$  = The regression slope representing the effect of the independent variable Contingent Reward (CR) on each of the three outcomes of leadership Extra Effort (EE), Effectiveness (EFF), and Satisfaction (SAT).

$\psi_{7j}$  = The regression slope representing the effect of the independent variable Management-by-Exception Active (MBE-A) on each of the three outcomes of leadership Extra Effort (EE), Effectiveness (EFF), and Satisfaction (SAT).

$\psi_{8j}$  = The regression slope representing the effect of the independent variable Management-by-Exception Passive (MBE-P) on each of the three outcomes of leadership Extra Effort (EE), Effectiveness (EFF), and Satisfaction (SAT).

$\psi_{9j}$  = The regression slope representing the effect of the independent variable Laissez-Faire Leadership (LF) on each of the three outcomes of leadership Extra Effort (EE), Effectiveness (EFF), and Satisfaction (SAT).

$e_{mj}$  = The residual error for Department-Member-Perception  $m$  in a department chaired by an individual Department Chairperson  $j$ .

For this equation, there is an assumption that  $e_{mj}$  is distributed normally with a mean of zero, and that there is constant variation across Department Chairpersons.

### The Department-Chairperson Personal Variables (Level-Two) Model

Level two, the level of the Department-Chairperson personal variables, is expressed as:

$$\psi_{0j} = \gamma_{00} + \gamma_{01} *(LGEN_j) + \gamma_{02} *(FLTR_j) + \gamma_{03} *(ILTR_j) + \gamma_{04} *(LYOS_j) + u_{0j}, \text{ where:}$$

$\psi_{0j}$  = The predicted mean score for Department-Member-Perceptions of Department Chairpersons.

$\gamma_{00} = \gamma_{01} *(LGEN) + \gamma_{02} *(FLTR) + \gamma_{03} *(ILTR) + \gamma_{04} *(LYOS)$ , and are the regression coefficients—Leader Gender (LGEN), Formal Leadership Training (FLTR), Informal Leadership Training (ILTR), and Years of Service as an Educator (LYOS)—associated with the personal variables of the Department Chairpersons  $j$ , respectively.

$u_{0j}$  = The unique random effects associated with each Department Chairperson.

The level-one and level-two models identified are the same for each of the three outcome variables, Extra Effort (EE), Effectiveness (EFF), Satisfaction (SAT).

### **Summary**

While each approach to research has its merits and flaws, it is important that the chosen method is correctly orchestrated to arrive at useful conclusions. It is hoped that the use of the quantitative approach, the methodologies employed, and the selected statistical approach have provided data that will be of benefit to the researcher, to the individuals and institutions studied, as well as to the nation of Jamaica. It is also anticipated that the results will make an important contribution to the existing body of knowledge regarding the relationship between the four personal variables, and the nine leader attributes and behaviors of Bass's Full-Range Leadership Model, that predict the three outcomes of leadership as perceived by Department Members regarding the leadership of their Department Chairpersons in selected universities in Jamaica.

## CHAPTER IV

### RESULTS

#### **Introduction**

The results of this two-level HLM study of the predictive roles of personal variables and the leader attributes and behaviors of Department Chairpersons regarding the outcomes of leadership as perceived by Department Members in selected Jamaican universities have yielded some significant findings. These results have been influenced by the response rate, as well as by other attending challenges associated with the research process, and in particular with the specifications necessary for the selected statistical approach used in this study.

#### **Response Rate**

Of the questionnaires sent to 795 Department Members, 180 were returned. Of these, four were unusable either because the department was not identified or the questionnaire was not properly completed, and 28 were not used because Department Chairpersons of seven departments represented did not return their questionnaires. Of the questionnaires sent to 41 Department Chairpersons, 24 were returned. Four were unusable as the Department Members of two departments did not respond, one was from a department that was not qualified to participate in the study, and one was not identified by a department code. This left 20 questionnaires (48.78%) from Department Chairpersons and 148 questionnaires (18.62%) from Department Members to be used in this research. This implies that at level one, the level of the Department Members,  $N = 148$ , and that at level two, the level of the Department Chairpersons,  $N = 20$ .

### **The Multicollinearity Between the Independent Variables**

Among the assumptions for the use of linear regression is that the independent variables should not be correlated (Bryk & Raudenbush, 1992). This assumption is not satisfied for the independent variables in the MLQ Rater Form (5X-Short), as the nine independent variables are all sub-variables under three classifications of leadership (Avolio & Bass, 2004). Five variables—Idealized-Influence Attributed (II-A), Idealized-Influence Behavior (II-B), Inspirational Motivation (IM), Intellectual Stimulation (IS), and Individualized Consideration (IC)—are considered to be qualities of Transformational Leadership, and are therefore correlated with each other; two variables—Contingent Reward (CR), and Management-by-Exception Active (MBE-A)—are considered to be qualities of Transactional Leadership, and are therefore correlated with each other; and two variables—Management-by-Exception Passive (MBE-P) and Laissez-Faire Leadership (LF) are considered to be qualities of Passive/Avoidant Leadership, and are therefore correlated with each other. This research was therefore entered into with the understanding that multicollinearity exists among the independent variables. Since, however, the intent of this investigation was primarily to identify the role of the independent variables within each of the three categories of leadership in terms of their predictive roles regarding the three dependent variables, Extra Effort (EE), Effectiveness (EFF), and Satisfaction (SAT), and not to determine their importance in terms of their rank, it was determined that the HLM could still be used to study the desired phenomena.

Although specific independent variables were identified in the HLM analyses as being significant predictors of the dependent variables Extra Effort (EE), Effectiveness (EFF), and Satisfaction (SAT), a closer examination of the relationships between the independent variables using 2-tailed Pearson Product-Moment Correlation Coefficients indicates that eight of the nine independent variables exhibit significant multicollinearity among themselves (Table 1). These independent variables, grouped according to each of the three types of leadership for each variable, are indicated along with their levels of significance.

Table 1

*Pearson Product-Moment Correlation Coefficients for Level-One Variables*

Variable	II-A	II-B	IM	IS	IC	CR	MBE-A	MBE-P	LF	EE	EFF	SAT
II-A	-	-	-	-	-	-	-	-	-	-	-	-
II-B	0.759**	-	-	-	-	-	-	-	-	-	-	-
IM	0.760**	0.849**	-	-	-	-	-	-	-	-	-	-
IS	0.812**	0.764**	0.775**	-	-	-	-	-	-	-	-	-
IC	0.840**	0.712**	0.753**	0.813**	-	-	-	-	-	-	-	-
CR	0.846**	0.789**	0.800**	0.772**	0.797**	-	-	-	-	-	-	-
MBE-A	-	0.188*	-	-	-	-	-	-	-	-	-	-
MBE-P	-0.575**	-0.418**	-0.523**	-0.490**	-0.520**	-0.461**	-	-	-	-	-	-
LF	-0.517**	-0.355**	-0.396**	-0.422**	-0.422**	-0.459**	-	0.622**	-	-	-	-
EE	0.774**	0.692**	0.773**	0.757**	0.796**	0.745**	-	-0.572**	-0.464**	-	-	-
EFF	0.833**	0.750**	0.775**	0.787**	0.760**	0.777**	-	-0.613**	-0.587**	0.826**	-	-
SAT	0.837**	0.741**	0.764**	0.827**	0.815**	0.790**	-	-0.556**	-0.530**	0.827**	0.866**	-

Note. \* Correlation is significant at the 0.05 level (2-tailed). \*\* Correlation is significant at the 0.01 level (2-tailed).

Idealized-Influence Attributed (II-A) is significantly correlated to (II-B), Idealized-Influence Behavior ( $r = 0.759, p < 0.01$ ); to (IM), Inspirational Motivation ( $r = 0.760, p < 0.01$ ); to (IS), Intellectual Stimulation ( $r = 0.812, p < 0.01$ ); to (IC), Individualized Consideration ( $r = 0.840, p < 0.01$ ); for Transformational Leadership; to (CR), Contingent Reward ( $r = 0.846, p < 0.01$ ) for Transactional Leadership; and to (MBE-P), Management-by-Exception Passive ( $r = -0.575, p < 0.01$ ); and (LF), Laissez-Faire Leadership ( $r = -0.517, p < 0.01$ ) for Passive/Avoidant Leadership. Management-by-Exception Active (MBE-A) is not significantly correlated to Idealized-Influence Attributed (II-A).

Idealized-Influence Behavior (II-B) is significantly correlated to (IM), Inspirational Motivation ( $r = 0.849, p < 0.01$ ); to (IS), Intellectual Stimulation ( $r = 0.764, p < 0.01$ ); to (IC), Individualized Consideration ( $r = 0.712, p < 0.01$ ) for Transformational Leadership; and to (CR), Contingent Reward ( $r = 0.789, p < 0.01$ ); and (MBE-A), Management-by-Exception Active ( $r = 0.188, p < 0.05$ ) for Transactional Leadership; and to (MBE-P), Management-by-Exception Passive ( $r = -0.418, p < 0.01$ ); and (LF), Laissez-Faire Leadership ( $r = -0.355, p < 0.01$ ) for Passive/Avoidant Leadership.

Inspirational Motivation (IM) is significantly correlated to (IS), Intellectual Stimulation ( $r = 0.775, p < 0.01$ ); to (IC), Individualized Consideration ( $r = 0.753, p < 0.01$ ) for Transformational Leadership; to (CR), Contingent Reward ( $r = 0.800, p < 0.01$ ) for Transactional Leadership; and to (MBE-P), Management-by-Exception Passive ( $r = -0.523, p < 0.01$ ), and (LF), Laissez-Faire Leadership ( $r = -0.396, p < 0.01$ ) for Passive/Avoidant Leadership. Management-by-Exception Active (MBE-A) is not significantly correlated to Inspirational Motivation (IM).

Intellectual Stimulation (IS) is significantly correlated to (IC), Individualized Consideration ( $r = 0.813, p < 0.01$ ) for Transformational Leadership; to (CR), Contingent Reward ( $r = 0.772, p < 0.01$ ) for Transactional Leadership; and to (MBE-P), Management-by-Exception Passive ( $r = -0.490, p < 0.01$ ), and (LF), Laissez-Faire Leadership ( $r = -0.422, p < 0.01$ ) for

Passive/Avoidant Leadership. Management-by-Exception Active (MBE-A) is not significantly correlated to Intellectual Stimulation (IS).

Individualized Consideration (IC) is significantly correlated to (CR), Contingent Reward ( $r = 0.797, p < 0.01$ ) for Transactional Leadership; and to (MBE-P), Management-by-Exception Passive ( $r = -0.520, p < 0.01$ ), and (LF), Laissez-Faire Leadership ( $r = -0.422, p < 0.01$ ) for Passive/Avoidant Leadership. Management-by-Exception Active (MBE-A) is not significantly correlated to Individualized Consideration (IC).

Contingent Reward (CR) is significantly correlated to (MBE-P), Management-by-Exception Passive ( $r = -0.461, p < 0.01$ ), and (LF), Laissez-Faire Leadership ( $r = -0.459, p < 0.01$ ) for Passive/Avoidant Leadership. Management-by-Exception Active (MBE-A) is not significantly correlated to Contingent Reward (CR).

Management-by-Exception Passive (MBE-P) is significantly correlated to (LF), Laissez-Faire Leadership ( $r = 0.622, p < 0.01$ ) for Passive/Avoidant Leadership. Management-by-Exception Active (MBE-A) is not significantly correlated to Management-by-Exception Passive (MBE-P).

This multicollinearity means that while some specific independent variables were considered to be the best predictors of the three outcomes of leadership by the HLM analyses (Tables 5, 6, and 7), when the full model, in each case, was run (Tables 5, 6, and 7), the positive or negative significant correlations between the variables shown in the SPSS analysis (Table 1) suggest that any of these variables may also have become significant predictors if any of the other highly significant independent variables were removed from the relevant equations.

### **Level-One and Level-Two Data**

The MLQ Rater Form (5X-Short), completed by Department Members, provided the information that served as the level-one data, and the LABDI Leader Form, completed by Department Chairpersons, provided information that served as level-two data.

Table 2

*Statistical Package for the Social Sciences (SPSS) Level-One Descriptive Statistics*

Variable	Mean	Standard Deviation	Skewness		Kurtosis	
			Statistic	SE	Statistic	SE
Idealized-Influence Attributed (II-A)	2.80	0.98	-0.837	0.199	0.183	0.396
Idealized-Influence Behavior (II-B)	2.89	0.84	-0.909	0.199	0.692	0.396
Inspirational Motivation (IM)	3.03	0.89	-1.333	0.199	1.966	0.396
Intellectual Stimulation (IS)	2.59	0.92	-0.584	0.199	0.082	0.396
Individualized Consideration (IC)	2.49	1.00	-0.584	0.199	-0.252	0.396
Contingent Reward (CR)	2.63	1.00	-0.703	0.199	-0.440	0.396
Management-by-Exception Active (MBE-A)	1.98	0.92	-0.034	0.199	-0.554	0.396
Management-by-Exception Passive (MBE-P)	1.05	0.93	0.928	0.199	0.668	0.396
Laissez-Faire Leadership (LF)	0.93	0.93	0.954	0.199	0.297	0.396
Extra Effort (EE)	2.69	1.19	-0.855	0.199	-0.257	0.396
Effectiveness (EFF)	2.81	1.01	-1.102	0.199	0.767	0.396
Satisfaction (SAT)	2.84	1.13	-1.063	0.199	0.506	0.396

*Note.*  $N = 148$ .



### Department-Member-Perception of Department Chairpersons (Level-One) Data

Descriptive statistics regarding the perceptions of Department Members concerning the Department Chairpersons who supervise them, and determined by using the SPSS, are represented in Table 2. Here, the mean, standard deviation, skewness, and kurtosis, all determined by the responses of the Department Members, are identified.

The population responding to the 45-item MLQ Rater Form (5X-Short), which includes all of the nine independent variables, and the three dependent variables that are the outcomes of leadership, is  $N = 148$ . The independent variables have the following means and standard deviations: Idealized-Influence Attributed (II-A) has values of  $M = 2.80$ ,  $SD = 0.98$ ; Idealized-Influence Behavior (II-B) has values of  $M = 2.89$ ,  $SD = 0.84$ ; Inspirational Motivation (IM) has values of  $M = 3.03$ ,  $SD = 0.89$ ; Intellectual Stimulation (IS) has values of  $M = 2.59$ ,  $SD = 0.92$ ; Individualized Consideration (IC) has values of  $M = 2.49$ ,  $SD = 1.00$ ; Contingent Reward (CR) has values of  $M = 2.63$ ,  $SD = 1.00$ ; Management-by-Exception Active (MBE-A) has values of  $M = 1.98$ ,  $SD = 0.92$ ; Management-by-Exception Passive (MBE-P) has values of  $M = 1.05$ ,  $SD = 0.93$ ; Laissez-Faire Leadership (LF) has values of  $M = 0.93$ ,  $SD = 0.93$ . The three dependent variables have the following means and standard deviations: Extra Effort (EE) has values of  $M = 2.69$ ,  $SD = 1.19$ ; Effectiveness (EFF) has values of  $M = 2.819$ ,  $SD = 1.01$ ; and Satisfaction (SAT) with values of  $M = 2.84$ ,  $SD = 1.13$ .

### Department-Chairperson Personal (Level-Two) Data

Descriptive statistics for the personal (level-two) information provided by Department Chairpersons, and determined by using the SPSS, are represented in Tables 3 and 4. Table 3 provides the category, frequency, and percentage for each of the responses given by Department Chairpersons to the items in the Leader Attributes and Behaviors Demographic Information (LABDI) Leader Form, and Table 4 provides the mean, standard deviation, skewness, and kurtosis,

Table 3

*Frequencies for Department-Chairperson Personal (Level-Two) Variables*

Personal Variable	Category	Frequency ( <i>f</i> )	Percent ( <i>P</i> )
Gender (LGEN)	Female	12.0	60.0
	Male	8.0	40.0
Formal Leadership Training (FLTR)*	No Formal Leadership Training	4.0	20.0
	Formal Leadership Training	16.0	80.0
Formal Leadership Training (FLTR)**	Certificate	3.0	15.0
	Diploma	1.0	5.0
	Associates	0.0	0.0
	Bachelor's	0.0	0.0
	Master's	6.0	30.0
	Doctoral	4.0	20.0
	Postgraduate	1.0	5.0
	Other	1.0	5.0
Informal Leadership Training (ILTR)	No Informal Leadership Training	1.0	1.1
	Prior Leadership Opportunities	16.0	16.8
	Challenging Job Assignments	17.0	17.9
	Modeling by Leaders	9.0	9.5
	Job Rotation	8.0	8.4
	Coaching by Leaders	7.0	7.4
	Mentoring by Leaders	9.0	9.5
	E-mentoring Programs	1.0	1.1
	Personal Development	16.0	16.8
	Leadership Counseling	6.0	6.3
Years of Service as an Educator (LYOS)	5 Years	2.0	10.0
	7 Years	1.0	5.0
	8 Years	2.0	10.0
	10 Years	1.0	5.0
	12 Years	1.0	5.0
	15 Years	1.0	5.0
	16 Years	1.0	5.0
	18 Years	1.0	5.0
	20 Years	2.0	10.0
	22 Years	2.0	10.0
	32 Years	1.0	5.0
	35 Years	1.0	5.0
	38 Years	1.0	5.0
40 Years	2.0	10.0	
44 Years	1.0	5.0	

*Note.* *N* = 20. \* Whether or not training was received. \*\* The level of training received.

all determined by the responses of the Department Chairpersons.

The population responding to the five-item LABDI Leader Form for the four personal variables is  $N = 20$ . The frequencies, means, and standard deviations for each of these variables are indicated. For Item 1 dealing with Gender (LGEN) there were 12 females and 8 males ( $M = 0.40$ ,  $SD = 0.50$ ). For Item 2, which ascertained whether or not Formal Leadership Training (FLTR) was received, it was found that 4 participants had received no training, while 16 participants had received training. Of these 16 who had received this training, 3 had Certificates, 1 had a Diploma, none had Associates degrees, none had Bachelor's degrees, 6 had Master's degrees, 4 had Doctoral degrees, 1 had Postgraduate degrees, and 1 had other forms of Formal Leadership Training than those identified in the responses to Item 3, dealing with the level of leadership training ( $M = 3.70$ ,  $SD = 2.72$ ). For Item 4 dealing with Informal Leadership Training (ILTR), 16 had Prior Leadership Opportunities, 17 had been given Challenging Job Assignments, 9 were exposed to Modeling by their Leaders, 8 had been involved in Job Rotation exercises, 7 had

Table 4

*Statistical Package for the Social Sciences (SPSS) Level-Two Descriptive Statistics*

Variable	Mean	Standard Deviation	Skewness		Kurtosis	
			Statistic	SE	Statistic	SE
Leader Gender (LGEN)	0.40	0.50	0.442	0.512	-2.018	0.992
Formal Leadership Training (FLTR)	3.70	2.72	-0.260	0.512	-1.540	0.992
Informal Leadership Training (ILTR)	4.75	2.02	0.506	0.512	-0.479	0.992
Years of Service as an Educator (LYOS)	20.85	12.93	0.501	0.512	-1.119	0.992

*Note.*  $N = 20$ .

experienced Coaching by Leaders, 9 had experienced Mentoring by Leaders, 1 was involved in E-mentoring Programs, 16 had engaged in activities for Personal Development, 6 had received Leadership Counseling, and 5 had other exposures not mentioned ( $M = 4.75$ ,  $SD = 2.02$ ). For Years of Service as an Educator (LYOS), the length of service ranged from 5 to 48 ( $M = 20.85$ ,  $SD = 12.93$ ). These results were the level-two data used for the analyses in this research (Table 4).

### **Hypothesis Testing**

The HLM, used to statistically analyze this data structure at two levels in which Department Members (level one) were nested within departments and their Chairpersons (level two), revealed some significant findings. The predictive roles of the nine independent variables Idealized-Influence Attributed (II-A), Idealized-Influence Behavior (II-B), Inspirational Motivation (IM), Intellectual Stimulation (IS), Individualized Consideration (IC), Contingent Reward (CR), Management-by-Exception Active (MBE-A), Management-by-Exception Passive (MBE-P), and Laissez-Faire Leadership (LF); and the four personal variables Leader Gender (LGEN), Formal Leadership Training (FLTR), Informal Leadership Training (ILTR), and Years of Service as an Educator (LYOS), on each of the three outcomes of leadership Extra Effort (EE), Effectiveness (EFF), and Satisfaction (SAT), were analyzed using the formulae indicated (pp. 87-89) for each of the three hypotheses.

Tables 5, 6, and 7 show the results of the HLM analyses as well as a comparison of the two models, the null (or unconditional) model, and the full model for each of the three hypotheses (Appendix H). Also included in each of these tables are the proportion of variance accounted for by the full model, the intra-class correlations, the  $t$ -ratios, the number of parameters estimated, the degrees of freedom for the fixed effects, the chi-square variance and the attending degrees of freedom of each of the models, and the model deviance for each of the three research hypotheses.

To proceed with the analysis, exploratory multilevel analyses were done to determine whether or not there was any significance to make it feasible to continue to analyze the data

necessary for pursuing the study of the predictive roles of the Department-Chairperson personal variables and the Department-Member-Perceptions of Department Chairpersons regarding the three dependent variables and outcomes of leadership Extra Effort (EE), Effectiveness (EFF), and Satisfaction (SAT), using the HLM 7 Hierarchical Linear and Nonlinear Modeling statistical program (Raudenbush, Bryk, & Congdon, 2010). Department Members were used as the level-one unit, and Department Chairpersons were used as the level-two unit.

### Hypothesis 1

The first null (unconditional) model was tested with the following null hypothesis:

Null Hypothesis 1: There is no significant relationship between Leader Gender (LGEN), Formal Leadership Training (FLTR), Informal Leadership Training (ILTR), and Years of Service as an Educator (LYOS); and Idealized-Influence Attributed (II-A), Idealized-Influence Behavior (II-B), Inspirational Motivation (IM), Intellectual Stimulation (IS), Individualized Consideration (IC), Contingent Reward (CR), Management-by-Exception Active (MBE-A), Management-by-Exception Passive (MBE-P), and Laissez-Faire Leadership (LF) that predicts Extra Effort (EE), as perceived by Department Members regarding the leadership of their Department Chairpersons.

Table 5 shows the results of the HLM analysis for Hypothesis 1. The exploratory multilevel analysis of the relationships of measures of Department-Member-Perceptions of Department Chairpersons with Department-Chairperson personal variables for the dependent variable and outcome of leadership Extra Effort (EE) signified that for the initial null (unconditional) model in which no independent variables were used, there was an intra-class correlation coefficient of 0.289, indicating that 28.9% of the variance in Department-Member-Perception could be attributed to differences in Department Chairpersons. The variance within Department Chairpersons was 1.022. These figures, along with a significant mean with values of 2.768 ( $SE = 0.172$ ,  $t_{(19)} = 16.064$ ,  $p < 0.001$ ), suggest that an HLM analysis could potentially lead to variance attributable to differences in Department Chairpersons. It was hypothesized that all

Table 5

*Hierarchical Linear Model Estimates for the Relationships Between the Independent Variables and the Dependent Variable Extra Effort*

Variable	Null Model			Full Model		
	Estimate	SE	T-Ratio	Estimate	SE	T-Ratio
Fixed Effects for Extra Effort (EE)						
Intercept $\gamma_{00}$	2.768***	0.172***	16.064***	0.340	0.363	0.936
Gender (LGEN) $\gamma_{01}$	-	-	-	0.084	0.162	0.521
Formal Leadership Training (FLTR) $\gamma_{02}$	-	-	-	-0.011	0.027	-0.423
Informal Leadership Training (ILTR) $\gamma_{03}$	-	-	-	-0.051	0.040	-1.269
Years of Service as an Educator (LYOS) $\gamma_{04}$	-	-	-	-0.000	0.006	-0.079
Degrees of Freedom for Level-Two Variables	-	-	-	-	-	15.000
Extra Effort (EE) Slopes						
Idealized-Influence Attributed (II-A) $\psi_1$	-	-	-	0.094	0.134	0.707
Idealized-Influence Behavior (II-B) $\psi_2$	-	-	-	-0.030	0.139	-0.217
Inspirational Motivation (IM) $\psi_3$	-	-	-	0.360**	0.138**	2.602**
Intellectual Stimulation (IS) $\psi_4$	-	-	-	0.171	0.117	1.463
Individualized Consideration (IC) $\psi_5$	-	-	-	0.372**	0.119**	3.118**
Contingent Reward (CR) $\psi_6$	-	-	-	0.075	0.117	0.638
Management-by-Exception Active (MBE-A) $\psi_7$	-	-	-	-0.120	0.062	-0.193
Management-by-Exception Passive (MBE-P) $\psi_8$	-	-	-	-0.165*	0.083*	-1.990*
Laissez-Faire Leadership (LF) $\psi_9$	-	-	-	-0.013	0.079	-0.172
Degrees of Freedom for Level-One Variables	-	-	19.000	-	-	119.000
Random Components for Extra Effort (EE)						
Extra Effort Variance Component ( $\tau$ )	0.416***	-	-	0.024	-	-
Variance Within Extra Effort ( $O^2$ )	1.022***	-	-	0.391	-	-
Intra-class Correlation	0.289	-	-	0.057	-	-
Number of Parameters Estimated	2.000	-	-	2.000	-	-
Chi-Square Variance ( $\chi^2$ )	75.779***	-	-	18.643	-	-
Degrees of Freedom for Chi-Square Variance ( $\chi^2$ )	19.000	-	-	15.000	-	-
Model Deviance	447.817	-	-	325.730	-	-

\*  $p < 0.05$ . \*\*  $p < 0.01$ . \*\*\*  $p < 0.001$ .

nine of the Department-Member-Perception level variables and all four of the Department-Chairperson level variables would explain differences in Department-Member-Perception.

To analyze the full model, the nine independent Department-Member-Perception variables as well as the four independent Department-Chairperson personal variables were entered into the HLM 7 Statistical Program. Each of the level-one variables was used as a predictor of the expected variance of the Department-Member-Perception of Extra Effort (EE). The intercept for the outcome variable Extra Effort (EE) was 0.340 ( $SE = 0.363$ ,  $t_{(15)} = 0.936$ ,  $p > 0.05$ ).

As shown in Table 5, Inspirational Motivation (IM), with the positive statistically significant regression coefficient of 0.360 ( $SE = 0.138$ ,  $t_{(119)} = 2.602$ ,  $p < 0.01$ ); Individualized Consideration (IC), with the positive statistically significant regression coefficient of 0.372 ( $SE = 0.119$ ,  $t_{(119)} = 3.118$ ,  $p < 0.01$ ); and Management-by-Exception Passive (MBE-P), with the negative statistically significant regression coefficient of -0.165 ( $SE = 0.083$ ,  $t_{(119)} = -1.990$ ,  $p < 0.05$ ), were found to be significant predictors of the outcome of leadership, Extra Effort (EE), at level one. The error variance for Extra Effort (EE) decreased from 1.438 for the null (unconditional) model, to 0.415 for the full model, indicating that the full model explains 71.1% of the variance in this outcome of leadership. There were, however, no variables at level two that were significant predictors of this dependent variable and outcome of leadership.

The findings indicate that three independent variables—Inspirational Motivation (IM), Individualized Consideration (IC), and Management-by-Exception Passive (MBE-P)—are significant predictors of the dependent variable and outcome of leadership Extra Effort (EE). This suggests the discrediting of the first null hypothesis and the partial acceptance of the first research hypothesis.

## Hypothesis 2

The second null (unconditional) model was tested with the following null hypothesis:

Null Hypothesis 2: There is no significant relationship between Leader Gender (LGEN), Formal Leadership Training (FLTR), Informal Leadership Training (ILTR), and Years of Service as

an Educator (LYOS); and Idealized-Influence Attributed (II-A), Idealized-Influence Behavior (II-B), Inspirational Motivation (IM), Intellectual Stimulation (IS), Individualized Consideration (IC), Contingent Reward (CR), Management-by-Exception Active (MBE-A), Management-by-Exception Passive (MBE-P), and Laissez-Faire Leadership (LF) that predicts Effectiveness (EFF), as perceived by Department Members regarding the leadership of their Department Chairpersons.

Table 6 shows the results of the HLM analysis for Hypothesis 2. The exploratory multilevel analysis of the relationships of measures of Department-Member-Perceptions of Department Chairpersons with Department-Chairperson personal variables for the dependent variable and outcome of leadership Effectiveness (EFF) signified that for the initial null (unconditional) model in which no independent variables were used, there was an intra-class correlation coefficient of 0.257, indicating that 25.7% of the variance in Department-Member-Perception could be attributed to differences in Department Chairpersons. The variance within Department Chairpersons was 0.798. These figures, along with a significant mean with values of 2.855 ( $SE = 0.144$ ,  $t_{(19)} = 19.854$ ,  $p < 0.001$ ), suggest that an HLM analysis could potentially lead to variance attributable to differences in Department Chairpersons. It was hypothesized that all nine of the Department-Member-Perception level variables and all four of the Department-Chairperson level variables would explain differences in Department-Member-Perception.

To analyze the full model, the nine independent Department-Member-Perception variables as well as the four independent Department-Chairperson personal variables were entered into the HLM 7 Statistical Program. Each of the level-one variables was used as a predictor of the expected variance of the Department-Member-Perception of Effectiveness (EFF). The intercept for the outcome variable Effectiveness (EFF) was 0.705 ( $SE = 0.253$ ,  $t_{(15)} = 2.787$ ,  $p < 0.05$ ).

As shown in Table 6, Idealized-Influence Attributed (II-A), with the positive statistically significant regression coefficient of 0.276 ( $SE = 0.101$ ,  $t_{(119)} = 2.745$ ,  $p < 0.01$ ); Intellectual Stimulation (IS), with the positive statistically significant regression coefficient of 0.183 ( $SE = 0.088$ ,  $t_{(119)} = 2.085$ ,  $p < 0.05$ ); and Laissez-Faire Leadership (LF), with the negative



Table 6

*Hierarchical Linear Model Estimates for the Relationships Between the Independent Variables and the Dependent Variable Effectiveness*

Variable	Null Model			Full Model		
	Estimate	SE	T-Ratio	Estimate	SE	T-Ratio
Fixed Effects for Effectiveness (EFF)						
Intercept $\gamma_{00}$	2.855***	0.144***	19.854***	0.705*	0.253*	2.787*
Gender (LGEN) $\gamma_{01}$	-	-	-	-0.073	0.105	-0.694
Formal Leadership Training (FLTR) $\gamma_{02}$	-	-	-	-0.019	0.016	-1.172
Informal Leadership Training (ILTR) $\gamma_{03}$	-	-	-	-0.019	0.026	-0.743
Years of Service as an Educator (LYOS) $\gamma_{04}$	-	-	-	0.003	0.004	0.767
Degrees of Freedom for Level-Two Variables	-	-	-	-	-	15.000
Effectiveness (EFF) Slopes						
Idealized-Influence Attributed (II-A) $\psi_1$	-	-	-	0.276**	0.101**	2.745**
Idealized-Influence Behavior (II-B) $\psi_2$	-	-	-	0.156	0.103	1.515
Inspirational Motivation (IM) $\psi_3$	-	-	-	0.191	0.101	1.894
Intellectual Stimulation (IS) $\psi_4$	-	-	-	0.183*	0.088*	2.085*
Individualized Consideration (IC) $\psi_5$	-	-	-	0.050	0.087	0.575
Contingent Reward (CR) $\psi_6$	-	-	-	0.054	0.087	0.618
Management-by-Exception Active (MBE-A) $\psi_7$	-	-	-	-0.028	0.046	-0.617
Management-by-Exception Passive (MBE-P) $\psi_8$	-	-	-	-0.094	0.062	-1.520
Laissez-Faire Leadership (LF) $\psi_9$	-	-	-	-0.168**	0.059**	-2.849**
Degrees of Freedom for Level-One Variables	-	-	19.000	-	-	119.000
Random Components for Effectiveness (EFF)						
Effectiveness (EFF) Variance Component ( $\tau$ )	0.276	-	-	0.000	-	-
Variance Within Effectiveness ( $O^2$ )	0.798	-	-	0.225	-	-
Intra-class Correlation	0.257	-	-	0.000	-	-
Number of Parameters Estimated	2.000	-	-	2.000	-	-
Chi-Square Variance ( $\chi^2$ )	61.340	-	-	10.566	-	-
Degrees of Freedom for Chi-Square Variance ( $\chi^2$ )	19.000	-	-	15.000	-	-
Model Deviance	409.229	-	-	246.935	-	-

\*  $p < 0.05$ . \*\*  $p < 0.01$ . \*\*\*  $p < 0.001$ .

statistically significant regression coefficient of -0.168 ( $SE = 0.059$ ,  $t_{(119)} = -2.849$ ,  $p < 0.01$ ), were found to be significant predictors of the outcome of leadership, Effectiveness (EFF), at level one. The error variance for Effectiveness (EFF) decreased from 1.074 for the null (unconditional) model, to 0.225 for the full model, indicating that the full model explains 79.1% of the variance in this outcome of leadership. There were, however, no variables at level two that were significant predictors of this dependent variable and outcome of leadership.

The findings indicate that three independent variables—Idealized-Influence Attributed (II-A), Intellectual Stimulation (IS), and Laissez-Faire Leadership (LF)—are significant predictors of the dependent variable and outcome of leadership Effectiveness (EFF). This suggests the discrediting of the second null hypothesis and the partial acceptance of the second research hypothesis.

### Hypothesis 3

The third null (unconditional) model was tested with the following null hypothesis:

Null Hypothesis 3: There is no significant relationship between Leader Gender (LGEN), Formal Leadership Training (FLTR), Informal Leadership Training (ILTR), and Years of Service as an Educator (LYOS); and Idealized-Influence Attributed (II-A), Idealized-Influence Behavior (II-B), Inspirational Motivation (IM), Intellectual Stimulation (IS), Individualized Consideration (IS), Contingent Reward (CR), Management-by-Exception Active (MBE-A), Management-by-Exception Passive (MBE-P), and Laissez-Faire Leadership (LF) that predicts Satisfaction (SAT), as perceived by Department Members regarding the leadership of their Department Chairpersons.

Table 7 shows the results of the HLM analysis for Hypothesis 3. The exploratory multilevel analysis of the relationships of measures of Department-Member-Perceptions of Department Chairpersons with Department-Chairperson personal variables for the dependent variable and outcome of leadership Satisfaction (SAT) signified that for the initial null (unconditional) model in which no independent variables were used, there was an intra-class

Table 7

*Hierarchical Linear Model Estimates for the Relationships Between the Independent Variables and the Dependent Variable Satisfaction*

Variable	Null Model			Full Model		
	Estimate	SE	T-Ratio	Estimate	SE	T-Ratio
Fixed Effects for Satisfaction (SAT)						
Intercept $\gamma_{00}$	2.885***	0.147***	19.579***	0.143	0.279	0.511
Gender (LGEN) $\gamma_{01}$	-	-	-	0.165	0.117	1.413
Formal Leadership Training (FLTR) $\gamma_{02}$	-	-	-	-0.018	0.018	-1.014
Informal Leadership Training (ILTR) $\gamma_{03}$	-	-	-	-0.039	0.029	-1.339
Years of Service as an Educator (LYOS) $\gamma_{04}$	-	-	-	0.007	0.004	1.650
Degrees of Freedom for Level-Two Variables	-	-	-	-	-	15.000
Satisfaction (SAT) Slopes						
Idealized-Influence Attributed (II-A) $\psi_1$	-	-	-	0.261*	0.111*	2.362*
Idealized-Influence Behavior (II-B) $\psi_2$	-	-	-	0.118	0.114	1.037
Inspirational Motivation (IM) $\psi_3$	-	-	-	0.113	0.111	1.018
Intellectual Stimulation (IS) $\psi_4$	-	-	-	0.324**	0.097**	3.355**
Individualized Consideration (IC) $\psi_5$	-	-	-	0.198*	0.096*	2.072*
Contingent Reward (CR) $\psi_6$	-	-	-	0.079	0.096	0.818
Management-by-Exception Active (MBE-A) $\psi_7$	-	-	-	-0.031	0.051	-0.624
Management-by-Exception Passive (MBE-P) $\psi_8$	-	-	-	-0.038	0.068	-0.552
Laissez-Faire Leadership (LF) $\psi_9$	-	-	-	-0.115	0.065	-1.772
Degrees of Freedom for Level-One Variables	-	-	19.000	-	-	119.000
Random Components for Satisfaction (SAT)						
Satisfaction Variance Component ( $\tau$ )	0.254	-	-	0.000	-	-
Variance Within Satisfaction ( $O^2$ )	1.068	-	-	0.273	-	-
Intra-class Correlation	0.192	-	-	0.002	-	-
Number of Parameters Estimated	2.000	-	-	2.000	-	-
Chi-Square Variance ( $\chi^2$ )	49.374	-	-	10.302	-	-
Degrees of Freedom for Chi-Square Variance ( $\chi^2$ )	19.000	-	-	19.000	-	-
Model Deviance	447.662	-	-	272.913	-	-

\*  $p < 0.05$ . \*\*  $p < 0.01$ . \*\*\*  $p < 0.001$ .

correlation coefficient of 0.192, indicating that 19.2% of the variance in Department-Member-Perception could be attributed to differences in Department Chairpersons. The variance within Department Chairpersons was 1.068. These figures, along with a significant mean with values of 2.885 ( $SE = 0.147$ ,  $t_{(19)} = 19.579$ ,  $p < 0.001$ ), suggest that an HLM analysis could potentially lead to variance attributable to differences in Department Chairpersons. It was hypothesized that all nine of the Department-Member-Perception level variables and all four of the Department-Chairperson level variables would explain differences in Department-Member-Perception.

To analyze the full model, the nine independent Department-Member-Perception variables as well as the four independent Department-Chairperson personal variables were entered into the HLM 7 Statistical Program. Each of the level-one variables was used as a predictor of the expected variance of the Department-Member-Perception of Satisfaction (SAT). The intercept for the outcome variable Satisfaction (SAT) was 0.143 ( $SE = 0.279$ ,  $t_{(15)} = 0.511$ ,  $p > 0.05$ ).

As shown in Table 7, Idealized-Influence Attributed (II-A), with the positive statistically significant regression coefficient of 0.261 ( $SE = 0.111$ ,  $t_{(119)} = 2.362$ ,  $p < 0.05$ ); Intellectual Stimulation (IS), with the positive statistically significant regression coefficient of 0.324 ( $SE = 0.097$ ,  $t_{(119)} = 3.355$ ,  $p < 0.01$ ); and Individualized Consideration (IC), with the positive statistically significant regression coefficient of 0.198 ( $SE = 0.096$ ,  $t_{(119)} = 2.072$ ,  $p < 0.05$ ), were found to be significant predictors of the outcome of leadership, Satisfaction (SAT), at level one. The error variance for Satisfaction (SAT) decreased from 1.322 for the null (unconditional) model, to 0.273 for the full model, indicating that the full model explains 79.3% of the variance in this outcome of leadership. There were, however, no variables at level two that were significant predictors of this dependent variable and outcome of leadership.

The findings indicate that three independent variables—Idealized-Influence Attributed (II-A), Intellectual Stimulation (IS), and Individualized Consideration (IC)—are significant predictors of the dependent variable and outcome of leadership Satisfaction (SAT). This suggests the discrediting of the third null hypothesis and the partial acceptance of the third research hypothesis.

## Summary

The results of the HLM data analyses indicated that three level-one independent variables were significant predictors of each of the three dependent variables and outcomes of leadership. Inspirational Motivation (IM), Individualized Consideration (IC), and Management-by-Exception Passive (MBE-P) were significant predictors of Extra Effort (EE). Idealized-Influence Attributed (II-A), Intellectual Stimulation (IS), and Laissez-Faire Leadership (LF) were significant predictors of Effectiveness (EFF). Idealized-Influence Attributed (II-A), Intellectual Stimulation (IS), and Individualized Consideration (IC) were significant predictors of Satisfaction (SAT). No level-two variables were found to be significant predictors of these outcomes of leadership (Appendix I). Of further significance was the finding that the full model explained 71.1% of the variance in Extra Effort (EE), 79.1% of the variance in Effectiveness (EFF), and 79.3% of the variance in Satisfaction (SAT). These findings indicated the discrediting of each of the three null hypotheses and the partial acceptance of each of the three research hypotheses.

CHAPTER V  
SUMMARY, DISCUSSION, CONCLUSIONS, IMPLICATIONS,  
AND RECOMMENDATIONS

**Introduction**

An assessment of the program contents and course requirements of selected universities in the island of Jamaica as observed in their student handbooks and curricula for the academic years between 2008 and 2010 reveals that there is a dearth of leadership training included in, or required for, most programs of study being undertaken at the undergraduate, graduate, and postgraduate levels in these institutions, with the exception of management, administration, and leadership programs. Consequently, individuals who have been trained in disciplines other than those that are directly leadership related are not formally exposed to leadership education, thereby potentially perpetuating a cycle in which there is a dearth of leadership talent for posterity. This is untenable, as many of the individuals who are presently in positions of leadership in the sphere of education in general, and in institutions of higher education in particular have, over time, unintentionally emerged as leaders. To further compound this issue, the availability of leadership training programs, especially for those who aspire to positions of leadership in institutions of higher education, is limited, and there is little coordinated approach to the provision of informal leadership exposures, traditionally left to be determined by the individual institution.

Although critical of the inadequacies of some of the available formal leadership programs, Bass and Riggio (2006) have articulated the importance of the formal training of leaders especially when the goal is the development of the attributes and behaviors of the Transformational Leader, and suggest that this leadership training should be viewed as both an art and a science that may be

enhanced by leadership education of a high quality. Speaking in support of the importance of the informal training of leaders, Hernez-Broome and Hughes (2004) have indicated that formal training should be supplemented by on-the-job developmental experiences such as coaching, mentoring, action learning, and the 360-degree feedback, since these are likely to have the greatest impact on leader development.

In tandem with the view that leader preparation is important for outstanding leadership, Hughes et al. (2009) have indicated that although there are many correlates that influence the ability of the individual to lead, studies that have examined the effects of Transformational Leadership training on leader performance in a range of disciplines in the public and private sectors around the globe indicated the ease with which Transformational Leadership skills may be developed when participants intentionally work on improving the requisite skills, thus heightening the possibility for exponentially improved leadership outcomes.

It is these concerns and the attending findings that led to this study of the predictive roles of the personal variables and the leader attributes and behaviors of Department Chairpersons regarding the outcomes of leadership as perceived by Department Members in selected Jamaican universities. The purpose of this study, therefore, was to determine whether or not the four personal variables (Leader Gender, Formal Leadership Training, Informal Leadership Training, and Years of Service as an Educator) and the nine leader attributes and behaviors of Bass's Full-Range Leadership Model (Idealized-Influence Attributed, Idealized-Influence Behavior, Inspirational Motivation, Intellectual Stimulation, Individualized Consideration, Contingent Reward, Management-by-Exception Active, Management-by-Exception Passive, and Laissez-Faire Leadership) that predict the three outcomes of leadership (Extra Effort, Effectiveness, and Satisfaction) of Department Chairpersons from the perspective of the Department Members in selected Jamaican universities.

Of a population of 795 Department Members there were 148 participants, and of a population of 41 Department Chairpersons there were 20 participants. While no other demographic data were necessary for the Department Members in this study, this information for

Department Chairpersons, gleaned from the responses to the five-item LABDI Leader Form, was central to the research questions that were considered. The frequencies, means, and standard deviations for each of these variables are indicated.

For Item 1 dealing with Gender (LGEN), there were 12 females and 8 males ( $M = 0.40$ ,  $SD = 0.50$ ). For Item 2, which ascertained whether or not Formal Leadership Training (FLTR) was received, it was found that 4 participants had received no training, while 16 participants had received training. Of these 16 who had received this training, 3 had Certificates, 1 had a Diploma, none had Associates degrees, none had Bachelor's degrees, 6 had Master's degrees, 4 had Doctoral degrees, 1 had Postgraduate degrees, and 1 had other forms of Formal Leadership Training than those seen in the responses to Item 3, dealing with the level of leadership training ( $M = 3.70$ ,  $SD = 2.72$ ). For Item 4 dealing with Informal Leadership Training (ILTR), 16 had Prior Leadership Opportunities, 17 had been given Challenging Job Assignments, 9 were exposed to Modeling by their Leaders, 8 had been involved in Job Rotation exercises, 7 had experienced Coaching by Leaders, 9 had experienced Mentoring by Leaders, 1 was involved in *E*-mentoring Programs, 16 had engaged in activities for Personal Development, 6 had received Leadership Counseling, and 5 had other exposures not mentioned ( $M = 4.75$ ,  $SD = 2.02$ ). For Years of Service as an Educator (LYOS), the length of service ranged from 5 to 48 ( $M = 20.85$ ,  $SD = 12.93$ ). These descriptive statistics, which provided the data used to derive the level-two data used for the analyses in this research, describe the Department Chairpersons whose leadership was being evaluated by their Department Members.

To further reinforce the need for outstanding leadership, numerous authors, including Burke (2002), Burns (1978), Gardner (1993), Hernez-Broome and Hughes (2004), Avolio and Bass (2004), Bass (2008), Bass and Riggio (2006), Sosik and Jung (2010), and Yukl (2002), have confirmed the need to examine leadership from the perspective of a full range of attributes and behaviors, rather than from any limited viewpoint. This concern was addressed with the development of the Full-Range Leadership Model proposed by Bass. The approach includes a



broad range of leader attributes and behaviors represented by the three leadership styles—Transformational Leadership, Transactional Leadership, and Passive/Avoidant Leadership—and is used to determine the range of leadership behaviors that exist in organizations and groups to identify those variables that best predict the three outcomes of leadership—Extra Effort (EE), the frequency with which raters perceive their leaders to motivate them to do more than they expected to do, thus heightening their desire to succeed, and increasing their willingness to try harder; Effectiveness (EFF), raters' perceptions of the effectiveness of their leaders at interacting at different levels of the organization, meeting the job-related needs of others, representing their group to higher authority, meeting organizational requirements, and leading a group that is effective; and Satisfaction (SAT), the extent to which raters are satisfied with their leaders' methods of working with others.

In addition to the nine independent variables and the three dependent variables (outcomes of leadership) identified by the MLQ Rater Form (5X-Short), four personal variables examined in this study were Gender (LGEN), Formal Leadership Training (FLTR), Informal Leadership Training (ILTR), and Years of Service as an Educator (LYOS). These variables are also significant since more women than men work as educators at all levels of the education system in Jamaica, since intentional formal and informal leadership preparation is not often a priority in the sphere of education, and since experience and expertise developed over time are often considered to be adequate preparation for promotion to positions of leadership in the realm of education.

### **Summary**

In an effort to answer the three research questions regarding the leader attributes and behaviors associated with the outcomes of leadership of Department Chairpersons as perceived by their Department Members in selected Jamaica universities, three hypotheses, as well as their associated null hypotheses, were developed and tested using the HLM 7 Hierarchical Linear and Nonlinear Modeling statistical program (Raudenbush et al., 2010), developed to analyze nested

data, was used. Department Members were used as the level-one unit, and Department Chairpersons were used as the level-two unit. The data, gleaned from the Multifactor Leadership Questionnaire (MLQ) Rater Form (5X-Short) and the Leader Attributes and Behaviors Demographic Information (LABDI) Form, were run and analyzed. The null hypothesis was discredited, and the research hypothesis partially accepted for each of the three dependent (outcome) variables.

The findings indicate that there were significant changes in the error variance between the null (unconditional) model and the full model for all three dependent variables and outcomes of leadership. The error variance for Extra Effort (EE) decreased from 1.438 to 0.415, for Effectiveness (EFF) from 1.074 to 0.225, and for Satisfaction (SAT) from 1.322 to 0.273. The full model explained 71.1% of the variance in Extra Effort (EE), 79.1% of the variance in Effectiveness (EFF), and 79.3% of the variance in Satisfaction (SAT).

For the first hypothesis, three independent level-one variables—Inspirational Motivation (IM), Individualized Consideration (IC), and Management-by-Exception Passive (MBE-P)—and none of four independent level-two personal variables were significant predictors of Extra Effort (EE). This indicates the discrediting of the first null hypothesis and the partial acceptance of the first research hypothesis.

For the second hypothesis, three independent level-one variables—Idealized-Influence Attributed (II-A), Intellectual Stimulation (IS), and Laissez-Faire Leadership (LF)—and none of four independent level-two personal variables were significant predictors of Effectiveness (EFF). This indicates the discrediting of the second null hypothesis and the partial acceptance of the second research hypothesis.

For the third hypothesis, three independent level-one variables—Idealized-Influence Attributed (II-A), Intellectual Stimulation (IS), and Individualized Consideration (IC)—and none of four independent level-two personal variables were significant predictors of Satisfaction (SAT).

This indicates the discrediting of the third null hypothesis and the partial acceptance of the third research hypothesis.

## **Discussion**

The findings of this study—indicating that some independent level-one variables identified by Bass’s Full-Range Leadership Model were significant predictors of the outcomes of leadership Extra Effort (EE), Effectiveness (EFF), and Satisfaction (SAT); and showing that the four independent level-two personal variables were not significant predictors of the three outcome variables identified in the three research hypotheses—will now be discussed.

### **Hypothesis 1**

For Hypothesis 1, three independent level-one variables are significant predictors of the outcome of leadership, Extra Effort (EE). The statistically significant and positive relationship ( $\beta = 0.360, p < 0.05$ ) between Inspirational Motivation (IM), and the dependent variable and outcome of leadership, Extra Effort (EE), tells us that those Department Chairpersons perceived by the Department Members to be inspirationally motivating, also stimulate them to make an extra effort in fulfilling their job responsibilities. The statistically significant and positive relationship ( $\beta = 0.372, p < 0.01$ ) between Individualized Consideration (IC) and the dependent variable and outcome of leadership, Extra Effort (EE), tells us that those Department Chairpersons perceived by the Department Members to consider them as unique individuals, also motivate them to make an extra effort in fulfilling their job responsibilities. The statistically significant and negative relationship ( $\beta = -0.165, p < 0.05$ ) between Management-by-Exception Passive (MBE-P) and the dependent variable and outcome of leadership, Extra Effort (EE), tells us that those Department Chairpersons perceived by the Department Members to display passive and reactive modes of behavior that do not respond to situations and problems systematically, and avoid specifying agreements, clarifying expectations, and providing goals and standards to be attained by followers, are less likely to make an extra effort in fulfilling their job responsibilities (Table 5).

Support for these results is found in numerous sources including Grazier (1992), who has found that the relationship between the degree of employee Extra Effort and Transformational Leadership lies in the level of motivation which creates inducements for workers to create excellence. Such a leader, Grazier argues, is able to inspire and encourage workers to consistently perform to the best of their abilities, leading to outcomes that consistently involve the display of exceptional qualities that are the result of attitudes, skills, knowledge, talent, and creativity. Additionally, Podsakoff et al. (1990) found that followers who are satisfied tended to make the extra effort to be more helpful, to be more loyal, to be more conscientious, and were generally better organizational citizens. The finding that Management-by-Exception Passive (MBE-P) displayed a statistically significant and negative relationship with Extra Effort (EE) is supported by research, as it was found to be connected to low productivity, lack of innovation, more conflict, and lack of cohesion among subordinates, and was positively correlated only with Laissez-Faire Leadership (LF), its only counterpart in the category of Passive/Avoidant Leadership (Bass & Avolio, 1991a, as cited in Bass & Riggio, 2006). This finding is not surprising, as it has been consistently shown, in this research, to be negatively correlated, not only of Extra Effort (EE),  $r = -0.572$ , but also of Effectiveness (EFF),  $r = -0.613$ , and Satisfaction (SAT),  $r = -0.556$ , all significant at the 0.01 level (Table 1).

## Hypothesis 2

For Hypothesis 2, three independent variables are significant predictors of the outcome of leadership, Effectiveness (EFF). The statistically significant and positive relationship ( $\beta = 0.276$ ,  $p < 0.01$ ) between Idealized-Influence Attributed (II-A) and the dependent variable and outcome of leadership, Effectiveness (EFF), tells us that those Department Chairpersons perceived by the Department Members to be charismatic, confident, powerful, and focused on higher order ideals and ethics, also motivate them to be more effective in fulfilling their job responsibilities. The statistically significant and positive relationship ( $\beta = 0.183$ ,  $p < 0.05$ ) between Intellectual Stimulation (IS) and the dependent variable and outcome of leadership, Effectiveness (EFF), tells us

that those Department Chairpersons perceived by the Department Members to possess the ability to stimulate them to be innovative and creative, to get them to question the tried ways of solving problems, to encourage them to examine problems from different angles, and to involve them in the decision-making process within their organizations, also encourage them to be more effective in fulfilling their job responsibilities. The statistically significant and negative relationship ( $\beta = -0.168, p < 0.01$ ) between Laissez-Faire Leadership (LF) and the dependent variable and outcome of leadership, Effectiveness (EFF), tells us that those Department Chairpersons perceived by the Department Members to be reactive, taking corrective action only after problems have become serious, often avoiding making any decisions at all, are less likely to be effective in fulfilling their job responsibilities (Table 6).

The findings of other leadership researchers regarding the outcome of leadership Effectiveness (EFF) concur with the view that leaders who are effective tend to motivate others, including their followers, to be effective. Individual studies, as well as meta-analyses, have identified relationships between Transformational Leadership—which includes the leader attributes and behaviors Idealized-Influence Attributed (II-A), and Intellectual Stimulation (IS)—and Effectiveness (EFF). According to Bass and Riggio (2006), these correlations have tended to be hierarchical in nature, with the variables Charisma-Inspiration, Intellectual Stimulation, and Individualized Consideration together being the most highly correlated with Effectiveness (EFF); and with the individual variables Contingent Reward, Active Managing-by-Exception, Passive Managing-by-Exception, and Laissez-Faire leadership ranked in descending order to the least correlated. Further support for these findings is summarized in a meta-analysis of studies including data from between 2,873 and 4,242 respondents across both the public and private sectors using the MLQ Rater Form (5X-Short), done by Lowe, Kroeck, and Sivasubramaniam (1996), which showed results that were similar to the hierarchical order of the correlations indicated above. “The mean corrected correlations with effectiveness for the public (including military) and private sectors were, respectively, charisma-inspiration, .74, .69; intellectual stimulation, .65, .56; and individualized

consideration, .63, .62; contingent reward, .41, .41; and managing-by-exception, .10, -.02” (Bass & Riggio, 2006, p. 26).

DeGroot et al. (2000) noted that the primary goal of effective leadership is to increase the positive results from subordinates and thus increase their effects on organizational outcomes. Bass (1985) also proposed that an effective leader is one who develops a good rapport with followers, and is able to successfully influence them to maintain a focus to achieve goals. Singer (1985) indicated that satisfaction, as well as leader effectiveness, was more highly correlated with Transformational Leadership than with Transactional Leadership. In addition, Smith (1982) found that persons whose leaders were Transformational were more self-assured, worked for longer hours, and rated their leaders as dynamic high performers, capable of encouraging them to higher standards of excellence. These views all support the findings for Hypothesis 2 of this research.

### Hypothesis 3

For Hypothesis 3, three independent variables are predictors of the outcome of leadership, Satisfaction (SAT). The statistically significant and positive relationship ( $\beta = 0.261, p < 0.05$ ) between Idealized-Influence Attributed (II-A) and the dependent variable and outcome of leadership, Satisfaction (SAT), tells us that those Department Chairpersons perceived by the Department Members to be charismatic, confident, powerful, and focused on higher order ideals and ethics also serve to instill a feeling of satisfaction in them as they work to fulfill their job responsibilities. The statistically significant and positive relationship ( $\beta = 0.324, p < 0.01$ ) between Intellectual Stimulation (IS) and the dependent variable and outcome of leadership, Satisfaction (SAT), tells us that those Department Chairpersons perceived by the Department Members to possess the ability to stimulate them to be innovative and creative, to get them to question the tried ways of solving problems, to encourage them to examine problems from different angles, and to involve them in the decision-making process within their organizations, also serve to instill a feeling of satisfaction in them as they work to fulfill their job responsibilities. The statistically

significant and positive relationship ( $\beta = 0.198, p < 0.05$ ) between Individualized Consideration (IC) and the dependent variable and outcome of leadership, Satisfaction (SAT), tells us that those Department Chairpersons perceived by the Department Members to be focused on understanding their needs, and on working continuously to get them to develop to their full potential, serve to instill a feeling of satisfaction in them as they work to fulfill their job responsibilities (Table 7).

According to Bass and Riggio (2006), the findings of research consistently support the view that Transformational Leaders have more satisfied followers than leaders who are not. This is evidenced in the following findings:

Two meta-analyses (Dumdum, Lowe, & Avolio, 2002; Lowe, et al., 1996) show very high average correlations (ranging from .51 to .81) between all of the components of transformational leadership and measures of follower satisfaction. In comparison, mean correlations of contingent reward and satisfaction are somewhat lower ( $r_s = .34$  to  $.60$ ), and follower satisfaction tends to be negatively correlated with management-by-exception and laissez-faire leadership. (pp. 41-42)

The support provided by the results of these studies strengthens the findings for Hypothesis 3 of this research, and suggests the universality of the predictive roles of the significant variables indicated regarding the satisfaction of followers whose leaders display the attributes and behaviors of the Transformational Leader.

#### Other Related Findings

The results of this study, which indicate that the independent variables Inspirational Motivation (IM), Individualized Consideration (IC), and Management-by-Exception Passive (MBE-P) are significant predictors of the dependent variable and outcome of leadership, Extra Effort (EE); that Idealized-Influence Attributed (II-A), Intellectual Stimulation (IS), and Laissez-Faire Leadership (LF) are significant predictors of the dependent variable and outcome of leadership Effectiveness (EFF); and that Idealized-Influence Attributed (II-A), Intellectual Stimulation (IS), and Individualized Consideration (IC) are significant predictors of the dependent variable and outcome of leadership Satisfaction (SAT), with Management-by-Exception Passive (MBE-P), and that Laissez-Faire

Leadership (LF), being negatively related to Extra Effort (EE) and Effectiveness (EFF), is also supported by leadership researchers.

Support for these findings is presented by Gaspar (1992, as cited in Bass & Riggio, 2006) who suggests that the findings of a meta-analysis of 20 studies of Transformational and Transactional Leadership, in which the results for each approach to leadership were separately pooled, indicated that the corrected mean for Transformational Leadership correlated with Extra Effort ( $\beta = 0.88$ ), Effectiveness ( $\beta = 0.76$ ), and Satisfaction ( $\beta = 0.71$ ); and that the corrected mean for Transactional Leadership correlated with Extra Effort ( $\beta = 0.32$ ), Effectiveness ( $\beta = 0.27$ ), and Satisfaction ( $\beta = 0.22$ ).

While it is true that the level-two independent variables were not significant predictors of the three outcomes of leadership, the findings that the full model contributed significantly to the variance for each of the three research hypotheses indicate that these variables, along with potentially all of the others that were non-significant, may also have contributed to the variance shown.

Such findings, which indicate that the three dependent variables and outcomes of leadership Extra Effort (EE), Effectiveness (EFF), and Satisfaction (SAT) are explained by the attributes and behaviors identified in Bass's Full-Range Leadership Model, are of utmost importance to the field of education, as workers who are motivated to make extra effort, inspired to be effective, and satisfied with their jobs are more likely to contribute significantly to the enhancement of the quality of the education product than those who are not.

### **Conclusions**

The results of this investigation of the predictive roles of personal variables and the leader attributes and behaviors of Department Chairpersons regarding the outcomes of leadership as perceived by Department Members in selected Jamaican universities have implied the need for further study and discussion. This is critical to the intentional development of the type and quality



of leadership necessary to promote and develop the ideal educational environment at the university level.

Of further significance is the implication that the leader attributes and behaviors identified as being the qualities of Transformational Leadership are predictors of the outcomes of leadership Extra Effort (EE), Effectiveness (EFF), and Satisfaction (SAT) because, although specific variables were identified as being significant predictors of the three outcome variables, the multicollinearity among the nine independent level-one variables indicates that any of the other collinear non-significant independent variables may also become significant predictors of the outcomes of leadership if significant predictors were removed from the equations.

Additionally, if the preferred outcomes of leadership are to be realized, it seems that methodologies that strategically identify aspiring, potential, and emergent leaders will need to be determined. One possible approach may be the use of an instrument such as the Multifactor Leadership Questionnaire (MLQ) Leader Form, to evaluate aspirants as well as practicing leaders. The results of these evaluations should then be individually analyzed with the intent of selecting those individuals who best meet the criteria of the Transformational Leader.

Finally, governing bodies, administrations, and stakeholders need to be unified in purpose to ensure that the best possible individuals are selected and prepared for the important task of positively influencing the educational community at the tertiary level within the Jamaican context. This is critical, not only for the followers, but also for the students who will be the natural and logical beneficiaries of a positive educational environment.

### **Implications for Practice**

Although it is possible that larger sample sizes of both Department Members and Department Chairpersons may have produced different outcomes, and although the number of Department Members evaluating their Department Chairpersons may not have been large enough to make sweeping generalizations, the results indicate that there are implications for practice.

As a result of the findings for the three hypotheses, it is recommended that administrators of institutions of higher education who wish to promote the development of members of faculty and staff who make an extra effort in the fulfillment of their job responsibilities, who are effectively fulfilling their mission, and who are satisfied with their job need to identify, select, and hone the skills of departmental leaders who possess the leader attributes and behaviors that were found to be, at least, significantly related to the outcomes of leadership. Such departmental leaders should possess the requisite qualities, primarily represented by elements of Transformational Leadership.

1. For the first hypothesis, since Inspirational Motivation (IM), Individualized Consideration (IC), and Management-by-Exception Passive (MBE-P) are significant predictors of the outcome of leadership, Extra Effort (EE) at level one, there are implications that departmental leaders need to do the following:
  - a. Motivate, encourage, and provide meaning and direction for the workers whom they supervise. The inspirational motivation of workers should help to provide these workers with both a short-term and long-term vision of their department, which, if embraced by these workers, will serve to motivate them to become actively engaged in the achievement of these goals. In doing this, the improved team-spirit and clearly defined goals will tend to motivate and encourage meaningful participation.
  - b. Make the necessary effort, and spend the time to relate to each worker as an individual with unique needs and talents. When supervisors ensure that each department member is individually coached and mentored to achieve personal and departmental goals, then it is more likely that such an effort will serve to motivate these workers to do their best work. This is true because individuals who believe that their supervisors are personally interested in their success, and consider them individually, will do their best to ensure the achievement of organizational goals as they work to achieve their personal goals.

- c. Remove every notion of passivity in relating to their workers and their work environments. Departmental leaders who are consistently proactive, and who endeavor to pre-empt any potential challenges, will gain the respect of their followers. Workers who believe that their leaders are adept at leading their departments tend to make the effort necessary to ensure the continued success of the organizations in which they work.
2. For the second hypothesis, since Idealized-Influence Attributed (II-A), Intellectual Stimulation (IS), and Laissez-Faire Leadership (LF) are significant predictors of the outcome of leadership, Effectiveness (EFF) at level one, departmental leaders should do the following:
    - a. Show exemplary leadership qualities both within and without the work environment, going beyond self-interest for the good of the group, acting in ways that build the respect of the members for the leader, and displaying a sense of power and confidence, thereby instilling pride in the departmental workers for being associated with the caliber of leadership shown. This display of the attribute, Idealized-Influence Attributed (II-A), should be considered as being vital to the process of enhancing positive leadership outcomes, not only for the outcome of leadership, Effectiveness (EFF), but also for the Satisfaction (SAT) of departmental workers.
    - b. Stimulate their followers to pursue intellectually creative approaches to problem-solving by encouraging their participation in resolving situations that impact them as individuals, as groups, or as part of the organizations in which they work. When this occurs, the views of workers are solicited, valued, and validated by the leader, thereby encouraging the development of self-worth, which positively influences the Effectiveness (EFF) of the worker.
    - c. Discourage the tendency to avoid involvement in challenging job-related situations, to be absent when needed, to avoid necessary decision-making procedures, and to desist from responding to urgent questions. Because Laissez-Faire Leadership (LF)

behaviors are referred to as non-leadership, leaders who are concerned with motivating followers to be effective will endeavor not to display these qualities, and will, to the contrary, meet the needs of their workers appropriately and decisively.

3. For the third hypothesis, since Idealized-Influence Attributed (II-A), Intellectual Stimulation (IS), and Individualized Consideration (IC) are significant predictors of outcome of leadership, Satisfaction (SAT) at level one, departmental leaders are encouraged to do the following:
  - a. Follow the recommendations provided for Idealized-Influence Attributed (II-A), which is a predictor of Effectiveness (EFF) as well as of Satisfaction (SAT).
  - b. Follow the recommendations provided for Intellectual Stimulation (IS), which is a predictor of Effectiveness (EFF) as well as of Satisfaction (SAT).
  - c. Follow the recommendations provided for Individualized Consideration (IC), which is a predictor of Extra Effort (EE) as well as of Satisfaction (SAT).

These findings suggest that leaders who ensure that their workers are motivated to make an extra effort, and to be effective in the fulfillment of their work-related responsibilities, are also satisfied workers. It therefore behooves leaders to be models who, having set the necessary examples, will be more likely to inspire their followers to be exemplary workers.

Because of the multicollinearity among the level-one variables, with the exception of Management-by-Exception Active (MBE-A) which was correlated with only Idealized-Influence Behavior (II-B), any of the other non-significant independent variables—Idealized-Influence Behavior (II-B), and Contingent Reward (CR)—could potentially become significant predictors in the absence of any other collinear variables previously indicated. Despite, however, the fact that Contingent Reward (CR), a Transactional Leadership Behavior, was not a significant predictor in this study, its significant multicollinearity with the independent variables (evident in the Pearson Product-Moment Correlation Coefficients done in the SPSS analysis in Table 1) suggests its importance as an individual variable, even if it were not identified among those that were the best predictors of the three dependent variables and outcomes of leadership, Extra Effort (EE),

Effectiveness (EFF), or Satisfaction (SAT). This observation is also corroborated by Bass (1985) who found that behaviors that are considered to be Transactional in nature tend to augment any existing leader attributes and behaviors that are Transformational.

The recommendation that the Jamaican Ministry of Education and the principals adopt policies and develop programs that will facilitate achievement of the expectations at higher levels of efficiency, made by Nehemiah Mead (1976) in his unpublished doctoral dissertation done among teachers and principals in Jamaican high schools, and which came as a result of his findings that teachers and principals themselves were dissatisfied with the principals' on-the-job performance, speaks to the longevity of this problem. Additionally the fifth of seven implications identified by Mead for further study, "There is a need to determine the type of training necessary to produce a specific type of leader" (pp. 95-96), also has implications for this study, as it seems that little has been done after 36 years to address the concerns indicated in the Mead (1976) study.

### **Recommendations for Further Research**


The findings of this research indicate the necessity for the conducting of other studies on leadership in education. Because it is true that no single research is usually able to provide all the answers sought on any subject under consideration, one possible study may be focused on replicating this current research using a larger sample size and adding other personal variables—such as the personality of the leader—at level two, in an effort to compare the outcomes with this current research. Additionally, the MLQ 360-degree questionnaires may be used in each case to gain perspectives of the leaders in question from their superiors, themselves, and stakeholders in addition to the members of the departments chaired by them, as was the case in this research. A second study may be done to individually test each of the three hypotheses in this current research. A third study may be done using other leadership theories. A fourth study may be a longitudinal in nature, and focus on any or all of the suggested areas for further research with the final intent of implementing strategies that may be useful in developing leaders who possess and practice the

leader attributes and behaviors that promote the best possible outcomes in the tertiary educational environment, and on the education system in general. Other potential research topics may evolve from the need to do further study on significant outcomes of any of the suggested topics previously indicated. By engaging in these recommendations for further study, it is hoped that leadership, a process whereby an individual influences a group of individuals to achieve a common goal, will be bolstered, not only in Jamaican universities, but also in the entire education process.

APPENDIX A

BASS'S FULL-RANGE LEADERSHIP MODEL

### Bass's Full-Range Leadership Model



Passive/Avoidant Leadership	Transactional Leadership	Transformational Leadership
1. Laissez-Faire Leadership	3. Management-by-Exception Active	5. Individualized Consideration
2. Management-by-Exception Passive	4. Contingent Reward	6. Intellectual Stimulation
		7. Inspirational Motivation
		8. Idealized-Influence Behavior
		9. Idealized-Influence Attributed

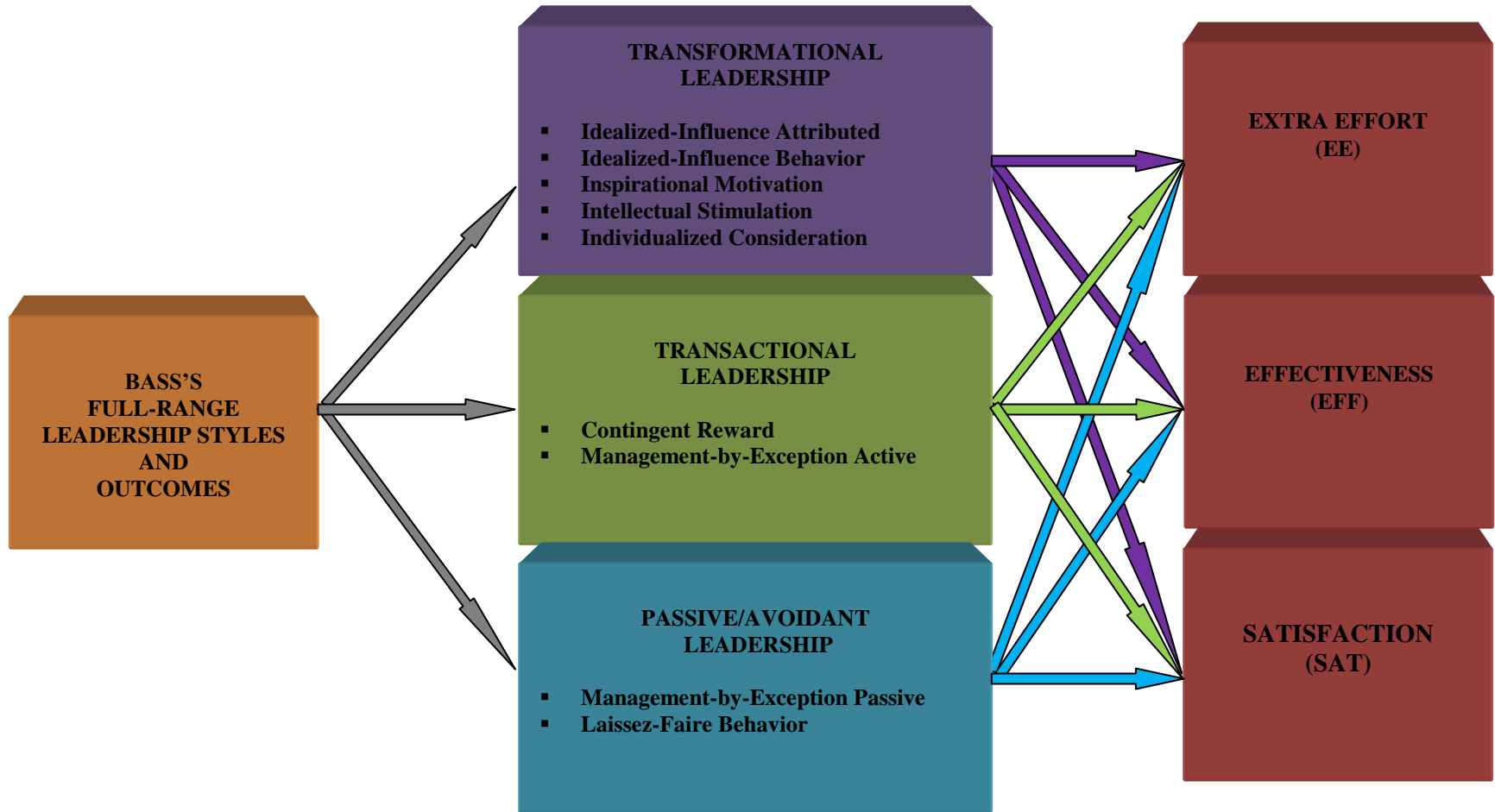
From *Multifactor Leadership Questionnaire: Third Edition Manual and Sampler Set* (pp. 96-98), by B. J. Avolio and B. M. Bass, 2004, Menlo Park, CA: Mind Garden. Copyright 2004 by Bernard M. Bass and Bruce J. Avolio.



APPENDIX B

BASS'S FULL-RANGE LEADERSHIP STYLES AND OUTCOMES

### Bass's Full-Range Leadership Styles and Outcomes



APPENDIX C  
CORRESPONDENCE

Vivienne L. Quarrie

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June 1, 2010

Dr. Claude Packer  
President of Mico University College  
1A Marescaux Road, Kingston 5  
Jamaica, West Indies

Dear Dr. Packer,

**Re: Permission to do Research at Mico University College**

I am presently reading for the Doctor of Philosophy degree in Educational Administration and Leadership at Andrews University in Berrien Springs, Michigan, and seek your permission for the participation of the Mico University College in the research for my dissertation between August 1, 2010 and July 31, 2011. Your institution is one of four Jamaican universities—Mico University College, Northern Caribbean University, University of Technology, and the University of the West Indies—which, with the permission of their leaders, will be included in this study.

The topic of my dissertation is, *The impact of the relationship between personal variables and the leader attributes and behaviors of Department Chairpersons on the outcomes of leadership as perceived by Department Members in four Jamaican universities*. Two questionnaires—the “Leader Attributes and Behaviors Demographic Information Leader Form”, a five-item instrument developed by me; and the “Multifactor Leadership Questionnaire (MLQ) Rater Form (5X-Short)”, a forty-five-item Likert-type instrument developed by Bruce J. Avolio and Bernard M. Bass—will be used to gather data from a minimum of forty (40) Department Chairpersons whose departments consist of at least three additional members; and from one hundred and twenty (120) of these Department Members, respectively. The data will be statistically analyzed using the Hierarchical Linear Model (HLM).

It is anticipated that this dissertation, a copy of which will be provided for the library of each of the participating institutions, will proffer findings that provide meaningful insights regarding the correlates of perceived positive leadership outcomes that will be of benefit to our institutions of higher education.

Thank you for positively considering this request.

Respectfully,



Vivienne L. Quarrie  
Doctoral Candidate



# The Mico University College

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2010 July 28

Ms Vivienne L. Quarrie  
4676 East Hillcrest Drive  
Berrien Springs, MI 49103-9582  
U. S. A.

Dear Ms Quarrie:

This is to advise that permission had been granted for you to conduct your research at The Mico University College, in partial fulfilment of the Doctor of Philosophy degree in Educational Administration and Leadership at Andrews University.

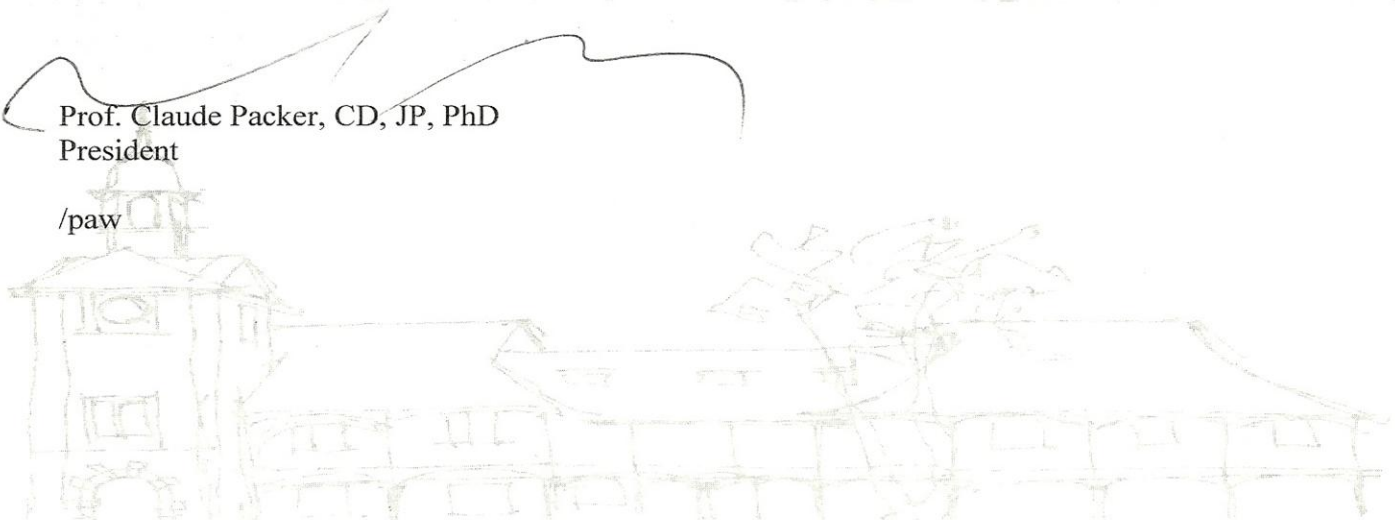
We are happy to assist you in your educational pursuits and wish you a successful programme.

Regards,

Sincerely,

Prof. Claude Packer, CD, JP, PhD  
President

/paw



Prof the Hon Errol Miller, CD, OJ, PhD, *Chancellor* • Dr R Karl James, CD, *Pro Chancellor* •  
Ryland T Campbell, CD, *Deputy Pro Chancellor* • Prof Claude Packer, CD, JP, PhD, *President*

Vivienne L. Quarrie

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June 1, 2010

Dr. Herbert Thompson  
President of Northern Caribbean University  
Mandeville, Manchester  
Jamaica, West Indies

Dear Dr. Thompson,

**Re: Permission to do Research at Northern Caribbean University**

I am presently reading for the Doctor of Philosophy degree in Educational Administration and Leadership at Andrews University in Berrien Springs, Michigan, and seek your permission for the participation of Northern Caribbean University in the research for my dissertation between August 1, 2010 and July 31, 2011. Your institution is one of four Jamaican universities—Mico University College, Northern Caribbean University, University of Technology, and the University of the West Indies—which, with the permission of their leaders, will be included in this study.

The topic of my dissertation is, *The impact of the relationship between personal variables and the leader attributes and behaviors of Department Chairpersons on the outcomes of leadership as perceived by Department Members in four Jamaican universities*. Two questionnaires—the “Leader Attributes and Behaviors Demographic Information Leader Form”, a five-item instrument developed by me; and the “Multifactor Leadership Questionnaire (MLQ) Rater Form (5X-Short)”, a forty-five-item Likert-type instrument developed by Bruce J. Avolio and Bernard M. Bass—will be used to gather data from a minimum of forty (40) Department Chairpersons whose departments consist of at least three additional members; and from one hundred and twenty (120) of these Department Members, respectively. The data will be statistically analyzed using the Hierarchical Linear Model (HLM).

It is anticipated that this dissertation, a copy of which will be provided for the library of each of the participating institutions, will proffer findings that provide meaningful insights regarding the correlates of perceived positive leadership outcomes that will be of benefit to our institutions of higher education.

Thank you for positively considering this request.

Respectfully,



Vivienne L. Quarrie  
Doctoral Candidate

# NORTHERN CARIBBEAN UNIVERSITY

Mandeville, Jamaica W.I.

Office of Associate Vice-President, Academic Administration

June 10, 2010

Director  
Institutional Review Board  
Andrews University  
Berrien Springs, Michigan 49103  
USA

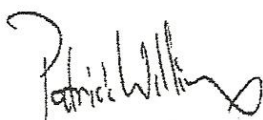
Dear Sir/Madam:

Permission is hereby granted to Ms. Vivienne Quarrie to include Northern Caribbean University as part of her sample population for her doctoral dissertation.

The title of her proposed study, *the impact of the relationship between personal variables and the leader attributes and behaviours of department chairpersons on the outcomes of leadership as perceived by department members in four Jamaican universities* will, no doubt, offer insight to those of us in academic leadership positions.

The institution looks forward to facilitating Ms. Quarrie as she seeks to complete this rather important milestone.

Sincerely,



Patrick A. Williams, PhD  
Associate Vice President  
Academic Administration

Cc: Dr. Felix Omoruyi, Director of Research & Publications  
Dr. Beverly Cameron, Vice President for Academic Administration

Vivienne L. Quarrie

4676 East Hillcrest Drive  
Berrien Springs, Michigan 49103-9582  
United States of America  
Telephone Number: 1 (269) 849-6286  
E-mail Address: quarrie@andrews.edu

June 1, 2010

Professor the Honourable Errol Morrison  
President of the University of Technology  
237 Old Hope Road, Kingston 6  
Jamaica, West Indies

Dear Professor Morrison,

**Re: Permission to do Research at the University of Technology**

I am presently reading for the Doctor of Philosophy degree in Educational Administration and Leadership at Andrews University in Berrien Springs, Michigan, and seek your permission for the participation of the University of Technology in the research for my dissertation between August 1, 2010 and July 31, 2011. Your institution is one of four Jamaican universities—Mico University College, Northern Caribbean University, University of Technology, and the University of the West Indies—which, with the permission of their leaders, will be included in this study.

The topic of my dissertation is, *The impact of the relationship between personal variables and the leader attributes and behaviors of Department Chairpersons on the outcomes of leadership as perceived by Department Members in four Jamaican universities*. Two questionnaires—the “Leader Attributes and Behaviors Demographic Information Leader Form”, a five-item instrument developed by me; and the “Multifactor Leadership Questionnaire (MLQ) Rater Form (5X-Short)”, a forty-five-item Likert-type instrument developed by Bruce J. Avolio and Bernard M. Bass—will be used to gather data from a minimum of forty (40) Department Chairpersons whose departments consist of at least three additional members; and from one hundred and twenty (120) of these Department Members, respectively. The data will be statistically analyzed using the Hierarchical Linear Model (HLM).

It is anticipated that this dissertation, a copy of which will be provided for the library of each of the participating institutions, will proffer findings that provide meaningful insights regarding the correlates of perceived positive leadership outcomes that will be of benefit to our institutions of higher education.

Thank you for positively considering this request.

Respectfully,



Vivienne L. Quarrie  
Doctoral Candidate





## University of Technology, Jamaica

---

237 Old Hope Rd. Kingston 6,  
Jamaica, West Indies.  
Phone : (876) 927-1680-8  
Fax : (876) 977-4388  
Website : [www.utechjamaica.edu.jm](http://www.utechjamaica.edu.jm)  
Email : [regist@utech.edu.jm](mailto:regist@utech.edu.jm)  
Cable : UTECH, KINGSTON

President : Professor the Hon. Errol Morrison,  
OJ, MD, PhD, FRCP (Glasg), FACP,  
FRSM (UK), FRSH

June 29, 2010

Ms. Vivienne Quarrie  
4676 East Hillcrest Drive  
Berrien Springs, MI 49103-9582

Dear Ms Quarrie:

I write on behalf of Professor Errol Morrison, President of the University of Technology, Jamaica, who is in receipt of your letter dated June, 1, 2010, in which you are requesting permission for the participation of the university in your doctoral research.

We believe that your topic, *"The impact of the relationship between personal variables and the leader attributes and behaviours of department chairpersons on the outcomes of leadership as perceived by department members in four Jamaican universities"* if successfully defended, will provide a practical and meaningful reference point for the University to facilitate the development of its cadre of academic and administrative leaders.

We therefore look forward to welcoming you to our campus in August and to the participation of our staff in your study.

Kind regards.

Sincerely,

.....  
Haldane Johnson, Ed.D.

Dean  
Faculty of Education & Liberal Studies  
[hjohnson@utech.edu.jm](mailto:hjohnson@utech.edu.jm)

COPY: Professor Errol Morrison, President

Vivienne L. Quarrie

4676 East Hillcrest Drive  
Berrien Springs, Michigan 49103-9582  
United States of America  
Telephone Number: 1 (269) 849-6286  
E-mail Address: quarrie@andrews.edu

June 1, 2010

Professor Gordon Shirley  
Principal of the University of the West Indies, Mona  
Kingston 7  
Jamaica, West Indies

Dear Professor Shirley,

**Re: Permission to do Research at the University of the West Indies**

I am presently reading for the Doctor of Philosophy degree in Educational Administration and Leadership at Andrews University in Berrien Springs, Michigan, and seek your permission for the participation of the University of the West Indies, Mona campus, in the research for my dissertation between August 1, 2010 and July 31, 2011. Your institution is one of four Jamaican universities—Mico University College, Northern Caribbean University, University of Technology, and the University of the West Indies—which, with the permission of their leaders, will be included in this study.

The topic of my dissertation is, *The impact of the relationship between personal variables and the leader attributes and behaviors of Department Chairpersons on the outcomes of leadership as perceived by Department Members in four Jamaican universities*. Two questionnaires—the “Leader Attributes and Behaviors Demographic Information Leader Form”, a five-item instrument developed by me; and the “Multifactor Leadership Questionnaire (MLQ) Rater Form (5X-Short)”, a forty-five-item Likert-type instrument developed by Bruce J. Avolio and Bernard M. Bass—will be used to gather data from a minimum of forty (40) Department Chairpersons whose departments consist of at least three additional members; and from one hundred and twenty (120) of these Department Members, respectively. The data will be statistically analyzed using the Hierarchical Linear Model (HLM).

It is anticipated that this dissertation, a copy of which will be provided for the library of each of the participating institutions, will proffer findings that provide meaningful insights regarding the correlates of perceived positive leadership outcomes that will be of benefit to our institutions of higher education.

Thank you for positively considering this request.

Respectfully,



Vivienne L. Quarrie  
*Doctoral Candidate*



# THE UNIVERSITY OF THE WEST INDIES

MONA CAMPUS  
OFFICE OF THE PRINCIPAL

---

Professor the Hon. Gordon Shirley, OJ, BSc, MBA, DBA  
Pro Vice Chancellor & Principal

June 11, 2010

Institutional Review Board  
Andrews University  
Berrien Springs, MI 49104-0355  
U.S.A.

## TO WHOM IT MAY CONCERN

*‘The impact of the relationship between personal variables and the leader attributes and behaviours of department chairpersons on the outcomes of leadership as perceived by department members in four Jamaican universities’*

Permission is hereby granted for Ms. Vivienne Quarrie to conduct a study at the University of the West Indies, Mona Campus, for the completion of her Doctor of Philosophy degree in Educational Administration and Leadership at Andrews University, Michigan.

With kind regards.

Yours sincerely,

GORDON SHIRLEY

c.c. Professor Zellynne Jennings-Craig, Director, School of Education, the UWI, Mona Campus

Vivienne L. Quarrie

4676 East Hillcrest Drive  
Berrien Springs, Michigan 49103-9582  
United States of America  
Telephone Number: 1 (269) 849-6286  
E-mail Address: quarrie@andrews.edu

June 1, 2010

Dear Department Chairperson,

**Re: Request for Your Participation in Research**

I am presently reading for the Doctor of Philosophy degree in Educational Administration and Leadership at Andrews University in Berrien Springs, Michigan, and invite you to participate in the research for my dissertation between August 1, 2010 and July 31, 2011. Your institution is one of four Jamaican universities—Mico University College, Northern Caribbean University, University of Technology, and the University of the West Indies—which have been selected to participate in this study.

The topic of my dissertation is, *The impact of the relationship between personal variables and the leader attributes and behaviors of Department Chairpersons on the outcomes of leadership as perceived by Department Members in four Jamaican universities*. Two questionnaires—the “Leader Attributes and Behaviors Demographic Information Leader Form”, a five-item instrument developed by me; and the “Multifactor Leadership Questionnaire (MLQ) Rater Form (5X-Short)”, a forty-five-item Likert-type instrument developed by Bruce J. Avolio and Bernard M. Bass—will be used to gather data from a minimum of forty (40) Department Chairpersons whose departments consist of at least three additional members; and from one hundred and twenty (120) of these Department Members, respectively. The data will be statistically analyzed using the Hierarchical Linear Model (HLM).

It is anticipated that this dissertation, a copy of which will be provided for the library of each of the participating institutions, will proffer findings that provide meaningful insights regarding the correlates of perceived positive leadership outcomes that will be of benefit to our institutions of higher education.

Thank you for positively considering this request.

Respectfully,



Vivienne L. Quarrie  
*Doctoral Candidate*

Vivienne L. Quarrie

4676 East Hillcrest Drive  
Berrien Springs, Michigan 49103-9582  
United States of America  
Telephone Number: 1 (269) 849-6286  
E-mail Address: quarrie@andrews.edu

June 1, 2010

Dear Department Member,

**Re: Request for Your Participation in Research**

I am presently reading for the Doctor of Philosophy degree in Educational Administration and Leadership at Andrews University in Berrien Springs, Michigan, and invite you to participate in the research for my dissertation between August 1, 2010 and July 31, 2011. Your institution is one of four Jamaican universities—Mico University College, Northern Caribbean University, University of Technology, and the University of the West Indies—which have been selected to participate in this study.

The topic of my dissertation is, *The impact of the relationship between personal variables and the leader attributes and behaviors of Department Chairpersons on the outcomes of leadership as perceived by Department Members in four Jamaican universities*. Two questionnaires—the “Leader Attributes and Behaviors Demographic Information Leader Form”, a five-item instrument developed by me; and the “Multifactor Leadership Questionnaire (MLQ) Rater Form (5X-Short)”, a forty-five-item Likert-type instrument developed by Bruce J. Avolio and Bernard M. Bass—will be used to gather data from a minimum of forty (40) Department Chairpersons whose departments consist of at least three additional members; and from one hundred and twenty (120) of these Department Members, respectively. The data will be statistically analyzed using the Hierarchical Linear Model (HLM).

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Thank you for positively considering this request.

Respectfully,



Vivienne L. Quarrie  
Doctoral Candidate

*Vivienne L. Quarrie*

4676 East Hillcrest Drive  
Berrien Springs, Michigan 49103-9582  
United States of America  
Telephone Number: 1 (269) 849-6286  
E-mail Address: quarrie@andrews.edu

October 20, 2011

Dr. Claude Packer  
President of Mico University College  
1A Marescaux Road, Kingston 5  
Jamaica, West Indies

Dear Dr. Packer,

**Re: Permission to do Research at Mico University College**

I take this opportunity to thank you for having given your permission for the participation of the Mico University College in research for my dissertation leading to the completion of the Doctor of Philosophy degree in Educational Administration and Leadership at Andrews University in Berrien Springs, Michigan.

While it is true that not all of the selected institutions, Department Chairpersons, or Department Members chose to participate in this research, the contributions of those who did are invaluable, and are greatly appreciated. Kindly convey my gratitude to the members of your faculty and staff who were involved in this exercise.

Be assured that a copy of this dissertation, which will examine the impact of the relationship between personal variables and the leader attributes and behaviors of Department Chairpersons on the outcomes of leadership as perceived by Department Members in selected Jamaican universities, will be provided for the library of each of the participating institutions. It is my hope that the findings will promote discussion, as well as lead to additional research on this issue in institutions of higher education.

Respectfully,



Vivienne L. Quarrie  
*Doctoral Candidate*

*Vivienne L. Quarrie*

4676 East Hillcrest Drive  
Berrien Springs, Michigan 49103-9582  
United States of America  
Telephone Number: 1 (269) 849-6286  
E-mail Address: quarrie@andrews.edu

October 20, 2011

Dr. Daniel Fider  
Interim President  
Northern Caribbean University  
Mandeville, Manchester  
Jamaica, West Indies

Dear Dr. Fider,

**Re: Permission to do Research at Northern Caribbean University**

I take this opportunity to thank the administration of Northern Caribbean University for having given permission for the participation of its qualifying members of faculty and staff in research for my dissertation leading to the completion of the Doctor of Philosophy degree in Educational Administration and Leadership at Andrews University in Berrien Springs, Michigan.

While it is true that not all of the selected institutions, Department Chairpersons, or Department Members chose to participate in this research, the contributions of those who did are invaluable, and are greatly appreciated. Kindly convey my gratitude to the members of your faculty and staff who were involved in this exercise.

Be assured that a copy of this dissertation, which will examine the impact of the relationship between personal variables and the leader attributes and behaviors of Department Chairpersons on the outcomes of leadership as perceived by Department Members in selected Jamaican universities, will be provided for the library of each of the participating institutions. It is my hope that the findings will promote discussion, as well as lead to additional research on this issue in institutions of higher education.

Respectfully,



Vivienne L. Quarrie  
*Doctoral Candidate*

*Vivienne L. Quarrie*

4676 East Hillcrest Drive  
Berrien Springs, Michigan 49103-9582  
United States of America  
Telephone Number: 1 (269) 849-6286  
E-mail Address: quarrie@andrews.edu

October 20, 2011

Professor the Honourable Errol Morrison  
President of the University of Technology  
237 Old Hope Road, Kingston 6  
Jamaica, West Indies

Dear Professor Morrison,

**Re: Permission to do Research at the University of Technology**

I take this opportunity to thank you for having given your permission for the participation of the University of Technology in research for my dissertation leading to the completion of the Doctor of Philosophy degree in Educational Administration and Leadership at Andrews University in Berrien Springs, Michigan.

While it is true that not all of the selected institutions, Department Chairpersons, or Department Members chose to participate in this research, the contributions of those who did are invaluable, and are greatly appreciated. Kindly convey my gratitude to the members of your faculty and staff who were involved in this exercise.

Be assured that a copy of this dissertation, which will examine the impact of the relationship between personal variables and the leader attributes and behaviors of Department Chairpersons on the outcomes of leadership as perceived by Department Members in selected Jamaican universities, will be provided for the library of each of the participating institutions. It is my hope that the findings will promote discussion, as well as lead to additional research on this issue in institutions of higher education.

Respectfully,



Vivienne L. Quarrie  
*Doctoral Candidate*



*Vivienne L. Quarrie*

4676 East Hillcrest Drive  
Berrien Springs, Michigan 49103-9582  
United States of America  
Telephone Number: 1 (269) 849-6286  
E-mail Address: quarrie@andrews.edu

October 20, 2011

Professor Gordon Shirley  
Principal of the University of the West Indies, Mona  
Kingston 7  
Jamaica, West Indies

Dear Professor Shirley,

**Re: Permission to do Research at the University of the West Indies**

I take this opportunity to thank you for having given your permission for the participation of the University of the West Indies, Mona campus, in research for my dissertation leading to the completion of the Doctor of Philosophy degree in Educational Administration and Leadership at Andrews University in Berrien Springs, Michigan.

While it is true that not all of the selected institutions, Department Chairpersons, or Department Members chose to participate in this research, the contributions of those who did are invaluable, and are greatly appreciated. Kindly convey my gratitude to the members of your faculty and staff who were involved in this exercise.

Be assured that a copy of this dissertation, which will examine the impact of the relationship between personal variables and the leader attributes and behaviors of Department Chairpersons on the outcomes of leadership as perceived by Department Members in selected Jamaican universities, will be provided for the library of each of the participating institutions. It is my hope that the findings will promote discussion, as well as lead to additional research on this issue in institutions of higher education.

Respectfully,



Vivienne L. Quarrie  
*Doctoral Candidate*

APPENDIX D

INFORMED CONSENT FORMS

## INFORMED CONSENT FORM



### **School of Education**

#### Leadership and Educational Administration Department

As a qualified and competent Department Member who has been identified to participate in this research:

I have been informed that this questionnaire is part of a study being conducted by Vivienne L. Quarrie, a doctoral candidate at Andrews University, and that this study seeks to identify whether or not there are any linear relationships between three personal variables and nine leader attributes and behaviors that predict three outcomes of leadership of Department Chairpersons from the perspective of the Department Members in selected Jamaican universities—Mico University College, Northern Caribbean University, University of Technology, and the University of the West Indies.

I have been informed that my completion of this survey—the Multifactor Leadership Questionnaire (MLQ) Rater Form (5X-Short), a forty-five-item Likert-type instrument developed by Bruce J. Avolio and Bernard M. Bass, is being used by the principal investigator to collect data towards the completion of her doctoral dissertation, leading to the Doctor of Philosophy degree in Educational Administration and Leadership at Andrews University—will require approximately thirty (30) minutes of my time.

I have been informed that there are no direct benefits to be obtained from my completion of this questionnaire other than those benefits that will be available to society at large as a result of any improved outcomes of leadership that may accrue due to any leadership training that may result from this study.

I have been informed that there are no risks, stressors discomforts, or any invasion of privacy associated with my completion of this questionnaire; that the information from individual questionnaires, after having been packaged and sealed by me, will not be made available to anyone other than the principal investigator or her objective designees; and that any information collected will be treated with the strictest confidence.

I have been informed that any concerns or questions may be directed to the principal investigator, Vivienne L. Quarrie, by writing to her at 4676 East Hillcrest Drive, Berrien Springs, Michigan 49103-9582, U. S. A., by sending an e-mail to [quarrie@andrews.edu](mailto:quarrie@andrews.edu), or by calling 1 (269) 849-6286; or to the advisor of the principal investigator, Dr. Sylvia Gonzalez, by writing to her at Room 211, Bell Hall, Leadership and Educational Administration Department, School of Education, Andrews University, Berrien Springs, MI 49104-0111, U. S. A., by sending an e-mail to [sylviag@andrews.edu](mailto:sylviag@andrews.edu), or by calling 1 (269) 471-6702.

I have been informed that my involvement in this exercise is completely voluntary, that I may choose to withdraw at any time without penalty or loss of any benefits to which I am entitled, and that the completion and submission of this questionnaire will be taken as my informed consent to participate in this research.

## INFORMED CONSENT FORM



### **School of Education**

#### Leadership and Educational Administration Department

As a qualified and competent Department Chairperson who has been identified to participate in this research:

I have been informed that this questionnaire is part of a study being conducted by Vivienne L. Quarrie, a doctoral candidate at Andrews University, and that this study seeks to identify whether or not there are any linear relationships between three personal variables and nine leader attributes and behaviors that predict three outcomes of leadership of Department Chairpersons from the perspective of the Department Members in four Jamaican universities—Mico University College, Northern Caribbean University, University of Technology, and the University of the West Indies.

I have been informed that my completion of this survey—the Leader Attributes and Behaviors Demographic Information (LABDI) Leader Form, a five-item instrument developed by the principal investigator, Vivienne L. Quarrie, is being used by her to collect data towards the completion of her doctoral dissertation, leading to the Doctor of Philosophy degree in Educational Administration and Leadership at Andrews University—will require approximately five (5) minutes of my time.

I have been informed that there are no direct benefits to be obtained from my completion of this questionnaire other than those benefits that will be available to society at large as a result of any improved outcomes of leadership that may accrue due to any leadership training that may result from this study.

I have been informed that there are no risks, stressors discomforts, or any invasion of privacy associated with my completion of this questionnaire; that the information from individual questionnaires, after having been packaged and sealed by me, will not be made available to anyone other than the principal investigator or her objective designees; and that any information collected will be treated with the strictest confidence.

I have been informed that any concerns or questions may be directed to the principal investigator, Vivienne L. Quarrie, by writing to her at 4676 East Hillcrest Drive, Berrien Springs, Michigan 49103-9582, U. S. A., by sending an e-mail to [quarrie@andrews.edu](mailto:quarrie@andrews.edu), or by calling 1 (269) 849-6286; or to the advisor of the principal investigator, Dr. Sylvia Gonzalez, by writing to her at Room 211, Bell Hall, Leadership and Educational Administration Department, School of Education, Andrews University, Berrien Springs, MI 49104-0111, U. S. A., by sending an e-mail to [sylviag@andrews.edu](mailto:sylviag@andrews.edu), or by calling 1 (269) 471-6702.

I have been informed that my involvement in this exercise is completely voluntary, that I may choose to withdraw at any time without penalty or loss of any benefits to which I am entitled, and that the completion and submission of this questionnaire will be taken as my informed consent to participate in this research.

APPENDIX E  
QUESTIONNAIRES

For use by Vivienne Lyn Quarrie only. Received from Mind Garden, Inc. on October 21, 2010  
**Permission for Vivienne Lyn Quarrie to reproduce 800 copies  
within one year of October 21, 2010**

**Multifactor Leadership Questionnaire**  
**Instrument (Leader and Rater Form)**  
**and Scoring Guide**  
**(Form 5X-Short)**

**by Bruce Avolio and Bernard Bass**

Published by Mind Garden, Inc.

info@mindgarden.com  
www.mindgarden.com

**IMPORTANT NOTE TO LICENSEE**

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Published by Mind Garden, Inc., www.mindgarden.com



[www.mindgarden.com](http://www.mindgarden.com)

To whom it may concern,

This letter is to grant permission for the above named person to use the following copyright material;

Instrument: *Multifactor Leadership Questionnaire*

Authors: *Bruce Avolio and Bernard Bass*

Copyright: *1995 by Bruce Avolio and Bernard Bass*

for his/her thesis research.

Five sample items from this instrument may be reproduced for inclusion in a proposal, thesis, or dissertation.

The entire instrument may not be included or reproduced at any time in any other published material.

Sincerely,

A handwritten signature in black ink, appearing to read "Robert Most", with a long horizontal line extending to the right.

Robert Most  
Mind Garden, Inc.  
[www.mindgarden.com](http://www.mindgarden.com)

## Multifactor Leadership Questionnaire (MLQ)

### Rater Form (5X-Short)

University Name: \_\_\_\_\_ Date: \_\_\_\_\_

Department Name: \_\_\_\_\_ Leader Code: \_\_\_\_\_

This questionnaire is used to describe the leadership style of the above-mentioned individual as you perceive it. Answer all items on this answer sheet. **If an item is irrelevant, or if you are unsure or do not know the answer, leave the answer blank.** Please answer this questionnaire anonymously.

**Important** (Necessary for processing): Which best describes you?

I am at a higher organizational level than the person I am rating.

The person I am rating is at my organizational level.

I am at a lower organizational level than the person I am rating.

Other than the above.

(Five of) Forty-five descriptive statements are listed on the following pages. Judge how frequently each statement fits the person you are describing. Use the following rating scale:

Not at all	Once in a while	Sometimes	Fairly often	Frequently, if not always
<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>

*The Person I Am Rating . . .*

- |   |           |
|---|-----------|
| 9. Talks optimistically about the future.                   | 0 1 2 3 4 |
| 18. Goes beyond self-interest for the good of the group.    | 0 1 2 3 4 |
| 27. Directs my attention toward failures to meet standards. | 0 1 2 3 4 |
| 35. Expresses satisfaction when I meet expectations.        | 0 1 2 3 4 |
| 45. Leads a group that is effective.                        | 0 1 2 3 4 |



## Leader Attributes and Behaviors Demographic Information (LABDI)

### Leader Form

University Name: \_\_\_\_\_ Date: \_\_\_\_\_

Department Name: \_\_\_\_\_ Leader Code: \_\_\_\_\_

This survey is being used to collect demographic information about you, the individual who leads the department identified above. Please provide answers to the questions below by placing a tick in the space before each of the numbers representing your answers, or by filling in the relevant blank spaces.

1. Gender: \_\_\_\_\_ (0) Female \_\_\_\_\_ (1) Male
  
2. Have you received any formal leadership training? \_\_\_\_\_ (0) No \_\_\_\_\_ (1) Yes  
(If your answer to Question 2 is "No", please disregard Question 3, and move to Question 4.)
  
3. What is your highest level of formal leadership training, including or in addition to your area of specialization?  
  
\_\_\_\_\_ (1) Certificate \_\_\_\_\_ (2) Diploma \_\_\_\_\_ (3) Associates \_\_\_\_\_ (4) Bachelor's  
\_\_\_\_\_ (5) Master's \_\_\_\_\_ (6) Doctoral \_\_\_\_\_ (7) Postgraduate \_\_\_\_\_ (8) Other  
  
(Please specify): \_\_\_\_\_
  
4. Place a tick before the number preceding all that apply to you regarding any informal leadership training received prior to, or during your time of service as a department chairperson:  
  
\_\_\_\_\_ (0) I have received no informal leadership training.  
  
\_\_\_\_\_ (1) I was provided with leadership opportunities prior to being selected as a department chairperson.  
  
\_\_\_\_\_ (2) I have been provided with challenging job assignments.  
  
\_\_\_\_\_ (3) My superiors have modeled appropriate leadership behavior for me.  
  
\_\_\_\_\_ (4) I have been involved in at least one job rotation exercise.  
  
\_\_\_\_\_ (5) I have been coached in the area of leadership.  
  
\_\_\_\_\_ (6) I have been mentored by my leaders.  
  
\_\_\_\_\_ (7) I have been involved in at least one *e*-mentoring program.

- \_\_\_\_\_ (8) I make the effort to develop myself by using the skills and behaviors to which I am exposed.
- \_\_\_\_\_ (9) I have been exposed to leadership counseling.
- \_\_\_\_\_ (10) Other (Please specify): \_\_\_\_\_
5. For how many years have you served as an educator? \_\_\_\_\_

APPENDIX F  
QUESTIONNAIRE SCORING KEYS

**Multifactor Leadership Questionnaire (MLQ) Rater Form (5X-Short) Scoring Key**

155

No.	Factors	Variables	Symbols	Items				Total
1.	Transformational Leadership	Idealized-Influence Attributed	II-A	10	18	21	25	4
2.		Idealized-Influence Behavior	II-B	6	14	23	34	4
3.		Inspirational Motivation	IM	9	13	26	36	4
4.		Intellectual Stimulation	IS	2	8	30	32	4
5.		Individualized Consideration	IC	15	19	29	31	4
6.	Transactional Leadership	Contingent Reward	CR	1	11	16	35	4
7.		Management-by-Exception Active	MBE-A	4	22	24	27	4
8.	Passive/Avoidant Leadership	Management-by-Exception Passive	MBE-P	3	12	17	20	4
9.		Laissez-Faire Leadership	LF	5	7	28	33	4
10.	Outcomes of Leadership	Extra Effort	EE	39	42	44	-	3
11.		Effectiveness	EFF	37	40	43	45	4
12.		Satisfaction	SAT	38	41	-	-	2
				<b>Total</b>				<b>45</b>

**Leader Attributes and Behaviors Demographic Information (LABDI)**

**Leader Form Scoring Key**

No.	Factors	Variables	Symbols	Items				Total
1.	Personal Variables	Leader Gender	LGEM	1	-	-	-	1
2.		Formal Leadership Training	FLTR	2	3	-	-	2
3.		Informal Leadership Training	ILTR	4	-	-	-	1
4.		Years of Experience as an Educator	LYOS	5	-	-	-	1
				<b>Total</b>				<b>5</b>

APPENDIX G

THE TABLE OF SPECIFICATIONS

### Table of Specifications

#### Demographic Information

No.	Variable	Conceptual Definition	Instrumental Definition	Operational Definition
1.	Participant's Identification Number (ID)	The number used to identify each questionnaire collected from participating Department Chairpersons and Department Members being studied.	Participant's Identification Number: _____	Consecutive Arabic numbers  As categorical data, the unique identifying number assigned to each questionnaire used as rubric to organize the data is the participant's identification number, and measures the variable.
2.	Department Chairperson's Identification Number (CHID)	The identifying number that connects participating Department Members with their Department Chairpersons.	Department Chairperson's Identification Number: ____	As categorical data, the unique identifying Arabic number assigned to each participating Department Chairperson and also assigned to each corresponding Department Member thereby connecting them for the purpose of data analysis, measures the variable.

Multifactor Leadership Questionnaire (MLQ)

Rater Form (5X-Short)

(Level-One Data)

No.	Variable	Conceptual Definition	Instrumental Definition	Operational Definition
3.	Idealized-Influence Attributed (II-A)	The extent to which followers perceive their leaders to be charismatic, confident, powerful, and focused on higher order ideals and ethics.	Items 10, 18, 21, and 25 complete this scale.  A sample item is:  18. Goes beyond self-interest for the good of the group.	Not at all = 0 Once in a while = 1 Sometimes = 2 Fairly often = 3 Frequently, if not always = 4  To measure the variable, the score for each item is added, and averaged by dividing by either the number of items included in the scale, or the number of items answered, creating an exact interval scale with a range from 0 to 16.



No.	Variable	Conceptual Definition	Instrumental Definition	Operational Definition
4.	Idealized-Influence Behavior (II-B)	The extent to which followers believe that the charismatic actions of their leaders focus on values, beliefs, and a sense of mission.	<p>Items 6, 14, 23, and 34 complete this scale.</p> <p>No sample is available for this variable due to the specifications of the copyright holders.</p>	<p>Not at all = 0 Once in a while = 1 Sometimes = 2 Fairly often = 3 Frequently, if not always = 4</p> <p>To measure the variable, the score for each item is added, and averaged by dividing by either the number of items included in the scale, or the number of items answered, creating an exact interval scale with a range from 0 to 16.</p>
5.	Inspirational Motivation (IM)	The extent to which followers believe that their leaders possess the energy, initiative, persistence, and a vision that move them to achieve performance outcomes that exceed expectations, as well as develop their leadership potential.	<p>Items 9, 13, 26, and 36 complete this scale.</p> <p>A sample item is:</p> <p>9. Talks optimistically about the future.</p>	<p>Not at all = 0 Once in a while = 1 Sometimes = 2 Fairly often = 3 Frequently, if not always = 4</p> <p>To measure the variable, the score for each item is added, and averaged by dividing by either the number of items included in the scale, or the number of items answered, creating an exact interval scale with a range from 0 to 16.</p>

No.	Variable	Conceptual Definition	Instrumental Definition	Operational Definition
6.	Intellectual Stimulation (IS)	The extent to which followers believe that their leaders possess the ability to stimulate them to be innovative and creative, to get them to question the tried ways of solving problems, to encourage them to examine problems from different angles, and to involve them in the decision-making process within their organizations.	<p>Items 2, 8, 30, and 32 complete this scale.</p> <p>No sample is available for this variable due to the specifications of the copyright holders.</p>	<p>Not at all = 0 Once in a while = 1 Sometimes = 2 Fairly often = 3 Frequently, if not always = 4</p> <p>To measure the variable, the score for each item is added, and averaged by dividing by either the number of items included in the scale, or the number of items answered, creating an exact interval scale with a range from 0 to 16.</p>
7.	Individualized Consideration (IC)	The extent to which followers perceive their leaders to be focused on understanding their needs, and on working continuously to get them to develop to their full potential.	<p>Items 15, 19, 39, and 31 complete this scale.</p> <p>No sample is available for this variable due to the specifications of the copyright holders.</p>	<p>Not at all = 0 Once in a while = 1 Sometimes = 2 Fairly often = 3 Frequently, if not always = 4</p> <p>To measure the variable, the score for each item is added, and averaged by dividing by either the number of items included in the scale, or the number of items answered, creating an exact interval scale with a range from 0 to 16.</p>

No.	Variable	Conceptual Definition	Instrumental Definition	Operational Definition
8.	Contingent Reward (CR)	The extent to which followers perceive their leaders to be involved in constructive transactions with them, clarifying expectations and offering recognition when goals are achieved.	<p>Items 1, 11, 16, and 35 complete this scale.</p> <p>A sample item is:</p> <p>35. Expresses satisfaction when I meet expectations.</p>	<p>Not at all = 0 Once in a while = 1 Sometimes = 2 Fairly often = 3 Frequently, if not always = 4</p> <p>To measure the variable, the score for each item is added, and averaged by dividing by either the number of items included in the scale, or the number of items answered, creating an exact interval scale with a range from 0 to 16.</p>
9.	Management-by-Exception Active (MBE-A)	The extent to which followers perceive their leaders to be focused on monitoring and controlling them through forced compliance with rules and regulations and expectations for meeting performance standards and behavioral norms.	<p>Items 4, 22, 24, and 27 complete this scale.</p> <p>A sample item is:</p> <p>27. Directs my attention towards failure to meet standards.</p>	<p>Not at all = 0 Once in a while = 1 Sometimes = 2 Fairly often = 3 Frequently, if not always = 4</p> <p>To measure the variable, the score for each item is added, and averaged by dividing by either the number of items included in the scale, or the number of items answered, creating an exact interval scale with a range from 0 to 16.</p>

No.	Variable	Conceptual Definition	Instrumental Definition	Operational Definition
10.	Management-by-Exception Passive (MBE-P)	The degree to which leaders are perceived by followers to display passive and reactive modes of behavior that do not respond to situations and problems systematically, and avoid specifying agreements, clarifying expectations, and providing goals and standards to be attained by followers.	<p>Items 3, 12, 17, and 20 complete this scale.</p> <p>No sample is available for this variable due to the specifications of the copyright holders.</p>	<p>Not at all = 0  Once in a while = 1  Sometimes = 2  Fairly often = 3  Frequently, if not always = 4</p> <p>To measure the variable, the score for each item is added, and averaged by dividing by either the number of items included in the scale, or the number of items answered, creating an exact interval scale with a range from 0 to 16.</p>
11.	Laissez-Faire Leadership (LF)	The degree to which followers perceive their leaders to be reactive, taking corrective action only after problems have become serious, and often avoiding making any decisions at all.	<p>Items 5, 7, 28, and 33 complete this scale.</p> <p>No sample is available for this variable due to the specifications of the copyright holders.</p>	<p>Not at all = 0  Once in a while = 1  Sometimes = 2  Fairly often = 3  Frequently, if not always = 4</p> <p>To measure the variable, the score for each item is added, and averaged by dividing by either the number of items included in the scale, or the number of items answered, creating an exact interval scale with a range from 0 to 16.</p>

No.	Variable	Conceptual Definition	Instrumental Definition	Operational Definition
12.	Extra Effort (EE)	The frequency with which raters perceive their leaders to motivate them to do more than they expected to do, thus heightening their desire to succeed, and increasing their willingness to try harder.	<p>Items 39, 42, and 44 complete this scale.</p> <p>No sample is available for this variable due to the specifications of the copyright holders.</p>	<p>Not at all = 0 Once in a while = 1 Sometimes = 2 Fairly often = 3 Frequently, if not always = 4</p> <p>To measure the variable, the score for each item is added, and averaged by dividing by either the number of items included in the scale, or the number of items answered, creating an exact interval scale with a range from 0 to 12.</p>
13.	Effectiveness (EFF)	How effective raters perceive their leaders to be at interacting at different levels of the organization, meeting the job-related needs of others, representing their group to higher authority, meeting organizational requirements, and leading a group that is effective.	<p>Items 37, 40, 43, and 45 complete this scale.</p> <p>45. Leads a group that is effective.</p>	<p>Not at all = 0 Once in a while = 1 Sometimes = 2 Fairly often = 3 Frequently, if not always = 4</p> <p>To measure the variable, the score for each item is added, and averaged by dividing by either the number of items included in the scale, or the number of items answered, creating an exact interval scale with a range from 0 to 16.</p>

<b>No.</b>	<b>Variable</b>	<b>Conceptual Definition</b>	<b>Instrumental Definition</b>	<b>Operational Definition</b>
14.	Satisfaction (SAT)	The extent to which raters are satisfied with their leaders' methods of working with others.	<p>Items 38 and 41 complete this scale.</p> <p>No sample is available for this variable due to the specifications of the copyright holders.</p>	<p>Not at all = 0  Once in a while = 1  Sometimes = 2  Fairly often = 3  Frequently, if not always = 4</p> <p>To measure the variable, the score for each item is added, and averaged by dividing by either the number of items included in the scale, or the number of items answered, creating an exact interval scale with a range from 0 to 8.</p>

Leader Attributes and Behaviors Demographic Information (LABDI)

Leader Form

(Level-Two Data)

No.	Variable	Conceptual Definition	Instrumental Definition	Operational Definition
15.	Leader Gender (LGEN)	An indication of whether or not the leader is female or male.	1. Gender: _____  (0) Female (1) Male	Female = 0 Male = 1  As categorical data, the number corresponding to the gender given will be assigned as the gender of the leader, to measure the variable.
16.	Formal Leadership Training (FLTR)	The level of leadership education acquired and certified through educational institutions by the leader prior to, or during the period of his or her appointment as a Department Chairperson.	2. Have you received any formal leadership training?  (0) No (1) Yes  (If your answer to Question 2 is “No”, please disregard Question 3, and move to Question 4.)	No = 0 Yes = 1  As ordinal data, a response of “No” will be assigned a “0” to indicate that no formal leadership training has been received, and a response of “Yes” will be assigned a “1” to indicate that formal leadership training has been received. This will be used in conjunction with Item 3, to measure the variable.

No.	Variable	Conceptual Definition	Instrumental Definition	Operational Definition
			<p>3. What is your highest level of formal leadership training, including or in addition to your area of specialization?</p> <p>(1) Certificate  (2) Diploma  (3) Associates  (4) Bachelor's  (5) Master's  (6) Doctoral Degree  (7) Postgraduate  (8) Other (Please specify)</p>	<p>Certificate = 1  Diploma = 2  Associates = 3  Bachelor's = 4  Master's = 5  Doctoral = 6  Postgraduate = 7  Other (Please specify) = 8</p> <p>To measure the variable, the response to Question 2: "(0) No", will be used to indicate no formal leadership training; while the number assigned to each of the responses to Question 3 will be used to indicate the level of formal leadership training received by those whose response was "(1) Yes". This is categorical data.</p>



No.	Variable	Conceptual Definition	Instrumental Definition	Operational Definition
17.	Informal Leadership Training (ILTR)	The sum of the number of leadership exposures (such as none, experience, challenging assignments, modeling by superiors, job rotation, coaching, mentoring, e-mentoring programs, personal development, counseling, and any other specified exposures) not acquired and certified through educational institutions, and received prior to, or during the period of the appointment of the leader as a Department Chairperson.	<p>4. Place a tick before the number preceding all that apply to you regarding any informal leadership training received prior to, or during your time of service as a Department Chairperson:</p> <p>(0) None  (1) Experience  (2) Challenging Assignments  (3) Modeling by Superiors  (4) Job Rotation  (5) Coaching  (6) Mentoring  (7) E-Mentoring Programs  (8) Personal Development  (9) Counseling  (10) Other (Please specify)</p>	To measure the variable, the first response to Question 4: “(0) None” will be used to indicate no informal leadership training; and the total number of responses from “(1) Experience” to “(10) Other (Please specify)”, will be summed and assigned as the exposure to informal leadership training received.
18.	Years of Service as an Educator (LYOS)	The number of years for which the leader has been working as an educator.	5. For how many years have you served as an educator? _____	As ordinal data, the number given in response to Question 5 will be assigned as the years of experience of the leader as an educator, to measure the variable.

## APPENDIX H

### HIERARCHICAL LINEAR MODEL (HLM) RESULTS

## Hierarchical Linear Model (HLM) Results for the Outcome of Leadership Extra Effort (EE)

The Null (Unconditional) Model

HLM Data\HLM 7 Project\hlm2.html

The maximum number of level-1 units = 148. The maximum number of level-2 units = 20. The maximum number of iterations = 100.

Method of estimation: Restricted maximum likelihood

The outcome variable is EE

### Summary of the Model Specified

Level-1 Model

$$EE_{mj} = \psi_{0j} + e_{mj}$$

Level-2 Model

$$\psi_{0j} = \gamma_{00} + u_{0j}$$

Mixed Model

$$EE_{mj} = \gamma_{00} + u_{0j} + e_{mj}$$

Final Results—Iteration 6. Iterations stopped due to small change in likelihood function.

$$\sigma^2_{\varepsilon} = 1.02228$$

$\tau$   
INTRCPT1, $\psi_0$  0.41646

Random Level-One Coefficient	Reliability Estimate
Intercept 1 ( $\psi_0$ )	0.701

*Final Estimation of Fixed Effects*

Fixed Effect	Coefficient	Standard Error	<i>t</i> -ratio	Approximate <i>d.f.</i>	<i>P</i> -Value
For Intercept 1( $\psi_0$ )					
Intercept 2 ( $\gamma_{00}$ )	2.768055	0.172318	16.064	19	< 0.001

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*Final Estimation of Variance Components*

Random Effect	Standard Deviation	Variance Component	<i>d.f.</i>	$\chi^2$	<i>P</i> -Value
Intercept 1 $u_0$	0.64533	0.41646	19	75.77874	< 0.001
Level-1 <i>e</i>	1.01108	1.02228			

**Statistics for Current Covariance Components Model**

Deviance = 447.816863

Number of estimated parameters = 2

## The Full Model

### HLM Data\HLM 7 Project\hlm2.html

The maximum number of level-1 units = 148. The maximum number of level-2 units = 20. The maximum number of iterations = 100.

Method of estimation: Restricted maximum likelihood

The outcome variable is EE

### Summary of the Model Specified

#### Level-1 Model

$$EE_{mj} = \psi_{0j} + \psi_{1j}*(II-A_{mj}) + \psi_{2j}*(II-B_{mj}) + \psi_{3j}*(IM_{mj}) + \psi_{4j}*(IS_{mj}) + \psi_{5j}*(IC_{mj}) + \psi_{6j}*(CR_{mj}) + \psi_{7j}*(MBE-A_{mj}) + \psi_{8j}*(MBE-P_{mj}) + \psi_{9j}*(LF_{mj}) + e_{mj}$$

#### Level-2 Model

$$\psi_{0j} = \gamma_{00} + \gamma_{01}*(LGEN_j) + \gamma_{02}*(FLTR_j) + \gamma_{03}*(ILTR_j) + \gamma_{04}*(LYOS_j) + u_{0j}$$

$$\psi_{1j} = \gamma_{10}$$

$$\psi_{2j} = \gamma_{20}$$

$$\psi_{3j} = \gamma_{30}$$

$$\psi_{4j} = \gamma_{40}$$

$$\psi_{5j} = \gamma_{50}$$

$$\psi_{6j} = \gamma_{60}$$

$$\psi_{7j} = \gamma_{70}$$

$$\psi_{8j} = \gamma_{80}$$

$$\psi_{9j} = \gamma_{90}$$

### Mixed Model

$$\begin{aligned} EE_{mj} &= \gamma_{00} + \gamma_{01} * LGEN_j + \gamma_{02} * FLTR_j + \gamma_{03} * ILTR_j + \gamma_{04} * LYOS_j \\ &+ \gamma_{10} * II-A_{mj} \\ &+ \gamma_{20} * II-B_{mj} \\ &+ \gamma_{30} * IM_{mj} \\ &+ \gamma_{40} * IS_{mj} \\ &+ \gamma_{50} * IC_{mj} \\ &+ \gamma_{60} * CR_{mj} \\ &+ \gamma_{70} * MBE-A_{mj} \\ &+ \gamma_{80} * MBE-P_{mj} \\ &+ \gamma_{90} * LF_{mj} \\ &+ u_{0j} + e_{mj} \end{aligned}$$

Final Results—Iteration 641. Iterations stopped due to small change in likelihood function.

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$$\sigma^2_{\varepsilon} = 0.39142$$

$\tau$

$$\text{INTRCPT1}, \psi_0 \quad 0.02367$$

Random Level-One Coefficient	Reliability Estimate
Intercept 1 ( $\psi_0$ )	0.283

*Final Estimation of Fixed Effects*

Fixed Effect	Coefficient	Standard Error	t-ratio	Approximate d.f.	P-Value
For Intercept 1 ( $\psi_0$ )					
Intercept 2 ( $\gamma_{00}$ )	0.340268	0.363360	0.936	15	0.364
Leader Gender (LGEN) $\gamma_{01}$	0.084391	0.161886	0.521	15	0.610
Formal Leadership Training (FLTR) $\gamma_{02}$	-0.011356	0.026832	-0.423	15	0.678
Informal Leadership Training (ILTR) $\gamma_{03}$	-0.050861	0.040070	-1.269	15	0.224
Years of Service as an Educator (LYOS) $\gamma_{04}$	-0.000450	0.005720	-0.079	15	0.938
For Idealized-Influence Attributed (II-A) Slope ( $\psi_1$ )					
Intercept 2 ( $\gamma_{10}$ )	0.094397	0.133535	0.707	119	0.481
For Idealized-Influence Behavior (II-B) Slope ( $\psi_2$ )					
Intercept 2 ( $\gamma_{20}$ )	-0.030064	0.138780	-0.217	119	0.829

Fixed Effect	Coefficient	Standard Error	<i>t</i> -ratio	Approximate <i>d.f.</i>	<i>P</i> -Value
For Inspirational Motivation (IM) Slope ( $\psi_3$ )					
Intercept 2 ( $\gamma_{30}$ )	0.359549	0.138172	2.602	119	0.010
For Intellectual Stimulation (IS) Slope ( $\psi_4$ )					
Intercept 2 ( $\gamma_{40}$ )	0.170847	0.116775	1.463	119	0.146
For Individualized Consideration (IC) Slope ( $\psi_5$ )					
Intercept 2 ( $\gamma_{50}$ )	0.371724	0.119232	3.118	119	0.002
For Contingent Reward (CR) Slope ( $\psi_6$ )					
Intercept 2 ( $\gamma_{60}$ )	0.074686	0.117086	0.638	119	0.525
For Management-by-Exception Active (MBE-A) Slope ( $\psi_7$ )					
Intercept 2 ( $\gamma_{70}$ )	-0.011960	0.062066	-0.193	119	0.848
For Management-by-Exception Passive (MBE-P) Slope ( $\psi_8$ )					
Intercept 2 ( $\gamma_{80}$ )	-0.164990	0.082892	-1.990	119	0.049
For Laissez-Faire Leadership (LF) Slope ( $\psi_9$ )					
Intercept 2 ( $\gamma_{90}$ )	-0.013660	0.079387	-0.172	119	0.864



*Final Estimation of Variance Components*

Random Effect	Standard Deviation	Variance Component	<i>d.f.</i>	$\chi^2$	<i>P</i> -Value
Intercept 1 $u_0$	0.15384	0.02367	15	18.64268	0.230
Level-1 $e$	0.62563	0.39142			

**Statistics for Current Covariance Components Model**

Deviance = 325.730337

Number of estimated parameters = 2

## Hierarchical Linear Model (HLM) Results for the Outcome of Leadership Effectiveness (EFF)

The Null (Unconditional) Model

HLM Data\HLM 7 Project\hlm2.html

The maximum number of level-1 units = 148. The maximum number of level-2 units = 20. The maximum number of iterations = 100.

Method of estimation: Restricted maximum likelihood

The outcome variable is EFF

### Summary of the Model Specified

Level-1 Model

$$EFF_{mj} = \psi_{0j} + e_{mj}$$

Level-2 Model

$$\psi_{0j} = \gamma_{00} + u_{0j}$$

Mixed Model

$$EFF_{mj} = \gamma_{00} + u_{0j} + e_{mj}$$

Final Results—Iteration 6. Iterations stopped due to small change in likelihood function.

$$\sigma^2_{\varepsilon} = 0.79760$$

$\tau$   
INTRCPT1, $\psi_0$  0.27634

Random Level-One Coefficient	Reliability Estimate
Intercept 1 ( $\psi_0$ )	0.668

*Final Estimation of Fixed Effects*

Fixed Effect	Coefficient	Standard Error	<i>t</i> -ratio	Approximate <i>d.f.</i>	<i>P</i> -Value
For Intercept 1( $\psi_0$ )					
Intercept 2 ( $\gamma_{00}$ )	2.855020	0.143801	19.854	19	< 0.001

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*Final Estimation of Variance Components*

Random Effect	Standard Deviation	Variance Component	<i>d.f.</i>	$\chi^2$	<i>P</i> -Value
Intercept 1 $u_0$	0.52568	0.27634	19	61.34046	< 0.001
Level-1 $e$	0.89309	0.79760			

**Statistics for Current Covariance Components Model**

Deviance = 409.229375

Number of estimated parameters = 2

## The Full Model

### HLM Data\HLM 7 Project\hlm2.html

The maximum number of level-1 units = 148. The maximum number of level-2 units = 20. The maximum number of iterations = 100.

Method of estimation: Restricted maximum likelihood

The outcome variable is EFF

### Summary of the Model Specified

#### Level-1 Model

$$EFF_{mj} = \psi_{0j} + \psi_{1j}*(II-A_{mj}) + \psi_{2j}*(II-B_{mj}) + \psi_{3j}*(IM_{mj}) + \psi_{4j}*(IS_{mj}) + \psi_{5j}*(IC_{mj}) + \psi_{6j}*(CR_{mj}) + \psi_{7j}*(MBE-A_{mj}) + \psi_{8j}*(MBE-P_{mj}) + \psi_{9j}*(LF_{mj}) + e_{mj}$$

#### Level-2 Model

$$\psi_{0j} = \gamma_{00} + \gamma_{01}*(LGEN_j) + \gamma_{02}*(FLTR_j) + \gamma_{03}*(ILTR_j) + \gamma_{04}*(LYOS_j) + u_{0j}$$

$$\psi_{1j} = \gamma_{10}$$

$$\psi_{2j} = \gamma_{20}$$

$$\psi_{3j} = \gamma_{30}$$

$$\psi_{4j} = \gamma_{40}$$

$$\psi_{5j} = \gamma_{50}$$

$$\psi_{6j} = \gamma_{60}$$

$$\psi_{7j} = \gamma_{70}$$

$$\psi_{8j} = \gamma_{80}$$

$$\psi_{9j} = \gamma_{90}$$

### Mixed Model

$$\begin{aligned} EFF_{mj} = & \gamma_{00} + \gamma_{01} * LGEN_j + \gamma_{02} * FLTR_j + \gamma_{03} * ILTR_j + \gamma_{04} * LYOS_j \\ & + \gamma_{10} * II-A_{mj} \\ & + \gamma_{20} * II-B_{mj} \\ & + \gamma_{30} * IM_{mj} \\ & + \gamma_{40} * IS_{mj} \\ & + \gamma_{50} * IC_{mj} \\ & + \gamma_{60} * CR_{mj} \\ & + \gamma_{70} * MBE-A_{mj} \\ & + \gamma_{80} * MBE-P_{mj} \\ & + \gamma_{90} * LF_{mj} \\ & + u_{0j} + e_{mj} \end{aligned}$$

Final Results—Iteration 2619. Iterations stopped due to small change in likelihood function

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$$\sigma^2_{\varepsilon} = 0.22484$$

$\tau$

$$\text{INTRCPT1}, \psi_0 \quad 0.00005$$

Random Level-One Coefficient	Reliability Estimate
Intercept 1 ( $\psi_0$ )	0.002

*Final Estimation of Fixed Effects*

Fixed Effect	Coefficient	Standard Error	<i>t</i> -ratio	Approximate <i>d.f.</i>	<i>P</i> -Value
For Intercept 1( $\psi_0$ )					
Intercept 2 ( $\gamma_{00}$ )	0.705107	0.252975	2.787	15	0.014
Leader Gender (LGEN) $\gamma_{01}$	-0.073115	0.105388	-0.694	15	0.498
Formal Leadership Training (FLTR) $\gamma_{02}$	-0.019170	0.016353	-1.172	15	0.259
Informal Leadership Training (ILTR) $\gamma_{03}$	-0.019353	0.026041	-0.743	15	0.469
Years of Service as an Educator (LYOS) $\gamma_{04}$	0.002837	0.003697	0.767	15	0.455
For Idealized-Influence Attributed (II-A) Slope ( $\psi_1$ )					
Intercept 2 ( $\gamma_{10}$ )	0.275995	0.100526	2.745	119	0.007
For Idealized-Influence Behavior (II-B) Slope ( $\psi_2$ )					
Intercept 2 ( $\gamma_{20}$ )	0.156208	0.103102	1.515	119	0.132

Fixed Effect	Coefficient	Standard Error	<i>t</i> -ratio	Approximate <i>d.f.</i>	<i>P</i> -Value
For Inspirational Motivation (IM) Slope ( $\psi_3$ )					
Intercept 2 ( $\gamma_{30}$ )	0.191024	0.100838	1.894	119	0.061
For Intellectual Stimulation (IS) Slope ( $\psi_4$ )					
Intercept 2 ( $\gamma_{40}$ )	0.182677	0.087627	2.085	119	0.039
For Individualized Consideration (IC) Slope ( $\psi_5$ )					
Intercept 2 ( $\gamma_{50}$ )	0.049827	0.086702	0.575	119	0.567
For Contingent Reward (CR) Slope ( $\psi_6$ )					
Intercept 2 ( $\gamma_{60}$ )	0.054045	0.087393	0.618	119	0.537
For Management-by-Exception Active (MBE-A) Slope ( $\psi_7$ )					
Intercept 2 ( $\gamma_{70}$ )	-0.028353	0.045944	-0.617	119	0.538
For Management-by-Exception Passive (MBE-P) Slope ( $\psi_8$ )					
Intercept 2 ( $\gamma_{80}$ )	-0.094485	0.062144	-1.520	119	0.131
For Laissez-Faire Leadership (LF) Slope ( $\psi_9$ )					
Intercept 2 ( $\gamma_{90}$ )	-0.168465	0.059133	-2.849	119	0.005

*Final Estimation of Variance Components*

Random Effect	Standard Deviation	Variance Component	<i>d.f.</i>	$\chi^2$	<i>P</i> -Value
Intercept 1 $u_0$	0.00691	0.00005	15	10.56681	> 0.500
Level-1 $e$	0.47418	0.22484			

**Statistics for Current Covariance Components Model**

Deviance = 246.935130

Number of estimated parameters = 2



## Hierarchical Linear Model (HLM) Results for the Outcome of Leadership Satisfaction (SAT)

The Null (Unconditional) Model

HLM Data\HLM 7 Project\hlm2.html

The maximum number of level-1 units = 148. The maximum number of level-2 units = 20. The maximum number of iterations = 100.

Method of estimation: Restricted maximum likelihood

The outcome variable is SAT

### Summary of the Model Specified

Level-1 Model

$$SAT_{mj} = \psi_{0j} + e_{mj}$$

Level-2 Model

$$\psi_{0j} = \gamma_{00} + u_{0j}$$

Mixed Model

$$SAT_{mj} = \gamma_{00} + u_{0j} + e_{mj}$$

Final Results—Iteration 6. Iterations stopped due to small change in likelihood function.

$$\sigma^2_{\varepsilon} = 1.06785$$

$$\tau$$

INTRCPT1, $\psi_0$	0.25437
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Random Level-One Coefficient	Reliability Estimate
Intercept 1 ( $\psi_0$ )	0.586

*Final Estimation of Fixed Effects*

Fixed Effect	Coefficient	Standard Error	<i>t</i> -ratio	Approximate <i>d.f.</i>	<i>P</i> -Value
For Intercept 1 ( $\psi_0$ )					
Intercept 2 ( $\gamma_{00}$ )	2.884558	0.147326	19.579	19	< 0.001

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*Final Estimation of Variance Components*

Random Effect	Standard Deviation	Variance Component	<i>d.f.</i>	$\chi^2$	<i>P</i> -Value
Intercept 1 $u_0$	0.50435	0.25437	19	49.37393	< 0.001
Level-1 $e$	1.03337	1.06785			

**Statistics for Current Covariance Components Model**

Deviance = 447.662966

Number of estimated parameters = 2

## The Full Model

### HLM Data\HLM 7 Project\hlm2.html

The maximum number of level-1 units = 148. The maximum number of level-2 units = 20. The maximum number of iterations = 100.

Method of estimation: Restricted maximum likelihood

The outcome variable is SAT

### Summary of the Model Specified

#### Level-1 Model

$$SAT_{mj} = \psi_{0j} + \psi_{1j}*(II-A_{mj}) + \psi_{2j}*(II-B_{mj}) + \psi_{3j}*(IM_{mj}) + \psi_{4j}*(IS_{mj}) + \psi_{5j}*(IC_{mj}) + \psi_{6j}*(CR_{mj}) + \psi_{7j}*(MBE-A_{mj}) + \psi_{8j}*(MBE-P_{mj}) + \psi_{9j}*(LF_{mj}) + e_{mj}$$

#### Level-2 Model

$$\psi_{0j} = \gamma_{00} + \gamma_{01}*(LGEN_j) + \gamma_{02}*(FLTR_j) + \gamma_{03}*(ILTR_j) + \gamma_{04}*(LYOS_j) + u_{0j}$$

$$\psi_{1j} = \gamma_{10}$$

$$\psi_{2j} = \gamma_{20}$$

$$\psi_{3j} = \gamma_{30}$$

$$\psi_{4j} = \gamma_{40}$$

$$\psi_{5j} = \gamma_{50}$$

$$\psi_{6j} = \gamma_{60}$$

$$\psi_{7j} = \gamma_{70}$$

$$\psi_{8j} = \gamma_{80}$$

$$\psi_{9j} = \gamma_{90}$$

## Mixed Model

$$\begin{aligned} SAT_{mj} = & \gamma_{00} + \gamma_{01} * LGEN_j + \gamma_{02} * FLTR_j + \gamma_{03} * ILTR_j + \gamma_{04} * LYOS_j \\ & + \gamma_{10} * II-A_{mj} \\ & + \gamma_{20} * II-B_{mj} \\ & + \gamma_{30} * IM_{mj} \\ & + \gamma_{40} * IS_{mj} \\ & + \gamma_{50} * IC_{mj} \\ & + \gamma_{60} * CR_{mj} \\ & + \gamma_{70} * MBE-A_{mj} \\ & + \gamma_{80} * MBE-P_{mj} \\ & + \gamma_{90} * LF_{mj} \\ & + u_{0j} + e_{mj} \end{aligned}$$

Final Results—Iteration 1592. Iterations stopped due to small change in likelihood function.

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$$\sigma^2_{\varepsilon} = 0.27261$$

$$\begin{array}{l} \tau \\ \text{INTRCPT1}, \psi_0 \quad 0.00055 \end{array}$$

Random Level-One Coefficient	Reliability Estimate
Intercept 1 ( $\psi_0$ )	0.015

*Final Estimation of Fixed Effects*

Fixed Effect	Coefficient	Standard Error	t-ratio	Approximate d.f.	P-Value
For Intercept 1 ( $\psi_0$ )					
Intercept 2 ( $\gamma_{00}$ )	0.142723	0.279466	0.511	15	0.617
Leader Gender (LGEN) $\gamma_{01}$	0.164945	0.116697	1.413	15	0.178
Formal Leadership Training (FLTR) $\gamma_{02}$	-0.018437	0.018181	-1.014	15	0.327
Informal Leadership Training (ILTR) $\gamma_{03}$	-0.038602	0.028839	-1.339	15	0.201
Years of Service as an Educator (LYOS) $\gamma_{04}$	0.006754	0.004094	1.650	15	0.120
For Idealized-Influence Attributed (II-A) Slope ( $\psi_1$ )					
Intercept 2 ( $\gamma_{10}$ )	0.261477	0.110724	2.362	119	0.020
For Idealized-Influence Behavior (II-B) Slope ( $\psi_2$ )					
Intercept 2 ( $\gamma_{20}$ )	0.117778	0.113618	1.037	119	0.302

Fixed Effect	Coefficient	Standard Error	<i>t</i> -ratio	Approximate <i>d.f.</i>	<i>P</i> -Value
For Inspirational Motivation (IM) Slope ( $\psi_3$ )					
Intercept 2 ( $\gamma_{30}$ )	0.113159	0.111198	1.018	119	0.311
For Intellectual Stimulation (IS) Slope ( $\psi_4$ )					
Intercept 2 ( $\gamma_{40}$ )	0.323864	0.096526	3.355	119	0.001
For Individualized Consideration (IC) Slope ( $\psi_5$ )					
Intercept 2 ( $\gamma_{50}$ )	0.198150	0.095639	2.072	119	0.040
For Contingent Reward (CR) Slope ( $\psi_6$ )					
Intercept 2 ( $\gamma_{60}$ )	0.078763	0.096297	0.818	119	0.415
For Management-by-Exception Active (MBE-A) Slope ( $\psi_7$ )					
Intercept 2 ( $\gamma_{70}$ )	-0.031581	0.050640	-0.624	119	0.534
For Management-by-Exception Passive (MBE-P) Slope ( $\psi_8$ )					
Intercept 2 ( $\gamma_{80}$ )	-0.037809	0.068460	-0.552	119	0.582
For Laissez-Faire Leadership (LF) Slope ( $\psi_9$ )					
Intercept 2 ( $\gamma_{90}$ )	-0.115464	0.065159	-1.772	119	0.079

*Final Estimation of Variance Components*

Random Effect	Standard Deviation	Variance Component	<i>d.f.</i>	$\chi^2$	<i>P</i> -Value
Intercept 1 $u_0$	0.02351	0.00055	15	10.30205	> 0.500
Level-1 $e$	0.52212	0.27261			

**Statistics for Current Covariance Components Model**

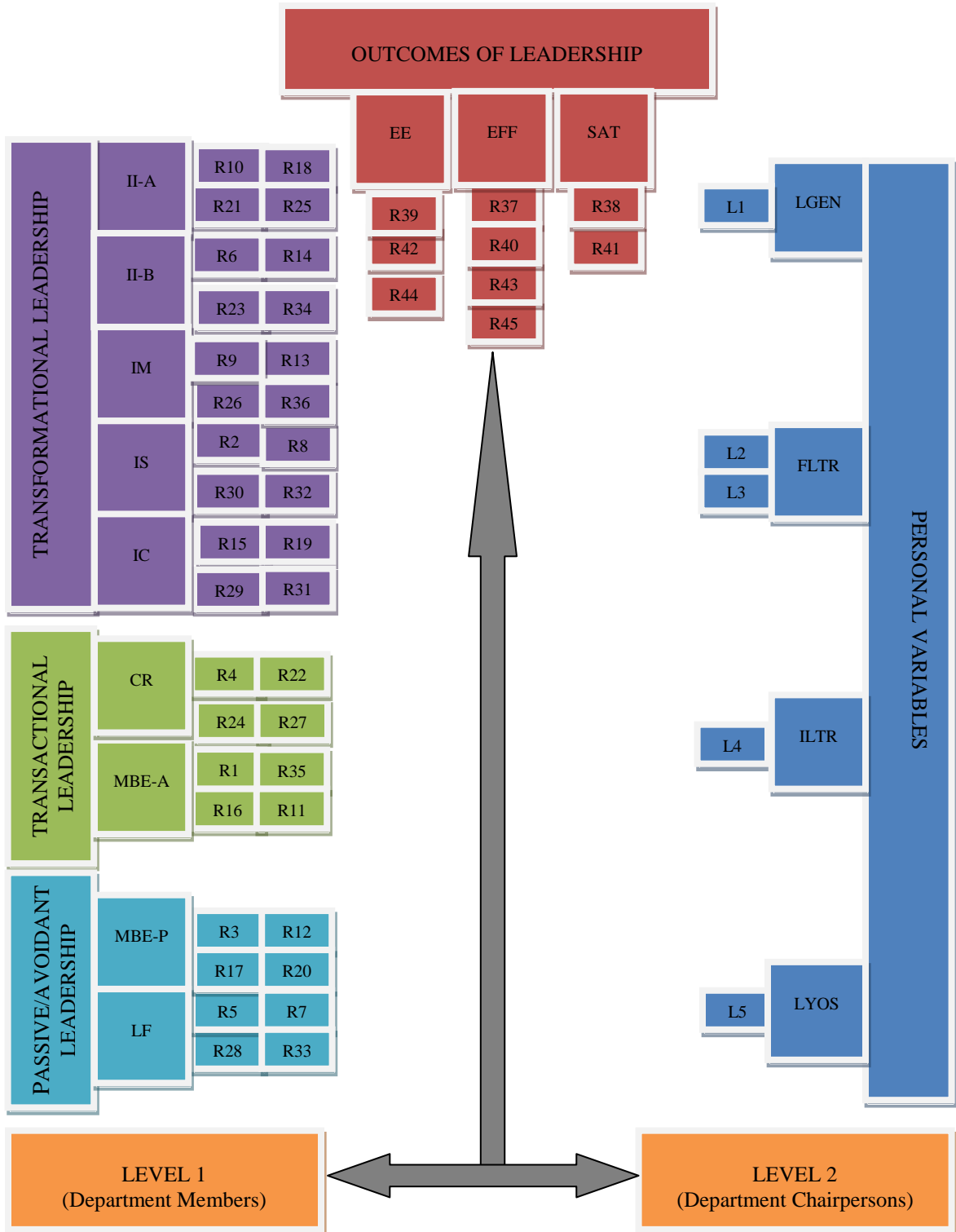
Deviance = 272.913172

Number of estimated parameters = 2

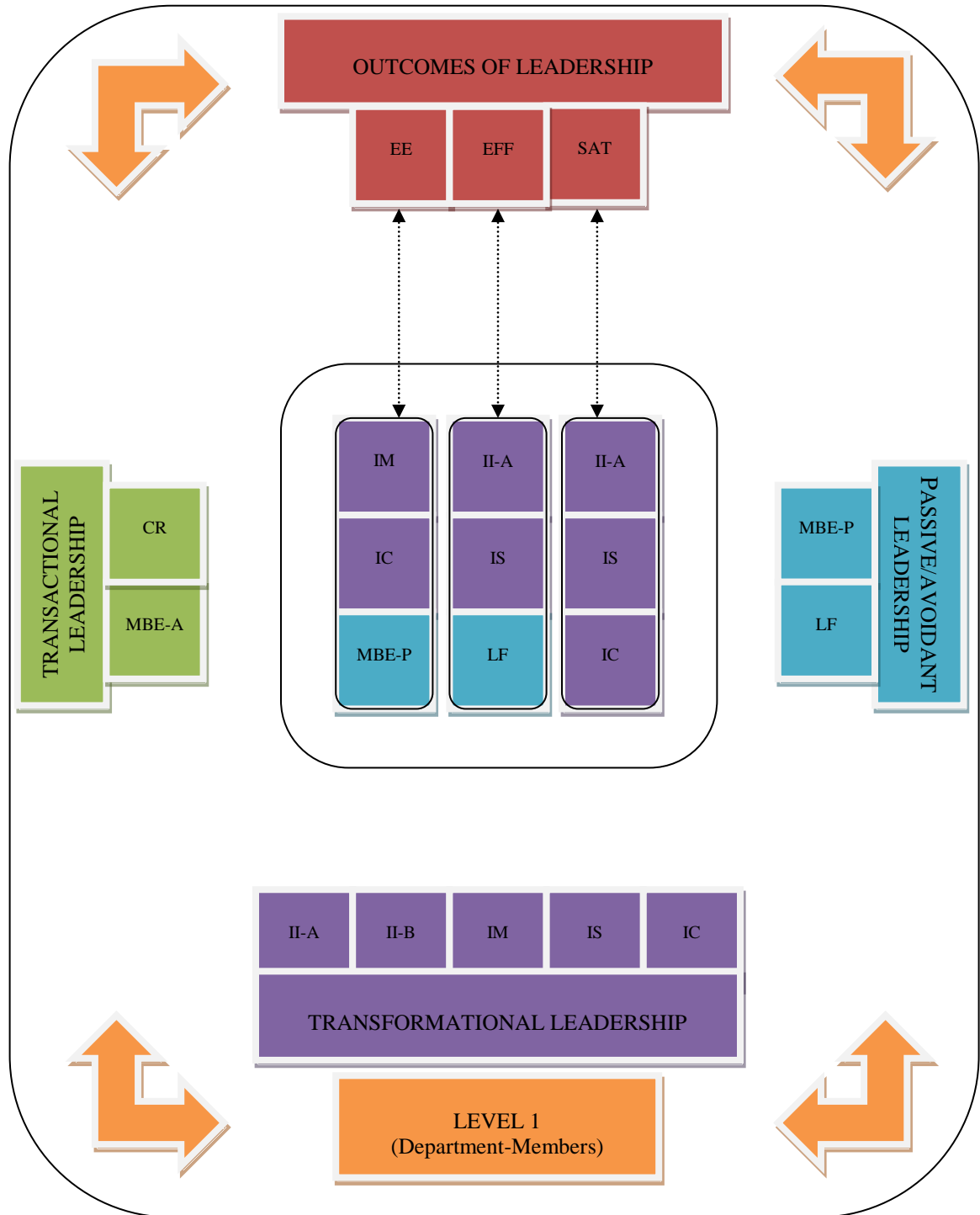
APPENDIX I  
THE VARIABLE MAPS



## The Comprehensive Variable Map



### The Hierarchical Linear Model (HLM) Output Map



## Key to the Variables and Maps

### Demographic Variables

ID: Participant's Identification Number  
CHID: Department Chairperson's Identification Number

### Transformational Leadership

II-A: Idealized-Influence Attributed  
II-B: Idealized-Influence Behavior  
IM: Inspirational Motivation  
IS: Intellectual Stimulation  
IC: Individualized Consideration

### Transactional Leadership

CR: Contingent Reward  
MBE-A: Management-by-Exception Active

### Passive/Avoidant Leadership

MBE-P: Management-by-Exception Passive  
LF: Laissez-Faire Leadership

### Outcomes of Leadership

EE: Extra Effort  
EFF: Effectiveness  
SAT: Satisfaction

### Personal Variables

LGEN: Leader Gender  
FLTR: Formal Leadership Training  
ILTR: Informal Leadership Training  
LYOS: Years of Service as an Educator

### Questionnaires

R1-45: Multifactor Leadership Questionnaire (MLQ) Rater Form (5X-Short)  
L1- 5: Leader Attributes and Behaviors Demographic Information (LABDI) Leader Form

## REFERENCE LIST

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