JOBS SATISFACTION AND DISSATISFACTION FACTORS INFLUENCING CONTRACT RENEWAL OF GENERATION Y AND NON-GENERATION Y TEACHERS WORKING AT INTERNATIONAL SCHOOLS IN ASIA

by

Hoi Wah Benny Fong

Liberty University

A Dissertation Presented in Partial Fulfillment
Of the Requirements for the Degree
Doctor of Education

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2015
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APPROVED BY:

Leldon Nichols, Ed. D. Assistant Professor, Liberty University, Committee Chair

David Barton, Ph. D., Director of Analytics, Liberty University, Committee Member

W. Philip Bassett, Ph. D., Director of Teacher Training, International Schools of China, Committee Member

Scott Watson, Ph. D, Associate Dean, Advanced Programs
ABSTRACT

Current literature on job satisfaction and dissatisfaction does not comprehensively explain the possible relationship among the many factors in Herzberg et al.’s (1959) two-factor theory and teacher retention in international schools in Asia. While research exploring different individual factors to retention and job satisfaction exists, quantitative studies do not appear in great abundance, especially literature with international schools as the target. Given access to quantitative data, international school administrators may plan strategically and implement initiatives to retain and empower effective teachers, both Gen Y and non-Gen Y. The purpose of this correlational study is to examine the relationship between factors of job satisfaction and dissatisfaction in the contract renewal of Gen Y and non-Gen Y teachers working at international schools in Asia. This quantitative, non-experimental study will use a correlational research design, and survey data will be collected from international schools in Asia. A convenience sample consisting of 116 teachers from international schools in Asia was used in the study. Binary logistic regression analyses were used to analyze the data. Based on study results, there exist statistically significant and meaningful connections between factors of job satisfaction and contract renewal for Gen Y and non-Gen Y teachers. The factor communication is a statistically significant predictor of contract renewal for Gen Y teachers. The factors nature of work and supervision are statistically significant predictors of contract renewal for non-Gen Y teachers.

Keywords: job satisfaction, teacher retention, teacher attrition, Baby Boomers, Generation X, Generation Y, international schools
Dedication

I would like to dedicate this dissertation to my father and mother, Ho-Che Fong and Iun-Cheung Tam. Despite not being given the opportunity to attend college, they believed that immigrating to the United States would give my siblings and me the educational benefits that were not available in Hong Kong. My father never complained as he worked long, countless hours in hot, stuffy restaurant kitchens to fund our private Christian education. My parents eventually witnessed my sister and me getting our college degrees; finally achieving their dream through us. Now, as I earn a terminal degree in education, it is only fitting that I attribute the completion of this academic journey to the dedication and perseverance of my father and mother.

I would also like to dedicate this dissertation to my loving wife, Hannah Melissa Fong. I praise Hannah for her understanding while I spent hours alone at the computer researching and writing during the beginning years of our marriage. Her support through the difficult parts of the process and celebrations at the different milestones motivated me to push forward until completion. Without her continual encouragement through this academic journey, I would not have completed the manuscript.
Acknowledgments

Soli Deo Gloria! Glory to God alone! I acknowledge that I am only an instrument of His master plan. Without His saving grace through His Son Jesus, I would be hopeless and without direction.

I would like to thank Dr. David Barton for agreeing to be a part of my dissertation committee. Without his vast experience and insight in advanced statistics, I would not have closed in on the nuances of binary logistical regression.

I would like to thank Dr. Philip Bassett for also agreeing to be a part of my dissertation committee and his encouragement even before this journey. I still remember the day he came to my school and objectively gave me information about working full time in China. Without this divine appointment I would not have started my path to earning an Ed. D. and having the passion to study teachers working at international schools in Asia.

I would like to thank my siblings (Donald, Steven, and Lisa) and my sister-in-laws (Cherry and Tiffany) for their continued support with their kind words.

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List of Abbreviations

The East Asia Regional Council of Schools (EARCOS)

Generation X (Gen X)

Generation Y (Gen Y)

International Schools of China (ISC)

Job Satisfaction Survey (JSS)

Programme for International Student Assessment (PISA)

Southern Association of Colleges and Schools (SACS)

Social Economic Status (SES)

Western Association of Schools and Colleges (WASC)
CHAPTER ONE: INTRODUCTION

Background

Current literature on job satisfaction and dissatisfaction does not comprehensively explain the possible relationship among the many factors in Herzberg et al.’s (1959) two-factor theory and teacher retention in international schools in Asia (Odland & Ruzicka, 2009; Chandler, 2010). Administrators trying to retain effective teachers within international schools in Asia need to first understand the factors influencing job satisfaction and dissatisfaction.

While the demographics of any teaching staff can vary greatly, one category to explore is which generation category the teacher belongs to (e.g., Baby Boomers, Gen X, Gen Y). Generation Y (Gen Y) workers comprise the fastest growing segment of the workforce in the United States and in the world. Although sociologists differ on the exact cut-off points, those born near the period of time between 1977 and 1995 are categorized as Gen Y (Behrstock, 2010; Treuren & Anderson, 2010; Walmsley, 2011). Gen Y, also called “Millennials,” is a generation characterized as being digital natives, family centered, ambitious, team oriented, and attention-craving (Black, 2010; Walmsley, 2011).

With the majority of the work force being Gen Y, administrators and districts realize that interactions with Generation Y teachers are different than with those of preceding generations due to differing work values (Hansen & Leuty, 2012). While qualitative studies exist to discuss the differences, studies that contain quantitative results are less common. Results from quantitative research can assist administrators in making organizational decisions to improve Gen Y and non-Gen Y teacher retention.

Retaining effective teachers maximizes school and district resources and minimizes disruptions when onboarding new teachers (Coggins, Zuckerman, & McKelvey, 2010).
International schools are not immune to the staffing challenges that public and private schools in the United States face.

Building on Maslow’s (1943) Hierarchy of Needs Theory on human motivation, Herzberg’s Two Factor Theory, also known as Motivation-Hygiene Theory, proposed that job satisfaction and dissatisfaction are independent of each other (Herzberg, Mausner, & Snyderman, 1959). In a later article, Herzberg (1968) stated that job satisfaction and dissatisfaction are not opposites. In fact, the opposite of satisfaction is no satisfaction; alternately, the opposite of dissatisfaction is no dissatisfaction. Although Herzberg’s theory was proposed over fifty years ago, the tenets of the theory can still be a valuable framework for school administrators to use for teacher motivation and retention.

When compared to 50 years ago, factors influencing teacher job satisfaction today are very different. Overall, educators seemed less satisfied in the 21st century in comparison with the middle of the 20th century. In addition to having a significantly lower job satisfaction rate, contemporary teachers’ sources of dissatisfaction are related to teaching itself (e.g. student behavior, time demands), whereas in 1962, factors influencing job satisfaction were external (e.g. salary, human relations) (Klassen & Anderson, 2009).

During the 1990s and 2000s, research was conducted on job satisfaction and dissatisfaction relating to empowerment (Wu & Short, 1996), leadership styles (Chin, 2007), goal setting and accomplishments (Chapman, 1982; Papaioannou & Christodoulidis, 2007), and public versus private school settings (Papanastasiou & Zembylas, 2005). More recent literature on job satisfaction and dissatisfaction focused on areas such as transitioning beginning teachers (e.g. Gilles, Wilson, & Elias, 2010; Watson, Harper, Ratliff, & Singleton, 2010; Stallions,
Murrill, & Earp, 2012), professional development (McDonald, 2012), and reasons for teachers leaving the profession (Skaalvik & Skaalvik, 2011).

Current literature in educational research consistently focused on teacher retention over the whole workforce, whereas studies on retention and motivation of the emerging demographics labeled as Generation Y still need more attention (Luscombe, Lewis, & Biggs, 2013). In today’s educational environment, Borman and Dowling (2008) concluded that various conditions which improve teacher retention rates are easily changeable, which implies administrators do have the capacity to influence the retention of teaching staff.

The proposed correlational study will determine if meaningful and statistically significant relationships exist between the nine factors (pay, promotion, supervision, fringe benefits, performance-based rewards, operating procedures, coworkers, nature of work, and communication) of the Job Satisfaction Survey (JSS) and the contract renewal of teachers (Gen Y and non-Gen Y) working at international schools in Asia.

**Problem Statement**

Retaining highly effective teachers enhances the professional and academic culture of educational institutions. In addition to transferring best practices to new staff members, veteran teachers impart confidence and reliability to parents and students (Heck & Mahoe, 2010; Looney, 2011). Some schools even choose to report the average years of experience the teaching staff possesses in order to bolster the professionalism of the institution.

International schools need to utilize additional resources, such as relocation and language training, to transition teachers into the host countries. Identifying and targeting factors that encourage contract renewal will directly translate to cost savings and lower the disruption of replacing teachers (Watlington, Shockley, Guglielmino, & Felsher, 2010).
There exist qualitative studies on teacher retention, teacher attrition, and teacher persistence (Fox & Certo, 1999; Borman & Dowling, 2008; Hudson, 2009). Researchers were even able to identify and categorize a few areas that influence Gen Y teachers to stay in the teaching profession (Behrstock, 2010). However, the problem is that quantitative studies of factors influencing the retention of Gen Y teachers are not readily available.

**Purpose Statement**

The purpose of this quantitative, correlational study is to explore motivation and hygiene factors as they relate to the contract renewal of Gen Y and non-Gen Y teachers working at international schools in Asia. Since no manipulation of variables will occur, the appropriate research design is non-experimental (Gall, Gall, & Borg, 2006). The predictor variables for this study were pay, promotion, supervision, fringe benefits, performance based rewards, operating procedures, coworkers, nature of work, and communication. The predictor variables comprised of the nine facets of the Job Satisfaction Survey (JSS) instrument devised by Spector. The criterion variable was the teacher’s decision to renew the contract with the international school at which they were currently employed.

**Significance of the Study**

The findings of this study will benefit international school administrators by directing limited resources to crucial job satisfaction factors that increase teacher retention. International schools principals can implement the results of this study to retain and empower effective Gen Y and non-Gen Y teachers. On the theoretical level, Herzberg’s Two Factor Theory provides administrators a framework for motivating workers; using Herzberg’s theory, this research pinpoints motivational and hygiene factors that contribute to retaining teachers and quantifying the possible correlation. This study will also be helpful to international schools in Asia by
informing school leadership teams of statistically significant factors that contribute to teacher satisfaction and dissatisfaction. The results can be utilized to promote an environment that will increase teacher retention rates.

Current literature on job satisfaction and dissatisfaction does not comprehensively explain the possible relationships between the many factors in Herzberg et al.’s (1959) two-factor theory and teacher retention in international schools in Asia (Odland & Ruzicka, 2009; Chandler, 2010). While research exploring different individual factors to retention and job satisfaction exists, quantitative studies do not appear in great abundance, especially in regards to literature with international schools as the target. Moreover, subsets of teachers teaching internationally and differentiated between Gen Y and non-Gen Y have not been explored in educational research.

**Research Questions**

**RQ1:** What is the ability of pay, promotion, supervision, fringe benefits, performance based rewards, operating procedures, coworkers, nature of work, and communication to predict contract renewal of *Gen Y teachers* working at international schools in Asia?

**RQ2:** What is the ability of pay, promotion, supervision, fringe benefits, performance based rewards, operating procedures, coworkers, nature of work, and communication to predict contract renewal of *non-Gen Y teachers* working at international schools in Asia?

**RQ3:** What is the ability of pay, promotion, supervision, fringe benefits, performance based rewards, operating procedures, coworkers, nature of work, and communication to predict contract renewal of *all teachers* working at international schools in Asia?
Null Hypotheses

H₀₁: The variables (pay, promotion, supervision, fringe benefits, performance based rewards, operating procedures, coworkers, nature of work, and communication) do not significantly predict the contract renewal of Gen Y teachers working at international schools in Asia.

H₀₂: The variables (pay, promotion, supervision, fringe benefits, performance based rewards, operating procedures, coworkers, nature of work, and communication) do not significantly predict the contract renewal of non-Gen Y teachers working at international schools in Asia.

H₀₃: The variables (pay, promotion, supervision, fringe benefits, performance based rewards, operating procedures, coworkers, nature of work, and communication) do not significantly predict the contract renewal of all teachers working at international schools in Asia.

Definitions

1. Pay - Pay is the monetary compensation offered to the teachers. Also included in the pay subdomain are raises and amount relative to other schools (Judge, Piccolo, Podsakoff, Shaw, & Rich, 2010).

2. Promotion - Promotion is the opportunity for advancement such as a structure to mentor teachers to allow them to become administrators and specialists (Chapman, 1984).

3. Supervision - Supervision involves administrators being competent, promoting opportunities to engage in meaningful conversations about practice, and focusing on aspects of good teaching (Danielson, 2011).

4. Fringe Benefits - Fringe benefits are defined as non-salary aspects of a job, such as medical insurance, substitutes for wages and retirement fund (Artz, 2010).
5. Performance-based and Contingent Rewards - Performance based and contingent rewards are reward types given to employees in addition to base pay. Two broad categories of reward are financial and psychological. Psychological rewards can be recognition, compliments, appreciation, and encouragement (Hofmans, De Gieter, & Pepermans, 2013).

6. Operating Procedures - Operating procedures pertain to the rules, school structure, bureaucracy, and amount of work (Spector, 1985).

7. Coworkers - Coworkers involve the collegiality and positive working relationships among teachers. Aspects of collegiality involve active collaboration and recognition (Shen et al., 2012).


9. Communication - Communication expounds on information flow within the school, goals of the institution, activities within the organization, and clear descriptions of the work assignments (Spector, 1985).

10. Contract Renewal - Closely related to teacher retention and teacher attrition, the criterion or outcome variable is the renewal of the contract with the teacher’s existing employer. In the study, the participants can only state the intention to stay or leave when the contract is up for renewal (Holland, 1973).

11. Job satisfaction - Job satisfaction is the feeling that the job environment will let the worker’s skills and abilities be maximized while the worker’s and the organization’s attitudes and values coincide (Holland, 1973).
12. *International Schools* - International schools are college preparatory schools with the main goal of sending the graduates to top universities around the world. These schools are usually accredited by regional education boards and utilize an International Baccalaureate (IB) curriculum or US based curriculum with Advanced Placement (AP) courses in high school (Mancuso et al., 2010).


16. *Teacher Attrition* - Teacher attrition is the term used for educators choosing to leave the teaching profession (Chapman & Holland, 1982).

17. *Teacher Retention* - Teacher Retention is the term used for educators choosing to stay in the teaching profession (Mancuso et al., 2010).
CHAPTER TWO: LITERATURE REVIEW

Introduction

Chapter Two of the study contains the theoretical framework section and the literature review section. The two theoretical frameworks used in the study are Herzberg’s two-factor theory (Herzberg et al., 1959) and Holland’s theory of vocational choice (Holland, 1973). The theoretical framework section starts by exploring the various motivational and hygiene factors that determine the job satisfaction of teachers within school environments. According to the two-factor theory (Herzberg et al., 1959), factors motivating workers are independent to factors creating dissatisfaction. Holland’s (1973) theory of vocational choice explains that job satisfaction and retention depends on the congruence between one’s personality and the environment in which one worked.

The literature review section of the study explores the nine factors that are the predictor variables of the study. Literature is reviewed that explains the specific factors of job satisfaction and dissatisfaction within schools and the teaching environment. The criterion variable of the study is a teacher’s intention to renew his or her contract with the same school. Thus, a review of literature on teacher retention and attrition was conducted. Lastly, since the samples used in the study are teachers from international schools, the final portion of the literature review focuses on teacher satisfaction and retention within international schools.

Theoretical Framework

Herzberg’s Two-Factor Theory

Since Herzberg introduced the Two-Factor Theory in 1959, many studies have used the theory as a framework for research concerning worker motivation within the workplace (e.g. Efraty & Sirgy, 1990; Stone-Romero, 1994). While Herzberg developed the Two-Factor Theory outside of the educational setting, numerous studies have validated the theory within the
educational context (e.g. Waltman, Bergom, Hollenshead, Miller, & August, 2012; Saglam 2007). In the two-factor theory, factors motivating workers are independent to factors creating dissatisfaction. The presence of motivating factors will increase teacher satisfaction at work, while the absence of hygiene factors will lead to a decrease in teacher satisfaction.

**Table 1**

*Herzberg’s Two-Factor Theory*

<table>
<thead>
<tr>
<th>Motivation Factors</th>
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<td>Achievement</td>
<td>Company Policies</td>
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<td>Recognition</td>
<td>Supervision</td>
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<tr>
<td>Work Itself</td>
<td>Relationships with Colleagues and Supervisors</td>
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<tr>
<td>Responsibility</td>
<td>Physical Work Conditions</td>
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<tr>
<td>Advancement</td>
<td>Salary</td>
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<tr>
<td>Growth</td>
<td>Status</td>
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<td>Job Security</td>
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Factors that motivate workers and increase satisfaction are achievement, recognition, the work itself, responsibility, advancement, and growth (Herzberg, 1968). The other aspect of Herzberg’s two-factor theory, also known as dual-factor theory, explained the cause of dissatisfaction is attributed to hygiene factors (the dual to motivating factors) not being met. The hygiene factors proposed by Herzberg are company policies, supervision, relationship with supervisors and peers, physical work conditions, salary, status and job security. In summary, motivation factors are needed to increase worker effectiveness and satisfaction, while hygiene factors are needed to decrease worker dissatisfaction and turnover.

**Holland’s Theory of Vocational Choice**

The focus of this correlational research is to explain the relationship between nine predictor variables and renewal of contracts. Holland’s (1973) theory of vocational choice provides the theoretical framework in exploring the connection between contract renewal and teacher retention. Holland (1973) presented that job satisfaction and retention depend on the
congruence between one’s personality and the environment in which one worked. Holland’s theory of vocational choice contains two major components. The first is that individuals fall under one of six personality types (realistic, investigative, artistic, social, enterprising, and conventional) determined by the individual’s abilities and values. The second is that work environments also fall under six types similar to the personality types (realistic, investigative, artistic, social, enterprising, and conventional). Holland concluded workers that chose work environments similar to their personality types are more likely to stay within that profession.

Building on Holland’s theory within the educational field, Chapman and Sigrid (1982) demonstrated that teachers leaving the educational field were characterized by a different set of factors than those remaining in teaching. Teachers leaving the education profession indicated a greater desire for job autonomy and salary increases, while those remaining in teaching assigned greater importance to recognition by supervisors and friends. Differences between teachers staying and leaving cannot be explained by gender, race, or age (Chapman & Sigrid, 1982).

**Job Satisfaction and Motivation Factors**

Teacher achievement is one factor that appears frequently in the literature on job satisfaction. Teacher satisfaction is significantly related to teachers’ professional achievements (Chapman, 1982). Self-efficacy, which is a teacher’s beliefs about his or her competence and ability to perform, significantly predicts job satisfaction (Wu & Short, 1996). More recently, job satisfaction was positively related to subject mastery goals within the achievement context. In educational literature, teacher achievement is so closely linked to student performance that studies are conducted to find specific practices that affect student achievement (e.g. Stronge, Thomas, & Grant, 2011; Munoz, Prather, & Stronge, 2011).
Another motivating factor contributing to job satisfaction is recognition (Malakolunthu, Idris, & Rengasamy, 2010). Other studies also positively correlate recognition with job satisfaction (Zembylas & Papanastasiou, 2005; Medved, 1982; Hofmans et al., 2013). While recognition differs by countries and regions, the literature shows that broad categories of teacher recognition are based on student achievement (Andrews, 2011), participation in prestigious teacher training programs (Previts, Kleine, & Mizelle, 2013), and effective teaching methods (Freudenberg & Samarkovski, 2014).

A third motivator proposed in the two-factor theory is creating work that is rewarding and that matches the skills and abilities of the worker (Herzberg, 1968). In the educational field, literature specific to the work itself is identified under self-concept and teacher attitudes. Perseverance is encouraged through development of professional identity (Timostsuk & Ugaste, 2010). Studies point out that early development of professional identity leads to positive self-image and increases levels of engagement (Sutherland et al., 2010).

Responsibility as a motivator refers to empowering teachers with responsibility that contributes positively to the school climate (Herzberg, 1968). Though there are many articles discussing the link between teacher accountability and motivation, the link between teacher responsibility and motivation is referenced far less than other job satisfaction factors (Lauermann & Karabenick, 2011). Feldmann (2011) suggested that cultivating creativity, encouraging the aspirations of teachers, and building a positive work culture within the school can foster teacher responsibilities.

The last factor in Herzberg’s Two Factor theory is growth. Educators experienced growth through reflection (Stallions, Murrill, & Earp, 2012), professional development (Gilles, Wilson, & Elias, 2010; McDonald, 2012), and mentoring (Gimbel, Bridgewater, Falmouth, &
Another aspect of growth is professional development that includes teaching innovation, increasing competency, teacher autonomy, control, challenge, variety, and workload (Wagner & French, 2010). Professional growth and development that is manifested by encouraging competence, autonomy, and ownership within a school environment significantly predicted job satisfaction (Wu & Short, 1996).

**Job Dissatisfaction and Hygiene Factors**

Herzberg (1968) postulated that the opposite of satisfaction is not dissatisfaction, but the absence of satisfaction. Alternatively, the opposite of dissatisfaction is not satisfaction, but the absence of dissatisfaction. One assumption of Herzberg’s Two-Factor Theory is that satisfaction factors are independent of dissatisfaction factors. Therefore, the presence of motivators will not negate the dissatisfaction caused by the absence of hygiene factors. Conversely, the presence of hygiene factors does not motivate workers if job satisfaction factors are absent (Herzberg, 1968). Herzberg’s proposed hygiene factors are company policies, supervision, relationship with supervisors and peers, physical work conditions, salary, status, and job security.

The first hygiene factor is company policies. Fair and unobtrusive policies do not create motivation or increase job satisfaction (Herzberg et al., 1959; Medved, 1982). Connections between burdensome policies and dissatisfaction are not evident in a review of available literature; however, teachers experiencing increased external control are less motivated (Mausethagen, 2013). Another dissatisfaction factor mentioned in Herzberg’s theory is supervision (Herzberg, 1968). Effective supervision is tied to professional development and teacher quality assurance (Danielson, 2011). Using traditional systems of teacher evaluation, such as checklists and simplistic assessments, does not motivate employees nor does it improve performance (Danielson, 2011; Mielke & Frontier, 2012). Marshall (2012) suggested using a
combination of classroom observations, student achievement gains, and feedback from students to more accurately assess teachers.

The school culture, specifically teacher-to-teacher relationships and teacher-to-administrator relationships, is another hygiene factor. In one study, the teachers’ perceptions of the school administration had a large effect on contract renewal with the same school (Boyd et al., 2011). Studies also showed that staff collegiality is positively associated with teacher job satisfaction (Simon, Judge, & Halvorsen-Ganepola, 2010; Shen et al., 2012). Thus, the lack of collegiality could cause dissatisfaction and be categorized as a hygiene factor.

As addressed by Maslow in the Hierarchy of Needs theory, not providing for the physical needs of teachers will lead to dissatisfaction (Maslow, 1943; Herzberg, 1968). Increasing attrition was linked to the quality of the living conditions and health. Macdonald (1999) concluded that teachers leave a school where the living conditions are extremely poor or when one’s physical health became an issue. Increased dissatisfaction is associated with sub-standard working conditions such as classrooms in disrepair, poor bathroom facilities, inadequate lighting, furniture in disrepair, overcrowding, and student violence (Macdonald, 1999). While many studies address higher order needs such as self-actualization, esteem, and belonging (Adler, 1991), literature on school safety and actual physiological needs are hard to find. For teachers to be most effective, Weller (1982) proposed creating a favorable school environment by applying Maslow’s theory.

A recent study showed that linking pay to student achievement does not motivate teachers (Yuan et al., 2013). Another study also confirmed that evidence does not support the theory that increasing financial incentives leads to increased teacher performance (Gratz, 2011). However, Gratz (2011) reported that policy makers still hold firm on the idea that tying pay to
performance will result in higher student achievement. Low salaries, especially in situations
where the pay is not enough to support a family, will increase job dissatisfaction (Macdonald,
1999). Additionally, contrary to popular notions, pay level is only marginally related to
satisfaction (Judge et al., 2010).

Another hygiene factor is teachers’ own perceptions of the teaching profession. The
decline in the status of teachers can partially be attributed to teachers’ views of the education
field. In many countries, teaching is considered the last option. Once other opportunities exist,
teachers will often choose to switch professions. Therefore, the low job status teachers feel can
increase attrition and job dissatisfaction (Macdonald, 1999). Another form of teacher status is
achieved when teachers see personal goals aligning with the schools’ goals and values. Along
the same line of reasoning, teachers possessing status within the schools will feel greater
attachment, resulting in greater commitment. Although teacher status was not a motivating
factor in the two-factor theory, status was a significant predictor of commitment (Wu & Short,
1996).

The final dissatisfaction factor is job security. Not exclusive to education, Carless and
Arnup (2011) reported job security as a factor in decisions for career change. In addition to
maintaining job satisfaction, job security is reportedly tied to educators having less perceived
stress (Wagner et al., 2013). Focusing on the compensation aspect, one article concluded that
public school teachers have lower unemployment rates compared to private schools and other
white-collar professions (Richwine, Biggs, Mishel, & Roy, 2012).

**Review of the Literature**

The nine facet subdomains (pay, promotion, supervision, fringe benefits, performance-
based rewards, operating procedures, coworkers, nature of work, and communication) of the Job
Satisfaction Survey (JSS) are closely tied to the motivational and hygiene factors in Herzberg’s theory. The nine facets of the JSS comprise the predictor variables of the study; therefore, literature was reviewed on job satisfaction in connection with each of the nine subdomains.

Table 2

<table>
<thead>
<tr>
<th>Facet Subdomains of the Job Satisfaction Survey (JSS)</th>
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<tbody>
<tr>
<td>Pay</td>
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<td>Promotion</td>
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<td>Supervision</td>
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<td>Fringe Benefits</td>
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<td>Contingent Rewards</td>
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<td>Operating Conditions</td>
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<td>Coworkers</td>
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<td>Nature of Work</td>
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<td>Communication</td>
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</table>

Participants of the study were split into two categories: Gen Y teachers and non-Gen Y teachers. Literature was reviewed on the characteristics and job satisfaction factors affecting Gen Y and non-Gen Y teachers. The demographic that was the focus of the current study is teachers working at international schools in Asia. Thus, literature was also reviewed on job satisfaction within the international school context. Both qualitative and quantitative studies relating to the international school context were examined. Lastly, since the criterion variable of the study is a teacher’s intention to renew the contract during renewal time, literature was reviewed on teacher retention using Holland’s Theory of Vocational Choices as the theoretical framework.
Table 3

*Literature Reviewed for JSS Subdomains*

<table>
<thead>
<tr>
<th>Topic</th>
<th>Study</th>
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<tbody>
<tr>
<td>Job Satisfaction and Pay</td>
<td>Gratz, 2011</td>
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<tr>
<td></td>
<td>Yuan, Vi-Nhuan, McCaffrey, Marsh, Hamilton, Stecher, &amp; Springer, 2013</td>
</tr>
<tr>
<td></td>
<td>Judge, Piccolo, Podsakoff, Shaw, &amp; Rich, 2010</td>
</tr>
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<td></td>
<td>Hancock &amp; Scherff, 2010</td>
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<td></td>
<td>Hendricks, 2012</td>
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<td>Butler, 2014</td>
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<td>Goldhaber et al., 2011</td>
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<td>Leigh, 2012</td>
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<td>Amrein-Beardsley, 2012</td>
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<td>Woessmann, 2011</td>
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<td>Armer, 2011</td>
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<td>Chambers, 2010</td>
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<tr>
<td>Job Satisfaction and Promotion</td>
<td>Nolan &amp; Palazzolo, 2011</td>
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<td></td>
<td>Wagner &amp; French, 2010</td>
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<td></td>
<td>Rice, 2014</td>
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<td>Chingos &amp; West, 2011</td>
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<td></td>
<td>Armer, 2011</td>
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<td>Chambers, 2010</td>
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<tr>
<td>Job Satisfaction and Supervision</td>
<td>Danielson, 2011</td>
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<td></td>
<td>Wagner &amp; French, 2010</td>
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<td></td>
<td>Rice, 2014</td>
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<td></td>
<td>Mielke &amp; Frontier, 2012</td>
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<td>Lasseter, 2013</td>
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<td></td>
<td>Chambers, 2010</td>
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<td></td>
<td>Armer, 2011</td>
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<td></td>
<td>Butler, 2014</td>
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<tr>
<td>Job Satisfaction and Fringe Benefits</td>
<td>Artz, 2010</td>
</tr>
<tr>
<td></td>
<td>Richwine, Biggs, Mishel, &amp; Roy, 2012</td>
</tr>
<tr>
<td></td>
<td>Dale-Olsen, 2006</td>
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<tr>
<td></td>
<td>Armer, 2011</td>
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<td></td>
<td>Pearson &amp; Moomaw, 2006</td>
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<tr>
<td>Job Satisfaction and Performance-based Rewards</td>
<td>Hofman, De Gieter &amp; Pepermans, 2013</td>
</tr>
<tr>
<td></td>
<td>Herzberg, 1959</td>
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<tr>
<td></td>
<td>De Gieter, De Cooman, Pepermans, &amp; Jegers, 2010</td>
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<tr>
<td></td>
<td>Wagner &amp; French, 2010</td>
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<td></td>
<td>Armer, 2011</td>
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<tr>
<td>Job Satisfaction and Operating Procedures</td>
<td>Spector, 1985</td>
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<td></td>
<td>Armer, 2011</td>
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<td></td>
<td>Butler, 2014</td>
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Pay, also known as salary, is the compensation package offered to the teachers. While pay is often viewed as a motivational factor, in practice, pay is a hygiene factor. Currently, the trend is for schools to offer performance pay in an effort to increase student achievement. However, evidence does not support the logic that incentive pay leads to better student and teacher performance (Gratz, 2011) nor does it increase teacher motivation (Yuan et al., 2013). One meta-analysis concluded that pay level is not strongly related to satisfaction (Judge et al., 2010).

In a study focused on secondary English teachers, base salary level and perceived salary satisfaction did not contribute to teacher attrition risk (Hancock & Scherff, 2010). In Armer’s (2011) quantitative study that focused on middle and high school science teachers, a statistically
significant relationship between pay and job satisfaction was reported, but only a moderate one. Another quantitative study focusing on elementary teachers within a large urban school district reported no statistically significant relationship between academic achievement of the school and the teachers’ satisfaction with pay (Chambers, 2010). Chambers (2010) also concluded there was no statistical significance between the social economic status (SES) of a school’s students and the views of teachers concerning salary.

While not explicitly related to satisfaction, increasing base teacher pay has been shown to reduce teacher attrition (Hendricks, 2012). An increase in base pay affects less experienced teachers more than veterans; the effect decreases and then disappears after 19 years of teaching. Districts saw an overall improvement in student performance because of the increase of the average teacher experience due to reduced teacher attrition from larger base pay (Hendricks, 2012). In examining the relationship between teacher attrition and financial stability, Butler (2014) reported a strong positive relationship. Higher pay may not increase job satisfaction as a motivation factor, but as a hygiene factor, not having enough pay will decrease teacher satisfaction.

An interesting aspect of pay as a motivation factor was examined during the recruiting phase of teachers, rather than the employment phase. Better salary compensation offered at hiring correlates to higher retention rates of effective teachers with higher academic achievements. In the study, teachers with higher academic achievements are defined as obtaining above average standardized test scores (Goldhaber et. al., 2011). In an Australian study, Leigh (2012) showed that increasing the starting salary of beginning teachers also attracts teachers with higher academic aptitude. For every one percent rise in the salary of starting teachers, there was a corresponding rise of 0.6 percentile of the average aptitude of students.
entering teaching education courses (Leigh, 2012). Armer (2011) suggested high salaries can attract highly qualified candidates to enter the educational field who may not otherwise have considered teaching as an occupation. Additionally, salary and bonuses can also play a part in recruiting expert teachers in high-needs schools with low socioeconomic status (Amrein-Beardsley, 2012). In the international context and contrary to many United States studies, correlation was seen between performance-based teacher pay and student achievement across countries participating in the 2003 Program for International Student Assessment (PISA) exam (Woessmann, 2011).

**Job Satisfaction and Promotion**

Promotion is the opportunity for advancement such as a structure to mentor teachers to allow them to become administrators and specialists. New teachers, with eyes set on a future administrative role, may view future promotion as contingent on participation in teacher leadership activities. While not explicitly a promotion, novice teachers viewed participation in curriculum evaluations and classroom instruction innovations as a starting point toward leadership (Nolan & Palazzolo, 2011).

In a correlational study limited to elementary teachers within a large urban school district in North Carolina, Chambers (2010) reported no statistically significant relationship existed between academic achievement of the school and the teachers’ satisfaction with their opportunities for promotion. The same study also reported that the social economic status of a school’s students did not influence the views of teachers about their opportunities for promotion (Chambers, 2010). Supporting Chamber’s (2010) conclusion, Armer (2011) reported no statistically significant relationship was found between job satisfaction and promotion.
The field of education is becoming increasingly competitive, due to budget constraints and fewer leadership spots. Novice and veteran educators are competing for the same desirable positions. Due to a limited supply of leadership opportunities, teachers are identifying positions with meaningful participation toward curriculum development and methodology as precursors to future career advancement (Nolan & Palazzolo, 2011).

Promotional opportunities, particularly policy on advancement that is fair and equitable, impacts job satisfaction and teacher motivation (Wagner & French, 2010). In examining teacher retention, Rice (2014) found that more effective educators voiced the opinion that major factors in staying include promotion opportunities and improved professional learning options. In contrast, less effective teachers placed higher importance on the option to select students enrolling in the class (Rice, 2014). Retaining more effective educators is crucial to school performance and leadership development. Veteran teachers that are effective are more likely to be promoted to leadership positions (i.e. vice principals, principals). Conversely, less effective teachers are more likely to be assigned positions without the opportunity to participate in policy and school structural improvements (Chingos & West, 2011).

**Job Satisfaction and Supervision**

Supervision involves administrators being competent, promoting opportunities to engage in meaningful conversations about practice, and focusing on aspects of good teaching (Danielson, 2011). Effective teacher supervision motivates classroom teachers with formative evaluations that are frequent and useful (Wagner & French, 2010). Danielson (2011) explained that ineffective teacher supervision and evaluation uses traditional systems that are outdated and deficient, such as evaluative criteria in the form of checklists, simplistic evaluative comments with no guidance as to where teachers can focus improvement efforts, no differentiation between
novice and veteran teachers, lack of consistency among evaluators, and no input from teachers being observed in the process.

Effective, veteran teachers stated poor support from the principal as a major factor for not renewing their contracts (Rice, 2014). On the positive side, supervisor support predicted intrinsic interest in professional development (Wagner & French, 2010). Encouragement and empowerment from superiors are powerful tools in motivating staff members. However, incompetent leadership coupled with negative administrative decisions will deflate morale just as easily (Mielke & Frontier, 2012). Out of the many factors studied, support from supervisors is one of the factors that best predicted job satisfaction (Lasseter, 2013).

Effective supervision builds a community where innovation is encouraged, emotional support is given, and useful feedback is offered. Factors within the supervision category that lead to decreased teacher motivation include supervisors who are perceived as unaware of the current classroom conditions, and supervisors who fail to provide useful feedback that leads to improvement in teaching strategies, as well as conversations targeted toward professional goals. Collegial relationships between administrators and educators coupled with competence in teacher supervision methods are positively correlated with teacher motivation (Wagner & French, 2010).

While standard teacher supervision may connote an employer-employee relationship based on meeting job requirements, research based methods of teacher supervision point to a different type of relationship. Instead of working with checklists, the most effective teacher supervisors empower teachers to self-diagnose areas for growth and self-assess classroom practices for efficacy. Empowerment is one of the keys to improving teacher performance. Constructive and useful feedback that is not tied to job security, salary, or tenure
encourages educators to experiment with teaching strategies that can lead to increased teacher effectiveness (Mielke & Frontier, 2012).

Chambers (2010) reported no statistically significant relationship between academic achievement of the school and the teachers’ satisfaction with supervisors. Chambers (2010) also concluded that the SES of school’s students did not influence teachers’ views about supervisors. However, if supervision and work satisfaction are examined together, Armer (2011) reported a statistically significant relationship between supervision and job satisfaction. When the relationship between administrative support and teacher attrition was examined, Butler (2014) reported a statistically significant correlation. Butler (2014) explained that due to the lack of support from administration, teachers were likely to leave the educational field within the next five years.

**Job Satisfaction and Fringe Benefits**

Fringe benefits can influence job satisfaction by being a component of a compensation package such as Social Security, Medicare, paid leave, insurance, retirement, and savings plans. Job satisfaction can increase if the costs of the compensations are cheaper through the employer versus the worker having to acquire the instruments on the open market. Another consideration is that fringe benefits can be a substitute for wages. Employees are willing to give up wages in exchange for comparable benefits, due to tax incentives. Lastly, fringe benefits can have a negative effect if workers have to give up part of their wages for benefits that are not wanted (Artz, 2010).

In the education field, fringe benefits include paid leave, insurance plans, retirement and savings, retiree health care, and legally required benefits (Richwine, Biggs, Mishel, & Roy, 2012). Quantitatively, Richwine et al. (2012) stated fringe benefits totaling 41.2 percent of the
annual salaries are received by public school teachers. Extra paid leaves converted as a percentage of salary comes out to 29 percent. Not common in the private sectors, health benefits after retirement are worth 10 percent of the current teacher salary. Total fringe benefits, after calculating for other benefits not stated, can be approximately 101 percent of a teacher’s annual salary (Richwine et al., 2012).

Fringe benefits, as a hygiene factor, are closely related to pay. Whereas excess benefits will not boost job satisfaction in the long run, not having benefits comparable to those of other schools may cause the teacher to leave due to better non-salary compensations elsewhere (Dale-Olsen, 2006). Pearson and Moomaw (2006) also reported that the absence of fringe benefits would increase job dissatisfaction. Fringe benefits such as health insurance, dental insurance, and sick leave exhibited a low positive relationship with science teachers within the study. In a more recent quantitative study confirming Pearson and Moomaw’s (2006) result, Armer (2011) reported a statistically significant relationship between fringe benefits and job satisfaction; however, the relationship is positive and low.

Job Satisfaction and Performance-based Rewards

Performance based rewards and contingent rewards are given to employees in addition to base pay. Two broad categories of rewards are financial and psychological. Based on individual work values, Hofman et al. (2013) showed that, contrary to the Two-Factor Theory (Herzberg et al., 1959) financial reward satisfaction is positively related to job satisfaction. However, this relationship holds only for a subgroup of the study. Hofman et al. (2013) demonstrated that some employees’ job satisfaction is tied to both financial and psychological rewards whereas another group of employees’ job satisfaction is only tied to psychological rewards. In regard to
the increase in job satisfaction due to the presence of psychological rewards, the results agree with Herzberg’s Two-Factor Theory (Hofman et al., 2013).

Psychological rewards (i.e., recognition, compliments, appreciation, and encouragements), supporting the Two-Factor Theory, related positively to job satisfaction for workers of all fields. Specifically, teachers who value recognition and public praise support the correlation between psychological rewards and work satisfaction (Hofmans et al., 2013). Another interesting item from the literature review shows that psychological rewards are so crucial to job satisfaction that in certain situations the reward is more important than salary (De Gieter et al., 2010).

Armer (2011) reported a statistically significant relationship between job satisfaction and performance-based rewards. Closely related to performance-based rewards, merit-based pay raises negatively affect motivation by reducing the sense of autonomy that educators desire and shifts the focus to more outward causes that may not be in the teachers’ control (Wagner & French, 2010).

**Job Satisfaction and Operating Procedures**

Operating procedures pertain to rules, school structure, bureaucracy, and amount of work (Spector, 1985). In a study limited to middle and high school science teachers, a statistically significant relationship between job satisfaction and operating conditions existed (Armer, 2011). In a recent study examining attrition factors, Butler (2014) reported a strong relationship between working conditions and teacher attrition. Other literature increasingly showed that positive and encouraging collegial relations between teachers and supervisors led to increased teacher effectiveness and motivation. However, emphasizing accountability policies negatively influenced teacher satisfaction (Mausethagen, 2013). Specifically, Mausethagen’s (2013) study
concluded that teachers feel relations are negatively affected due to school policies tilting toward additional high stakes testing. In Willis and Sandholtz’s (2009) study, the researchers demonstrated that if a school instills a structure that requires accountability based on student test scores, classroom teachers are forced to make instructional decisions that affect contents in all areas, not just those connected to the testing standards. The key result is that even though teachers are given autonomy within the classroom, the school structural requirements and time constraints minimizes the teachers’ professionalism and judgment (Willis & Sandholtz, 2009).

Counter-intuitively, the additional accountability coupled with a collaborative culture strengthens teacher relationships. Often, teachers view the increase in collaboration time offsets the negativity caused by the accountability requirements. However, concerns were raised about the type of collaboration fostered under high accountability. The key concepts from multiple studies pointed to positive school structures and procedures such as supportive administrators, reflection on pedagogy, and learning as the reasons for improving teacher-to-teacher relations. The strengthening of teacher relations is not simply based on higher accountability, but due to more complex circumstances (Mauethagen, 2013).

Another aspect of operating procedures is the decision making structure of the school. Ho (2010) argued that school structures where the goal of leadership is to control teachers do not increase teacher satisfaction as compared to those where teachers openly participate in school curriculum and managerial policy decisions. Ultimately, a collegial culture where teachers become important stakeholders with active participation requires leadership to seek consensus and collaboration (Ho, 2010).
Job Satisfaction and Coworkers

Coworkers involve the collegiality and positive working relationships among teachers (Shen et al., 2012). Aspects of collegiality include active collaboration and recognition. Ideally, collegiality promotes satisfaction, professional involvement, and persistence in teaching. Positive working relationships with coworkers are more important to elementary teachers than to high school teachers (Shen et al., 2012). Job satisfaction increased in schools that encouraged teachers to contribute in decisions concerning teacher issues, which in turn led to better perceptions of leadership and higher collegiality, also increasing job satisfaction (Sarafidou & Chatziioannidis, 2013).

Younger teachers consider collegiality more important than veteran teachers (Shen et al., 2012). Beginning teachers’ views of coworkers and overall perception of the school’s professional culture will influence a novice teacher’s decision to remain in the profession. Aspects of the collegial culture included mentoring by veteran teachers, coworker relations, and coworkers’ drive to accomplish school wide goals (Pogodzinski, Youngs, & Frank, 2013). Out of many factors studied, staff collegiality is one of the factors that best predicts job satisfaction (Lasseter, 2013).

While collaboration groups and professional learning communities are formed and utilized in many school campuses for professional development, most teams are not truly successful (Troen & Boles, 2010). While the curriculum contents and student learning usually take center stage in collaborative groups, the key to team success lies in the positive and professional relationships between coworkers. Another factor contributing to a successful team is colleagues within the collaboration group developing and executing procedures where
members are accountable to each other as the group works toward reaching the team goals (Troen & Boles, 2010).

In addition to the quality of coworker relationships, interdependence and mutual respect also influence the coworker subdomain of the JSS. Good coworker relationships are a significant predictor of intrinsic interest in professional development. Positive, collegial relationships with coworkers address teachers’ need to be a part of a community (Wagner & French, 2010). Sarafidou and Chatziioannidis (2013) concluded that an important predictor of teacher attrition and satisfaction is the quality of relationships educators developed with coworkers.

In a study of secondary school teachers in Belgium, Van Maele and Van Houtte (2012) established quantitatively that trust in parents, students, coworkers, and principals correlated positively with job satisfaction. In a study with secondary science teachers as participants, a moderate positive relationship existed between job satisfaction and coworkers (Armer, 2011). Chambers (2010) reported no statistically significant relationship between academic achievement of the school and the teachers’ satisfaction with coworkers. Chambers (2010) also concluded that the SES of a school’s students did not influence the views of teachers about coworkers. Out of the four groups (parents, students, coworkers, and principals), job satisfaction is related most strongly with coworkers (Van Maele & Van Houtte, 2012). Van Maele and Van Houtte (2012) theorized the stronger relationship could be explained by the fact that the school’s teachers and administrators are less volatile than parents and students.

**Job Satisfaction and Nature of Work**

Nature of work discusses a worker’s sense of purpose, enjoyment, and pride in the job (Spector, 1985). Nature of work itself describes the degree to which an educator’s job is
interesting and the teacher’s need for recognition. Other components of the nature of work itself include teaching innovation, increasing competency, teacher autonomy, control, challenge, variety and workload (Wagner & French, 2010). Wagner and French (2010) wrote that the nature of work involves the satisfaction a teacher gets from the authority and autonomy one has in decision making in regards to instructional practices and curriculum implementation. Out of many factors studied, autonomy within the classroom is one of the factors that best predicts job satisfaction (Lasseter, 2013). With a contradictory result, Armer (2011) reported that job satisfaction and the nature of work do not have a statistically significant relationship. However, the subjects of the study are limited to only middle and high school science teachers.

Page and Kemp (2013) discussed that students in teacher training programs possess the idea that the purpose of education is to promote the uniqueness and the well-being of all students. Unfortunately, through the maturation process from novice to veteran educators, the optimism teachers possess about the nature of work diminishes. Similarly, the idealism that morality and responsibility can be developed through character education also fades when teachers gain experience (Page & Kemp, 2013). Exploring teacher preparation and readiness versus teacher attrition, Butler (2014) reported a weak positive correlation.

The nature of work also includes the freedom an educator needs to try new teaching strategies and to seek improvements professionally which is indicative of an environment that supports autonomy. Supported by quantitative data and qualitative results, higher intrinsic motivation correlated with higher levels of satisfaction within one’s nature of work. Conversely, a teacher’s judgment of his or her own competence may decrease if there is no clear structure and description to the assigned job responsibilities. The decrease in one’s perceived competence will negatively affect motivation (Wagner & French, 2010).
Job Satisfaction and Communication

Communication is also a hygiene factor that can demoralize staff members if not implemented openly and clearly. Communication concerns information flow within the school, promotion of institutional goals, information about activities within the organization, and clear descriptions of the work assignments (Spector, 1985). Particularly when a school is implementing new strategies for improvement, communications with teachers have to be frequent and useful (Cosner, 2011).

In De Nobile and McCormick’s (2008) study, strong correlations existed between job satisfaction and communications from administrators that are democratic, supportive and open. Democratic communication pertains to administration working with teachers on policies and procedures that impact the school climate. Confirming the correlation between job satisfaction and communication, Armer (2011) reported a moderate relationship between the two variables. Supportive communication from supervisors and coworkers are both positively correlated with job satisfaction. Lastly, open communication between administrators and teachers increases job satisfaction for both groups (De Nobile & McCormick, 2008).

Satisfaction with supervisors’ communication skills led to higher growth in satisfaction and retention. Methods of communication that encourage and empower teachers are personal touch, encouraging words, empathy, active listening, clear communication, and constant motivation (Rajesh & Suganthi, 2013). Negative aspects of communication from supervisors which do not motivate are bad temper, emotional outbursts, lack of empathy, negative criticism, no acknowledgement, not encouraging autonomy, lack of encouragement, and being unsympathetic (Rajesh & Suganthi, 2013).
**Teacher Retention and Attrition**

Holland’s (1973) theory of vocational choice provides the theoretical framework in exploring the connection between contract renewal and teacher retention. Holland (1973) posited that job retention and satisfaction depend on matching the worker’s personality and the environment in which one worked. Holland’s theory of vocational choice stated that individuals fall under one of six personality types (realistic, investigative, artistic, social, enterprising, and conventional) determined by the individuals’ abilities and values. Holland’s theory also stated that work environments also fall under six types similar to the personality types (realistic, investigative, artistic, social, enterprising, and conventional). Holland concluded workers that are employed in environments similar to their personality types are more likely to be satisfied and stay within that profession.

Applying Holland’s theory to the educational field, Chapman and Sigrid (1982) characterized the differences between educators that remained versus ones that leave the teaching profession. Teachers leaving the education profession indicated a greater emphasis on job autonomy and salary increases, while those remaining in teaching assigned greater importance to recognition by other supervisors and friends. From a more recent study, Butler’s (2014) findings agreed in part by indicating that there is a strong correlation between teacher attrition and support from supervisors. Gender, race, or age cannot explain the differences between teachers that remain in the educational field and those that leave (Chapman & Sigrid, 1982).

Along the line of teacher attrition in relation to teacher effectiveness, the influence of school and labor market conditions can contribute to teachers switching schools or departing from the education profession entirely. Quantitative data from the Goldhaber et al. (2011) study reported that ineffective teachers are likely to leave the school system or transfer to another
school within the same school district. The study implied that the teacher’s effectiveness would be a factor on the teacher’s decision to renew his or her contract. Another finding of Goldhaber et al. (2011) was that teachers who have higher standardized test scores are more likely to leave the education profession. However, the more academically talented teachers are not more likely to transfer from one school to another.

The last conclusion from Goldhaber et al.’s (2011) study was that teachers are more likely to leave schools with a student body that is disadvantaged and low performing. In a supporting study, Butler (2014) reported strong correlation between working conditions and teacher attrition. Contradicting the result that teachers are more likely to leave schools with lower SES, Hughes (2012) quantitatively showed that teachers in the lowest SES schools were more likely to stay at the particular schools until retirement versus the teachers working in high SES schools.

In a sample of K-12 teachers within a large public school district in Georgia, a strong correlation was found between teacher attrition and support from administration (Butler, 2014). Wood (2014) also identified lack of support from administrators as a factor for teachers leaving the teaching profession. Very little support from coworkers, opportunities in a different profession, and student discipline issues were also cited as factors for leaving the educational field (Wood, 2014). Other factors with less significant correlations were burdensome assessment requirements that change year-to-year and heavy workloads (Wood, 2014).

In Holland’s (1973) theory of vocational choice, job retention and satisfaction depended on matching a worker’s personality and the environment in which one worked. From this point, literature will be reviewed that focuses on factors increasing teacher retention. Reviewing school
climate factors that correlate to retention will help in understanding the reasons for teachers to stay in the educational field.

In a qualitative study limited to four high schools in a small school district, factors related to retention in decreasing order of importance are colleague support, professional development, hiring policies, principal support, autonomy, work assignments, school culture, personal fulfillment, communication, respect, and teacher induction program (Pesavento-Conway, 2010). In a similar qualitative study of high school teachers with five or more years of teaching experience, two factors that high school teachers gave for staying in the educational field are intrinsic rewards and the enjoyment of working with students (Poole, 2009). Other motivating factors identified were job stability, administrative support, the work itself, and school climate (Poole, 2009). Also using veteran high school teachers, Joiner (2009) reported common factors that encouraged teachers to stay were positive attitude toward the educational field, support, love of the subject and students, educational value, and professional development.

**Gen Y and non-Gen Y Teachers**

Pertaining to Gen Y teachers, Coley (2009) reported that Gen Y educators’ wants and needs are very different from those of non-Gen Y teachers. Other factors that encourage retention are schools having frameworks and systems in place to improve teaching, realizing the tangible benefits of being educators, and contributing to school improvements beyond the assigned subject or grade (Lovely, 2012). Gen Y teachers responded that support is the most important factor in staying as a teacher.

Another important factor correlated to retention is the work culture, specifically a culture that is supportive and open for novice teachers (Pospichal, 2011). Confirming the idea, Coley (2009) stated that engaging Gen Y teachers require principals to adapt to each individual
teacher’s needs and provide collaboration opportunities. While mentoring was positively correlated to retention for all teachers, Gen Y teachers responded more than the Baby Boomers and Generation X educators. Gen Y teacher retention rates also are more affected by salary compared to non-Gen Y teachers (Pospichal, 2011).

Among non-Gen Y teachers, salary and benefits influenced more heavily among Baby Boomers for job retention. Support from administrators in technology and professional development also influenced both Baby Boomer and Generation X (Gen X) teachers’ decisions to stay in the teaching profession. Medical benefit packages including dental and vision influenced more heavily for Gen X teachers. Other factors that also increase retention rates were assisting in the developing of the teacher identity during pre-service, collaborative groups based on teachers’ needs, and support from administrators (Greenebaum, 2009). At the organizational level, improvements in salaries, teacher workloads, and parent and student participation and cooperation levels increase teacher retention rates (Hughes, 2012).
### Table 4

**Literature Reviewed for Job Satisfaction at International Schools**

<table>
<thead>
<tr>
<th>Location</th>
<th>Type</th>
<th>Study</th>
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<tbody>
<tr>
<td>Canadian International School (CIS) member schools</td>
<td>Quantitative and Qualitative</td>
<td>Odland &amp; Ruzicka, 2009</td>
</tr>
<tr>
<td>Africa, Middle East, Southeast Asia, Spain/Portugal</td>
<td>Quantitative</td>
<td>Chandler, 2010</td>
</tr>
<tr>
<td>United Arab Emirates</td>
<td>Qualitative</td>
<td>Dajani, 2014</td>
</tr>
<tr>
<td>Australia, Denmark, Norway, Sweden, Great Britain, United States</td>
<td>Qualitative</td>
<td>Moos &amp; Johansson, 2009</td>
</tr>
<tr>
<td>Southeast Asia</td>
<td>Quantitative</td>
<td>Mancuso, Roberts, &amp; White, 2010</td>
</tr>
<tr>
<td>Southeast Asia</td>
<td>Qualitative</td>
<td>Mancuso, Roberts, Weston, White, &amp; Yoshida, 2011</td>
</tr>
<tr>
<td>Latin America</td>
<td>Quantitative</td>
<td>Sims, 2011</td>
</tr>
<tr>
<td>Sub-Saharan Africa</td>
<td>Qualitative</td>
<td>Anderson, 2010</td>
</tr>
</tbody>
</table>

In published literature, studies exist to address teacher satisfaction and retention in different countries. However, articles that address factors affecting teacher turnover at international schools do not appear in large quantity (Odland & Ruzicka, 2009; Chandler, 2010). While employee turnover is inevitable with any organization (Ingersoll, 2001), losing high quality teachers will affect not only the school fiscally, but can also negatively affect student performance (Watlington et al., 2010).

In the international school context, Odland and Ruzicka (2009) found supportive administrators, communication between management and educators and including teachers in important school decisions were all connected to teacher retention. The results supported Ingersoll’s (2001) finding on teacher attrition. Dajani (2014) also reported leadership that demonstrated support for staff members, school possessing a positive culture, and including
teachers in school-wide decisions promoted teacher retention. Other factors influencing contract renewal decisions within international schools are compensation packages and personal factors (Odland & Ruzicka, 2009).

Literature and data on the reasons teachers move abroad to work at international schools are limited (Anderson, 2010). Pertaining to job recruitment and retention at international schools, Chander (2010) found no apparent link between location satisfaction and retention. Although Chander (2010) demonstrated that location is an important factor in teachers’ decisions to apply to international schools, the decision to stay is not related to location. Furthermore, Chander (2010) theorized job satisfaction plays a greater role in teacher retention than does location for international schools.

Anderson (2010) concluded international schools would maximize time and monetary resources if attention was paid to retention. With better retention rates, fewer resources would be needed for recruitment and training. Also reported in the qualitative study, Anderson (2010) concluded veteran teachers are more willing to stay if heads of schools exhibit actions that promote teacher retention (i.e. involving teachers in decisions, supporting the staff members). Not unexpectedly, since the culture of international teachers involves multiple transitions and adventure seeking, a fair amount of turnover is part of the norm (Anderson, 2010).

From another qualitative study, Odland and Ruzicka (2009) identified five factors that influenced teacher retention specific to international schools. The factors are issues stemming from private ownership, misrepresentation during recruitment, conflict with school leadership, dissatisfaction with coworkers and contractual issues. Issues from private ownership include prioritizing profit over educational goals, dictatorial owners, and manipulation and lies from owners. Specific problems in the category of misrepresentation during recruitment are mismatch
of teaching assignment as promised on the contract, not meeting the agreed upon salary and working benefits, and the school not being a true international school (Odland & Ruzicka, 2009).

Odland and Ruzicka (2009) described school leadership conflicts in their study to be personal, harmful, or even creating a hostile environment where staying is not a viable option for the teachers. Another qualitative aspect identified in the study that is related to job retention decisions is dissatisfaction with colleagues. Dissatisfaction with coworkers came in the form of unprofessional behaviors, low quality teaching from colleagues, and negativity from veteran staff members. The last item Odland and Ruzicka (2009) reported was contractual issues, which included wanting more home leave, different pay for locally hired expats versus someone hired overseas, and signing contracts without knowing the salary and benefits.

Focusing on job satisfaction and school leadership, another qualitative study with international school teachers as participants reported that principals who treated staff members professionally, sought input from teachers when making decisions, trusted staff members, provided subjective evaluations and appropriate professional development resources, and created and maintained a positive work environment promoted teacher retention (Dajani, 2014). Cited in Dajani’s (2014) study, Moos and Johansson (2009) reported the results of studying successful principals from six different countries (Australia, Denmark, Norway, Sweden, Great Britain, and the United States). In Moos and Johansson’s (2009) qualitative study, factors consistent with successful principals were open communication with staff members, building trust, and teachers having input on major school decisions.

In another qualitative study (Mancuso, Roberts, Weston, White, & Yoshida, 2011), teacher participants listed organizational conditions as the most important reason for staying. The category of organizational conditions included factors such as salary, supportive leadership,
teaching assignments, professional culture, job benefits, and workplace conditions (Mancuso et al., 2011). In the same study, teacher participants also listed organizational conditions as the most important determining cause for leaving. The factors that fall under the category are unsupportive leadership, low levels of distributed leadership, teacher assignment, professional development opportunities, and classroom autonomy (Mancuso et al., 2011).

Within the context of an international school, Dajani (2014) reported three themes that increased job satisfaction were supportive leadership; factors within the school environment such as collegiality, school culture, and physical working conditions; and salary. In cases where teachers decide to leave, Dajani (2014) similarly concluded that supportive and inclusive leadership, school environmental factors, and salary also affected teacher turnover.

Quantitatively, when looking at the characteristics of teachers, significant predictors of contract renewal were years of teaching experience, educators with a spouse as a teacher (teaching couples were less likely to renew contracts) and age (Mancuso, Roberts, & White, 2010). While school characteristics such as for-profit versus non-profit status and school population size were explored, Mancuso et al. (2010) concluded that neither were significant predictors of teacher retention.

Sims’ (2011) quantitative study explored cultural intelligence as a predictor of contract renewal and job satisfaction for international school teachers in Latin America. Sims (2011) defined cultural intelligence as a person’s capability to adapt to new cultures. Using regression analysis, the study reported a statistically significant correlation to job satisfaction. While the correlation between cultural intelligence and the teachers’ intent to stay was statistically significant, the model is not a good predictor of teacher retention (Sims, 2011).
In examining school conditions, significant predictors were satisfaction with teachers’ salaries, the teachers’ view of the head administrator’s leadership style, and the perception that the school head seeks genuine input from stakeholders on important school decisions (Mancuso et al., 2010). Expanding on leadership styles from school heads versus divisional principals, school head leadership style was more important for predicting contract renewal. Mancuso et al. (2010) reasoned that teachers view heads of international schools as the ultimate source of school leadership. Even though divisional principals have contact with teachers day-to-day, teachers do not confer the same level of leadership on principals as on school heads. Specifically, school head leadership styles that promoted teacher retention are transformational leadership and distributed leadership (Mancuso et al., 2010).

Along the same line of reasoning, a similar factor that increased job satisfaction and teacher retention is teachers being allowed to be a part of the decision making process in a school, especially formulating policies and procedures that impact all staff members. As with leadership styles, statistical significance was found only with the heads of school, not with divisional principals. A reason given was that the head of school controls the school’s finance and budgets; therefore, teachers view heads of school as being responsible for important decisions relating to resources, benefits, salaries, and professional development (Mancuso et al., 2010).

**Summary**

Using Herzberg’s two-factor theory (Herzberg et al., 1959) and Holland’s theory of vocational choice (Holland, 1973) as the theoretical frameworks, the literature reviewed pointed to many individual factors that correlate with and affect job satisfaction, job dissatisfaction, retention and attrition within the school environments. Herzberg et al.’s (1959) two-factor
theory placed job satisfaction and job dissatisfaction into distinct, independent categories. The motivation and hygiene factors discussed in Herzberg’s two-factor theory extended into the nine factor subdomains (pay, promotion, supervision, fringe benefits, performance-based rewards, operating procedures, coworkers, nature of work, and communication) of the Job Satisfaction Survey (JSS). The factors in the context of job satisfaction and dissatisfaction in the educational setting were explored through the literature review.

Holland’s (1973) theory of vocational choice explained that worker retention and attrition depended on matching one’s personality and the environment in which one worked. Studies existed that focus on different generations of teachers (Baby Boomers, Gen X, and Gen Y). Factors that caused different generations of educators to leave or stay in the teaching profession were compared. Separately, the literature review showed that specific generations are influenced more greatly by some factors than others on teacher retention and attrition. While the decisions of teachers to stay or leave (either within the profession or at a specific school) will always be complex and multi-faceted, the literature reviewed suggested correlations between job satisfaction and retention.

The samples used in the study were teachers from international schools in Asia. Not exclusive to international schools located in Asia, literature was reviewed to point out unique factors that influenced teacher satisfaction and retention in international schools in general. Similarities exist for teachers working in international schools and teachers from other parts of the world; however, factors unique to international schools are also present. Through the theoretical frameworks of Herzberg et al.’s (1959) two-factor theory and Holland’s (1973) theory of vocational choice, factors that contribute to job satisfaction and retention within the
international school context can be used to explore a teacher’s intentions to renew his or her contract.

In the literature review, studies were presented that explored individual factors and combinations of factors in relation to job satisfaction and retention. Studies were also presented explaining the same relationships within the international schools context and across different generations (Baby Boomers, Gen X, and Gen Y). However, there exists a gap in literature that quantitatively explores the relationship between the motivation and hygiene factors on contract renewal of teachers (both Gen Y and non-Gen Y) working at international schools in Asia. Therefore, the purpose of this study is to explore the relationship between job satisfaction and dissatisfaction factors that may encourage Gen Y and non-Gen Y teachers to renew their contracts when working at international schools in Asia.
CHAPTER THREE: METHODOLOGY

Design

This study was a non-experimental, correlational design. According to Gall et al. (2006) the goal of correlational research is to examine the relationships between variables by using correlational statistics. The predictor variables were the nine facets (pay, promotion, supervision, fringe benefits, performance-based rewards, operating procedures, coworkers, nature of work, and communication) of the Job Satisfaction Survey (JSS), the instrument used in the research. The criterion variable was the teachers’ decision to renew the contracts. No manipulation of the variables took place and the goal of the study was to answer the following research questions.

Research Questions

RQ1: What is the ability of pay, promotion, supervision, fringe benefits, performance based rewards, operating procedures, coworkers, nature of work, and communication to predict contract renewal of Gen Y teachers working at international schools in Asia?

RQ2: What is the ability of pay, promotion, supervision, fringe benefits, performance based rewards, operating procedures, coworkers, nature of work, and communication to predict contract renewal of non-Gen Y teachers working at international schools in Asia?

RQ3: What is the ability of pay, promotion, supervision, fringe benefits, performance based rewards, operating procedures, coworkers, nature of work, and communication to predict contract renewal of all teachers working at international schools in Asia?

Null Hypotheses

H₀₁: The variables (pay, promotion, supervision, fringe benefits, performance based rewards, operating procedures, coworkers, nature of work, and communication) do not
significantly predict the contract renewal of Gen Y teachers working at international schools in Asia.

**H₀2:** The variables (pay, promotion, supervision, fringe benefits, performance based rewards, operating procedures, coworkers, nature of work, and communication) do not significantly predict the contract renewal of non-Gen Y teachers working at international schools in Asia.

**H₀3:** The variables (pay, promotion, supervision, fringe benefits, performance based rewards, operating procedures, coworkers, nature of work, and communication) do not significantly predict the contract renewal of all teachers working at international schools in Asia.

**Participants and Setting**

Convenience sampling consisting of teachers from international schools in Asia was used in the study. Within Asia, a majority of international schools are members of one or more associations. One well-known association of international schools in Asia is East Asia Regional Council of Schools (EARCOS). Additionally, many participants came from International Schools of China (ISC), due to convenience and proximity. ISC is a network of six schools located in various locations across China.

As one of the biggest international school associations in Asia, EARCOS consists of 149 member schools in East Asia (e.g., China, Japan, and Thailand). Additionally, EARCOS has membership at the associate level (e.g., universities, software publishers, and youth organizations). International schools located in China make up the largest bloc of schools in EARCOS. After reaching out to various headmasters and headmistresses of schools with membership within EARCOS and securing permission to survey their teachers, 216 teachers completed the Job Satisfaction Survey (JSS). Out of the 216 surveys, 197 (91.2%) were fully
completed with all questions answered. One hundred sixteen (53.7%) survey takers indicated they were in a contract renewal year. Thus, 79 surveys (non-contract renewal year) were removed from the sample making a total sample size of 116.

International Schools of China (ISC) is an independent entity that consists of six schools with a total enrollment of 1,400 students. Each individual school is also a member of EARCOS. South Korean nationals comprise the majority of the student body with American students as the next biggest group. Teachers hired within the school system receive a stipend and are provided at least two hours of language training per week. All six schools are accredited by North American institutions (e.g. WASC, SACS) and utilize American curriculums.

Female participants outnumbered male participants in overall data and contract renewal year data. The highest percentage of survey takers was from China. Non-Gen Y teachers slightly outnumbered Gen Y teachers. A vast majority of educators in the study had more than six years of teaching experience. Participants who had taught at their current international school for less than two years comprised 44% of the sample. In the study, the proportion between the staying and renewing (criterion variable) was 36/15 for Gen Y, 49/16 for non-Gen Y and 85/31 for all teachers.
Table 5

Participants’ Demographics and Teaching Information

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Fully Completed (N = 197)</th>
<th>Contract Renewal Year (N = 116)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Percentage</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>85</td>
<td>43%</td>
</tr>
<tr>
<td>Female</td>
<td>112</td>
<td>57%</td>
</tr>
<tr>
<td>School Location</td>
<td></td>
<td></td>
</tr>
<tr>
<td>China</td>
<td>117</td>
<td>59%</td>
</tr>
<tr>
<td>South Korea</td>
<td>10</td>
<td>5%</td>
</tr>
<tr>
<td>Mongolia</td>
<td>9</td>
<td>5%</td>
</tr>
<tr>
<td>Thailand</td>
<td>16</td>
<td>8%</td>
</tr>
<tr>
<td>Brunei</td>
<td>12</td>
<td>6%</td>
</tr>
<tr>
<td>Kazakhstan</td>
<td>2</td>
<td>1%</td>
</tr>
<tr>
<td>Malaysia</td>
<td>9</td>
<td>5%</td>
</tr>
<tr>
<td>Philippines</td>
<td>8</td>
<td>4%</td>
</tr>
<tr>
<td>Taiwan</td>
<td>10</td>
<td>5%</td>
</tr>
<tr>
<td>Prefer not to answer</td>
<td>4</td>
<td>2%</td>
</tr>
<tr>
<td>Year of Birth</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1977 – 1992 (Gen Y)</td>
<td>92</td>
<td>47%</td>
</tr>
<tr>
<td>1946 – 1976 (non-Gen Y)</td>
<td>105</td>
<td>53%</td>
</tr>
<tr>
<td>Years in teaching field</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 2 years</td>
<td>19</td>
<td>10%</td>
</tr>
<tr>
<td>Completing 3rd year</td>
<td>10</td>
<td>5%</td>
</tr>
<tr>
<td>Completing 4th year</td>
<td>10</td>
<td>5%</td>
</tr>
<tr>
<td>Completing 5th year</td>
<td>10</td>
<td>5%</td>
</tr>
<tr>
<td>More than 6 years</td>
<td>146</td>
<td>74%</td>
</tr>
<tr>
<td>No response</td>
<td>2</td>
<td>1%</td>
</tr>
<tr>
<td>Years taught at current school</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 2 years</td>
<td>86</td>
<td>44%</td>
</tr>
<tr>
<td>Completing 3rd year</td>
<td>26</td>
<td>13%</td>
</tr>
<tr>
<td>Completing 4th year</td>
<td>16</td>
<td>8%</td>
</tr>
<tr>
<td>Completing 5th year</td>
<td>14</td>
<td>7%</td>
</tr>
<tr>
<td>More than 6 years</td>
<td>55</td>
<td>28%</td>
</tr>
<tr>
<td>Contract Renewal Year</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>116</td>
<td>59%</td>
</tr>
<tr>
<td>No</td>
<td>81</td>
<td>41%</td>
</tr>
</tbody>
</table>
Sampling Procedure

A letter of introduction explaining the purpose of the study and requesting permission to contact each school’s teacher was sent to the international schools associated with EARCOS. The letter included information on disclosure, privacy, and survey submission procedures. The letter stated that individual survey results would not be shared with any school personnel.

After approval from a school’s head administrator, an email with a link to SurveyMonkey was provided for the teachers to take the Job Satisfaction Survey (JSS). Before the start of the online survey, participants read the consent document. The information also stated that proceeding to the actual survey questions constitute agreeing all elements of the consent document.

Sample Size

A minimal requirement for logistical regression is that the sample sizes need to be at least 10 times as many cases as predictor variables (Peduzzi et al., 1996; Warner, 2013). However, Vittinghoff and McCulloch (2006) demonstrated that with 5-9 events per parameter, the coverage of confidence intervals was acceptable. In the study, nine predictor variables (pay, promotion, supervision, fringe benefits, performance-based rewards, operating procedures, coworkers, nature of work, and communication) are used. Using such information, the study needed at least N=45 samples. Taking into account incomplete surveys and that not all respondents were on contract renewal year, a reasonable minimum of participants was N=200.

For a medium effect size with a statistical power of .80 at the .05 alpha level, Warner (2013) recommended a minimum of N = 153 participants would be needed for correlation studies. However, Warner’s suggestions of having N = 153 are based on correlation studies that output a Pearson’s r. Moreover, Warner (2013, p. 303) stated that a Pearson’s r describes the
strength and direction of the linear predictive relationship between variables. The reason for choosing logistic regression is because the data in this study is not linear, but takes on the shape of a logistic curve. Hosmer, Lemeshow, and Sturdivant (2013, p. 402) stated, “There has been surprisingly little work on sample size for logistic regression.” The authors in turn suggested using Peruzzi et al.’s (1996) conclusion of using a sample size of 10 events per covariates or Vittinghof and McCulloch’s (2006) statement of 5-9 events per covariate.

If large amounts of data were missing, a method called the imputation of missing data would be used. For the study, the missing value would be replaced with the average value of the factor the missing value falls under. If imputation of missing data were employed, additional analysis would be conducted with the missing values omitted. The results are credible if both sets of analyses (with and without the replacement values) are nearly identical (Warner, 2013 p.135).

For the study, the number of participants was 216 teachers. Out of the 216 surveys, 197 were fully completed with all questions answered. Out of the 197 fully completed surveys, 116 indicated the survey taker is on a contract renewal year. In the contract renewal pool of teachers, 51 belong to the Gen Y category (born on or after 1977) and 65 belong to the non-Gen Y category (born before 1977).

Table 6

<table>
<thead>
<tr>
<th>Participants on Contract Renewal Year</th>
<th>Gen Y</th>
<th>Non-Gen Y</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>30</td>
<td>35</td>
<td>65</td>
</tr>
<tr>
<td>Male</td>
<td>21</td>
<td>30</td>
<td>51</td>
</tr>
<tr>
<td>Total</td>
<td>51</td>
<td>65</td>
<td>116</td>
</tr>
</tbody>
</table>
**Instrumentation**

The instrument used in the study, developed by Spector (1985), consisted of nine facets. The nine facets of the Job Satisfaction Survey (JSS) are closely related to the motivational and hygiene factors of Herzberg’s Two Factor Theory. The JSS was developed to measure employee job satisfaction applicable specifically to human service, public, and nonprofit sector organizations (Spector, 1985). The instrument was used in numerous studies (e.g. Fila, Paik, Griffeth, & Allen 2014; Talevich, Read, & Walsh, 2014; Chang & Edwards, 2014) and cited over 800 times, according to Google Scholar.

The JSS uses a six point Likert scale with the choices ranging from “strongly disagree” to “strongly agree.” A value of one (1) is assigned to the strongest disagreement to a value of six (6) for the strongest agreement. However, the scores were reversed for negatively worded items. The negatively worded items are 2,4,6,8,10,12,14,16,18,19,21,23,24,26,29,31,32,34,36. Since incorrectly coded variables would greatly affect the results, extra care was given to items requiring reversals. The reversals do not occur on every other item.

The JSS has 36 items with nine facets or subscales. Estimated completion of the survey is under 15 minutes. The JSS has a theoretical minimum score of 36 to a possible maximum of 216. Four items assess each facet, thus the value for each facet subscale can range from 4 to 24. Since each item can be scored from 1 to 6, 4 or more can represent satisfaction and 3 or less can represent dissatisfaction. Using such logic, a total subscale score of the grouped 4-item facet can be interpreted: 4 to 12 means dissatisfied, between 12 and 16 means ambivalent, and 16 to 24 means satisfied. By extension, the total score of the 36-item survey can be interpreted: 36 to 108 means dissatisfaction, 108 to 144 for ambivalent, and 144 to 216 for satisfaction.

Table 7
Facet Subscales of the Job Satisfaction Survey (JSS)

<table>
<thead>
<tr>
<th>Facet Subscales</th>
<th>Item Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pay</td>
<td>1,10,19,28</td>
</tr>
<tr>
<td>Promotion</td>
<td>2,11,20,33</td>
</tr>
<tr>
<td>Supervision</td>
<td>3,12,21,30</td>
</tr>
<tr>
<td>Fringe Benefits</td>
<td>4,13,22,29</td>
</tr>
<tr>
<td>Contingent Rewards</td>
<td>5,14,23,32</td>
</tr>
<tr>
<td>Operating Conditions</td>
<td>6,15,24,31</td>
</tr>
<tr>
<td>Coworkers</td>
<td>7,16,25,34</td>
</tr>
<tr>
<td>Nature of Work</td>
<td>8,17,27,35</td>
</tr>
<tr>
<td>Communication</td>
<td>9,18,26,36</td>
</tr>
</tbody>
</table>

The predictor variables of the study are the nine-subscale measure of the JSS. The JSS has 36 items and possesses a Cronbach’s alpha of 0.91 for the total scale. The Cronbach’s alpha, also known as the coefficient of internal consistency and validity, was also computed for each subscale. Each was above the 0.50 minimum suggested by Nunnally (1967). All but two were over 0.70. A test-retest reliability estimate for the JSS was also available. Correlation coefficients between the subscales 18 months apart were surprisingly high, considering the long time span and many changes in the organization. The coefficients ranged from 0.37 to 0.74 for the subscales and were 0.71 for the entire scale.

The JSS is a copyrighted scale. However, JSS’s author allows free use under two conditions: “The use is for noncommercial educational or research purposes. This means no one is charging anyone a fee. If you are using any of my scales for consulting purposes, there is a fee” and “You agree to share results with me. This is how I continue to update the norms and bibliography” (Spector, 2011, “Sharing of Results for Researchers Who Use My Scales,” para. 1).

In addition to the 36-items in the JSS, additional questions on the survey include: participant’s birth year, nationality, work experience at the current school and years in the
education field. The final question relates to the criterion variable of the teacher’s intention to stay or depart from the current school.

**Criterion Variable**

The criterion variable is the teacher’s decision to renew the contract at the international school. In the survey, the question is stated, “Do you intend to renew your contract at the end of your current term?” In order for the survey results to be useable, the participant was only given the choice of “yes” or “no.” While different schools participating in the study have different procedures for contract renewal, a discussion of ISC’s contract renewal process was addressed, due to a large number of samples coming from ISC schools.

Within the six ISC schools, the head principals will approach staff members on the last year of the contracts in October to gauge the likelihood of renewal. The head principal will also ask the teachers to possibly make a decision before the start of the Christmas holiday break. The rationale for head principals needing to know before the start of the second semester of school is that recruiting teachers to relocate to China is a long process (i.e. applying for work visas and notarizing documents) and accounting for the attrition rate of candidates while going through the hiring process. If a teacher decides to depart, the international schools will provide transitional conferences and services to assist repatriation. If a teacher decides to stay, a new contract will be drawn up by February for the teacher to sign.

**Procedures**

An IRB (Appendix A) application was submitted to Liberty University. After obtaining IRB approval (Appendix B) from Liberty University, a letter (Appendix C) attached to an email was sent to headmasters and head principals of international schools associated with EARCOS or ISC. After a school’s head administrator gave permission for the school’s teachers to participate
in the study, an email (Appendix D) with a brief description of the study was sent to all the teachers within the approved school. Also included in the email was the disclosure and privacy policy; specifically, that the participant’s name would not be asked in the survey. At the end of the email, a link to SurveyMonkey was provided for the teachers to take the Job Satisfaction Survey (JSS). When participants opened the link, they were asked to give informed consent before beginning the survey. Then in the next page, participants were given the following instruction. After reading the instruction, the following page consisted of basic demographic questions and the actual survey instrument.

A follow-up email (Appendix E) was sent to all teachers encouraging those who had not submitted a survey to submit one as soon as possible. The follow-up email was sent two weeks after the initial email to the international school teachers. After downloading the completed survey data from SurveyMonkey™, the results were analyzed using IBM Statistical Package for the Social Sciences (SPSS).

Table 8

<table>
<thead>
<tr>
<th>IRB and Permission Documents</th>
<th>Institutions or Groups Involved</th>
<th>Document Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>IRB Application</td>
<td>Liberty University</td>
<td>Appendix A</td>
</tr>
<tr>
<td>IRB Approval</td>
<td>Liberty University</td>
<td>Appendix B</td>
</tr>
<tr>
<td>Letter to International School Lead Administrators</td>
<td>Head Principals and Headmasters</td>
<td>Appendix C</td>
</tr>
<tr>
<td>Email to International School Teachers</td>
<td>International School Teachers</td>
<td>Appendix D</td>
</tr>
<tr>
<td>Follow-up Email to International School Teachers</td>
<td>International School Teachers</td>
<td>Appendix E</td>
</tr>
</tbody>
</table>
Data Analysis

In attempting to find a correlation between the nine facets of the Job Satisfaction Survey (JSS) to the teachers’ decisions to renew contracts, the appropriate tool to use was the binary logistic regression since there were nine predictor variables and one criterion variable that was dichotomous (Gall et al., 2006, p.332). Within the models generated by the binary logistic regression, an alpha level of .05 is chosen as the threshold of significance for the individual predictor variables. Also, the 95% confidence interval (CI) reported provides information about the amount of sampling error associated with the change in odds (Warner, 2013).

Assumption Testing

Logistic regression does not require restrictive assumptions as compared to other general linear models (e.g., discriminant analysis, multiple linear regression). Assumptions for logistic regression include: making sure the outcome variable is dichotomous, scores on the outcome variable must be statistically independent of each other, the model should include all relevant predictors, and the categories on the outcome variable are assumed to be exhaustive and mutually exclusive (Wright, 1995; Warner 2013).

Preliminary Data Screening

In the study, the only categorical variable was the criterion or outcome variable. According to Warner (2013), one of the most important issues in logistic regression is the distribution of scores on the criterion variable. In the study, the only possible values the outcome variable can take is “0” for renewing the contract or “1” for not renewing the contract. Meaningful results may not be obtained if the proportion of the two groups in the criterion variable deviate greatly from a 50/50 split and if the total number of participants is too small.
Another pitfall was the data outliers on the quantitative predictor variables in the study. To seek and handle outliers, a baseline model that encompassed all cases would be run. Then a second model will be run excluding cases where the absolute value of the standardized residual is greater than 3.0. After comparing the baseline model’s classification accuracy rate to the second model’s classification accuracy rate, the model with the better rate would be used. However, in this study, none of the variables contained standardized residual greater than 3.0.

Method

In SPSS, there are three general options for entering explanatory variables into the model. The “Enter” method means that all explanatory variables are forced into the model at the same time. The “Forward” method adds explanatory variables to a basic model while the “Backward” method removes variables from the full model. For the study, the “Enter” method was used to minimize Type I error. Statistical methods using predictor variable selection such as the forward or backward regression can substantially increase the risk of Type I error (Warner, 2013 p.1038).

Reporting

To give an overview of the data, descriptive statistics in the form of tables were presented. Results addressing goodness of fit of the models outputted using binary logistic regression were discussed. The Omnibus Tests of Model Coefficients returned a Chi-square value to see if the null model or constant-only model was statistically significant at $p < .05$. Results from Nagelkerke’s $R^2$, Cox and Snell’s $R^2$, and Hosmer and Lemeshow test were used to address models’ fit to survey data.

Classification tables demonstrated the accuracy of null and full models provided through the binary logistic regression statistics. Classification plots provided a visual demonstration of how well the model predicts whether or not teachers will be retained. With a classification plot,
a U-shaped distribution indicated that the samples are grouped together at each end. The goal was to have as few errors (false positives and false negatives) as possible with only a few plots in the middle around .50.

A receiver operating characteristic (ROC) curve was used to illustrate the performance of statistically significant predictor variables. The ROC curve was formulated when radar receiver operators during World War Two were being assessed on their ability to distinguish signal (e.g. aircrafts) from noise (e.g. flocks of birds). Not only was the detection process based on the operators’ skills, but the gain levels from the radar receiver units also affected the signal to noise ratios (Swets, 1973). In today’s applications, ROC analysis is used extensively in medical and psychological diagnostic test evaluation (Hajian-Tilaki, 2013).

The ROC curve graphically showed the trade-off between the true positive fraction and false positive fraction (Hajian-Tilaki, 2013). The true positive fraction was also known as sensitivity. This measures the percentages of positives that were correctly identified. The false positive fraction was 100%-true negative rate. This was also represented as 1-specificity. The ROC curve plotted the sensitivity on the vertical axis and 1-specificity on the horizontal axis. Lastly, the area under the curve (AUC) was an output generated by SPSS when generating the ROC curve. In this study, the AUC was interpreted as the usefulness of the predictor variables in predicting teacher renewal outcomes. A maximum AUC = 1 meant that the predictor variable was perfect in differentiating between the staying and leaving teachers. An AUC = .5 meant that the predictor variable was not useful in predicting teacher contract renewal.

In table form, model coefficients, statistical significance tests, and the nature and direction of the association were reported. Additional reporting components included Wald statistics and estimated change in odds along with a 95% confidence interval. Effect size
information in the form of odds ratio were presented along with prediction equations corresponding to each of the three research questions.
CHAPTER FOUR: FINDINGS

The purpose of this quantitative, correlational study was to test Herzberg’s Two Factor Theory (Herzberg et al., 1959) that relates motivation and hygiene factors to the contract renewal of Gen Y and non-Gen Y teachers working at international schools in Asia. The predictor variables for this study were pay, promotion, supervision, fringe benefits, performance based rewards, operating procedures, coworkers, nature of work, and communication. The criterion variable was the teacher’s decision to renew the contract with the international school at which the educator is currently employed.

With one criterion variable that is dichotomous (either yes or no) and nine predictor variables, binary logistic regression is the best statistical procedure to answer the three research questions. In addition to using binary logistic regression as the inferential statistic, the data sets were analyzed using descriptive statistics for clarity. All analyses were processed through the use of IBM SPSS Version 23.0 software.

Research Questions

**RQ1:** What is the ability of pay, promotion, supervision, fringe benefits, performance based rewards, operating procedures, coworkers, nature of work, and communication to predict contract renewal of *Gen Y teachers* working at international schools in Asia?

**RQ2:** What is the ability of pay, promotion, supervision, fringe benefits, performance based rewards, operating procedures, coworkers, nature of work, and communication to predict contract renewal of *non-Gen Y teachers* working at international schools in Asia?

**RQ3:** What is the ability of pay, promotion, supervision, fringe benefits, performance based rewards, operating procedures, coworkers, nature of work, and communication to predict contract renewal of *all teachers* working at international schools in Asia?
Null Hypotheses

\textbf{H}_01: The variables (pay, promotion, supervision, fringe benefits, performance based rewards, operating procedures, coworkers, nature of work, and communication) do not significantly predict the contract renewal of \textit{Gen Y teachers} working at international schools in Asia.

\textbf{H}_02: The variables (pay, promotion, supervision, fringe benefits, performance based rewards, operating procedures, coworkers, nature of work, and communication) do not significantly predict the contract renewal of \textit{non-Gen Y teachers} working at international schools in Asia.

\textbf{H}_03: The-variables (pay, promotion, supervision, fringe benefits, performance based rewards, operating procedures, coworkers, nature of work, and communication) do not significantly predict the contract renewal of \textit{all teachers} working at international schools in Asia.

Results

Two hundred sixteen teachers completed the online survey hosted by SurveyMonkey. Out of the 216 surveys received, 197 were fully complete with all questions answered and no omissions.

In the 216 surveys that were started, 197 were fully completed with all questions answered. Out of the 197 fully completed surveys, 116 indicated the survey taker was on a contract renewal year. In the contract renewal pool of teachers, 51 belong to the Gen Y category (born on or after 1977) and 65 belong to the non-Gen Y category (born before 1977). The total sample size for this study is 116.
Table 9

*Teachers on Contract Renewal Year*

<table>
<thead>
<tr>
<th></th>
<th>Gen Y</th>
<th>Non-Gen Y</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staying</td>
<td>36 (31.0%)</td>
<td>49 (42.2%)</td>
<td>85 (73.3%)</td>
</tr>
<tr>
<td>Leaving</td>
<td>15 (12.9%)</td>
<td>16 (13.8%)</td>
<td>31 (26.7%)</td>
</tr>
<tr>
<td>Total</td>
<td>51 (44.0%)</td>
<td>65 (56.0%)</td>
<td>116 (100%)</td>
</tr>
</tbody>
</table>

**Null Hypothesis One**

H0: The variables (pay, promotion, supervision, fringe benefits, performance based rewards, operating procedures, coworkers, nature of work, and communication) do not significantly predict the contract renewal of *Gen Y teachers* working at international schools in Asia.

Table 10 shows the descriptive statistics for the data gathered from Gen Y teachers.

While each predictor’s lowest possible score can be four and the highest possible score can be 24. The variable with the smallest variance was natofwork (nature of work) and the largest was supervision.

Table 10

*Descriptive Statistics for Gen Y Teachers (Born on or after 1977)*

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Range</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>pay</td>
<td>51</td>
<td>20</td>
<td>4</td>
<td>24</td>
<td>15.29</td>
<td>4.627</td>
<td>21.412</td>
</tr>
<tr>
<td>promo</td>
<td>51</td>
<td>20</td>
<td>4</td>
<td>24</td>
<td>15.00</td>
<td>4.737</td>
<td>22.440</td>
</tr>
<tr>
<td>supervision</td>
<td>51</td>
<td>18</td>
<td>6</td>
<td>24</td>
<td>18.55</td>
<td>4.981</td>
<td>24.813</td>
</tr>
<tr>
<td>fringe</td>
<td>51</td>
<td>18</td>
<td>5</td>
<td>23</td>
<td>15.55</td>
<td>4.154</td>
<td>17.253</td>
</tr>
<tr>
<td>contr</td>
<td>51</td>
<td>19</td>
<td>5</td>
<td>24</td>
<td>16.33</td>
<td>4.832</td>
<td>23.347</td>
</tr>
<tr>
<td>opcond</td>
<td>51</td>
<td>19</td>
<td>4</td>
<td>23</td>
<td>14.22</td>
<td>4.220</td>
<td>17.813</td>
</tr>
<tr>
<td>coworkers</td>
<td>51</td>
<td>17</td>
<td>7</td>
<td>24</td>
<td>18.63</td>
<td>3.594</td>
<td>12.918</td>
</tr>
<tr>
<td>natofwork</td>
<td>51</td>
<td>12</td>
<td>12</td>
<td>24</td>
<td>20.71</td>
<td>2.678</td>
<td>7.172</td>
</tr>
<tr>
<td>comm</td>
<td>51</td>
<td>19</td>
<td>4</td>
<td>23</td>
<td>15.47</td>
<td>4.868</td>
<td>23.694</td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td>51</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
A binary logistic regression analysis was performed on the Gen Y data. The outcome variable “leave” was coded 0 = stay and 1 = leave. Nine predictor variables were included in the model; these were responses to the Job Satisfaction Survey (JSS). In the SPSS data file, 36 questions are grouped into nine subdomains, which correspond to the nine predictor variables. Data from 51 surveys were included in the analysis.

**Goodness-of-fit for model**

Since multiple quantitative predictors were included in the model, the Hosmer and Lemeshow test (Table 13) was used to test goodness of fit. In the model, the Hosmer and Lemeshow test returned $\chi^2(8), p = .008$. Since this is less than .05, the null hypothesis that there is no difference between observed and model-predicted values was rejected. The result of the Hosmer and Lemeshow test implied that the model’s estimated fit to the data was not acceptable. However, according to Hosmer et al. (2013), this full model can still be accepted if other information can point to a good model fit.

A test of the full model, with all nine predictor variables, compared with a constant-only or null model was statistically significant, $\chi^2(9) = 28.105$ with $p < .001$ (Table 11). The strength of the association between the predictor variables and teacher contract renewal was Cox and Snell’s $R^2 = .424$ and Nagelkerke’s $R^2 = .603$ (Table 12). The classification tables (Table 14 and 15) showed the full model as better than the constant-only model, supporting the full model’s acceptance.

**Table 11**

<table>
<thead>
<tr>
<th>Omnibus Tests of Model Coefficients (Gen Y Data)</th>
<th>Chi-square</th>
<th>df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1 Step Block Model</td>
<td>28.105</td>
<td>9</td>
<td>.001</td>
</tr>
<tr>
<td></td>
<td>28.105</td>
<td>9</td>
<td>.001</td>
</tr>
<tr>
<td></td>
<td>28.105</td>
<td>9</td>
<td>.001</td>
</tr>
</tbody>
</table>
Table 12

**Model Summary (Gen Y Data)**

<table>
<thead>
<tr>
<th>Step</th>
<th>-2 Log likelihood</th>
<th>Cox &amp; Snell R Square</th>
<th>Nagelkerke R Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>33.686*a</td>
<td>.424</td>
<td>.603</td>
</tr>
</tbody>
</table>

a. Estimation terminated at iteration number 6 because parameter estimates changed by less than .001.

Table 13

**Hosmer and Lemeshow Test (Gen Y Data)**

<table>
<thead>
<tr>
<th>Step</th>
<th>Chi-square</th>
<th>df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>20.681</td>
<td>8</td>
<td>.008</td>
</tr>
</tbody>
</table>

Classification Tables and Plot

The null model (without any predictor variables) correctly predicted 70.6% of the cases.

The full model (with all nine predictor variables) correctly predicted 88.2% of the cases.

Prediction success overall was 88.2% (94.4% for staying and 73.3% for leaving).

Table 14

**Classification Table Step 0\(^a\,b\) (Gen Y Data)**

<table>
<thead>
<tr>
<th>Observed</th>
<th>Predicted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 0</td>
<td>leave</td>
</tr>
<tr>
<td></td>
<td>0</td>
</tr>
<tr>
<td>leave</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Overall</td>
<td>Percentage</td>
</tr>
</tbody>
</table>

a. Constant is included in the model.
b. The cut value is .500
Table 15

Classification Table Step 1º (Gen Y Data)

<table>
<thead>
<tr>
<th>Observed</th>
<th>Predicted</th>
<th>Percentage Correct</th>
</tr>
</thead>
<tbody>
<tr>
<td>leave 0</td>
<td>34 2</td>
<td>94.4</td>
</tr>
<tr>
<td>1</td>
<td>4 11</td>
<td>73.3</td>
</tr>
</tbody>
</table>

Overall Percentage 88.2

a. The cut value is .500

Figure 1 is the classification plot generated with the Gen Y data. A U-shaped distribution is more desirable than a normal distribution. A U-shaped distribution indicates the predictions are well differentiated with cases clustered at each end showing correct classification. A normal distribution indicates too many predictions close to the cut-off point (.5), with a consequence of increased misclassification, which is not a good model fit.

Figure 1. Classification Plot (Gen Y Data)
ROCV Curve and AUC

Figure 2. ROC Curve (Gen Y Data)

![ROC Curve](image)

Diagonal segments are produced by ties.

Table 16

*Area Under the Curve (Gen Y data)*

<table>
<thead>
<tr>
<th>Test Result Variable(s):</th>
<th>comm</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Area</strong></td>
<td>.836</td>
</tr>
</tbody>
</table>

The test result variable(s): comm has at least one tie between the positive actual state group and the negative actual state group. Statistics may be biased.
AUC = .836 indicates that this model has good accuracy in separating teacher who are staying and teacher who are leaving with communication (comm) as the predictor variable.

**Odds Ratio and Effect Size**

Table 17 summarizes the raw score binary logistic regression coefficients, Wald statistics, and the estimated change in odds of leaving for the associated predictor variables along with a 95% confidence interval (CI). The full model showed that the Wald statistic was significant at \( p < .05 \) for predictor variable communication (comm).

The odds ratio is a measure of effect size. Within the model generated by analyzing Gen Y data, communication was the only statistically significant variable in predicting teacher contract renewal. For each whole step of increase in satisfaction under the communication facet, a teacher is .709 times more likely to leave (29.1% less likely to leave) with a 95% CI [.525, .958] where \( p = .025 \).

**Table 17**

*Variables in the Equation (Gen Y Data)*

<table>
<thead>
<tr>
<th>Variables in the Equation (Gen Y Data)</th>
<th>B</th>
<th>S.E.</th>
<th>Wald</th>
<th>Df</th>
<th>Sig.</th>
<th>Exp(B)</th>
<th>95% CI for Exp(B) Lower</th>
<th>95% CI for Exp(B) Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1a: pay</td>
<td>.073</td>
<td>.183</td>
<td>.157</td>
<td>1</td>
<td>.692</td>
<td>1.075</td>
<td>.751</td>
<td>1.539</td>
</tr>
<tr>
<td>promo</td>
<td>.119</td>
<td>.148</td>
<td>.646</td>
<td>1</td>
<td>.422</td>
<td>1.126</td>
<td>.843</td>
<td>1.505</td>
</tr>
<tr>
<td>supervision</td>
<td>-.128</td>
<td>.130</td>
<td>.969</td>
<td>1</td>
<td>.325</td>
<td>.880</td>
<td>.683</td>
<td>1.135</td>
</tr>
<tr>
<td>fringe bene</td>
<td>.008</td>
<td>.213</td>
<td>.001</td>
<td>1</td>
<td>.972</td>
<td>1.008</td>
<td>.664</td>
<td>1.530</td>
</tr>
<tr>
<td>contreward</td>
<td>-.278</td>
<td>.206</td>
<td>1.831</td>
<td>1</td>
<td>.176</td>
<td>.757</td>
<td>.506</td>
<td>1.133</td>
</tr>
<tr>
<td>opcond</td>
<td>-.270</td>
<td>.191</td>
<td>1.996</td>
<td>1</td>
<td>.158</td>
<td>.763</td>
<td>.525</td>
<td>1.110</td>
</tr>
<tr>
<td>coworkers</td>
<td>.220</td>
<td>.196</td>
<td>1.262</td>
<td>1</td>
<td>.261</td>
<td>1.246</td>
<td>.849</td>
<td>1.830</td>
</tr>
<tr>
<td>natofwork</td>
<td>.167</td>
<td>.203</td>
<td>.678</td>
<td>1</td>
<td>.410</td>
<td>1.181</td>
<td>.794</td>
<td>1.757</td>
</tr>
<tr>
<td>comm</td>
<td>-.344</td>
<td>.154</td>
<td>5.013</td>
<td>1</td>
<td>.025</td>
<td>.709</td>
<td>.525</td>
<td>.958</td>
</tr>
<tr>
<td>Constant</td>
<td>3.911</td>
<td>4.945</td>
<td>.626</td>
<td>1</td>
<td>.429</td>
<td>49.957</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Variable(s) entered on step 1: pay, promo, supervision, fringe bene, contreward, opcond, coworkers, natofwork, comm.

The prediction equation generated with the coefficients from Table 17 is

\[
\log \left( \frac{Y}{1-Y} \right) = 3.911 + .073x_1 + .119x_2 - .128x_3 + .008x_4 - .278x_5 - .270x_6 + .220x_7 + .167x_8 -
\]
$.344x_9$, where $Y$ is the probability of leaving the school. Expressed in terms of the variables from the analysis, the logistic equation is $\log\left(\frac{Y}{1-Y}\right) = 3.911 + .073*pay + .119*promo - .128*supervision + .008*fringebene - .278*contreward - .270*opcond + .220*coworkers + .167*natofwork - .344*comm.$

**Null Hypothesis Two**

$H_{02}$: The variables (pay, promotion, supervision, fringe benefits, performance based rewards, operating procedures, coworkers, nature of work, and communication) do not significantly predict the contract renewal of *non-Gen Y* teachers working at international schools in Asia.

Table 18 shows the descriptive statistics for the data gathered from non-Gen Y teachers. While each predictor’s lowest possible score can be four and the highest possible score can be 24. The variable with the smallest variance was natofwork (nature of work), which was also the same variable with the smallest variance for the Gen Y dataset. The variable with the largest variance was fringebene (fringe benefits).
Table 18

Descriptive Statistics for non-Gen Y Teachers (Born before 1977)

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Range</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>pay</td>
<td>65</td>
<td>20</td>
<td>4</td>
<td>24</td>
<td>16.46</td>
<td>5.804</td>
<td>33.690</td>
</tr>
<tr>
<td>promotion</td>
<td>65</td>
<td>20</td>
<td>4</td>
<td>24</td>
<td>15.85</td>
<td>4.664</td>
<td>21.757</td>
</tr>
<tr>
<td>supervision</td>
<td>65</td>
<td>20</td>
<td>4</td>
<td>24</td>
<td>19.98</td>
<td>4.675</td>
<td>21.859</td>
</tr>
<tr>
<td>fringe bene</td>
<td>65</td>
<td>20</td>
<td>4</td>
<td>24</td>
<td>15.89</td>
<td>5.829</td>
<td>33.973</td>
</tr>
<tr>
<td>contro reward</td>
<td>65</td>
<td>20</td>
<td>4</td>
<td>24</td>
<td>17.23</td>
<td>5.089</td>
<td>25.899</td>
</tr>
<tr>
<td>op cond</td>
<td>65</td>
<td>19</td>
<td>4</td>
<td>23</td>
<td>15.29</td>
<td>4.336</td>
<td>18.804</td>
</tr>
<tr>
<td>coworkers</td>
<td>65</td>
<td>15</td>
<td>9</td>
<td>24</td>
<td>19.83</td>
<td>3.677</td>
<td>13.518</td>
</tr>
<tr>
<td>nat of work</td>
<td>65</td>
<td>9</td>
<td>15</td>
<td>24</td>
<td>21.54</td>
<td>2.599</td>
<td>6.752</td>
</tr>
<tr>
<td>comm</td>
<td>65</td>
<td>20</td>
<td>4</td>
<td>24</td>
<td>17.57</td>
<td>4.714</td>
<td>22.218</td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td>65</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A binary logistic regression analysis was performed on the non-Gen Y data. The outcome variable “leave” was coded 0 = stay and 1 = leave. Nine predictor variables were included in the model; these were responses to the Job Satisfaction Survey (JSS). In the SPSS data file, the 36 questions were grouped into nine subdomains, which correspond to the nine predictor variables. Data from 65 surveys were included in the analysis.

**Goodness-of-fit for model**

A test of the full model, with all nine predictor variables, compared with a constant-only or null model was statistically significant, \( \chi^2(9) = 27.031 \) with \( p = .001 \) (Table 19). The strength of the association between the predictor variables and teacher contract renewal was Cox and Snell’s \( R^2 = .340 \) and Nagelkerke’s \( R^2 = .506 \) (Table 20). Since multiple quantitative predictors were included in the model, the Hosmer and Lemeshow test was used to test goodness of fit. In the model, the Hosmer and Lemeshow test returned \( \chi^2(7), p = .886 \) (Table 21). Since this is greater than .05, the researcher failed to reject the null hypothesis that there is no difference
between observed and model-predicted values, implying that the model’s estimates fit the data at an acceptable level.

Table 19

<table>
<thead>
<tr>
<th>Omnibus Tests of Model Coefficients (non-Gen Y Data)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>Step 1: Step</td>
</tr>
<tr>
<td>Chi-square: 27.031 df: 9 Sig.: .001</td>
</tr>
<tr>
<td>Block: Step</td>
</tr>
<tr>
<td>Chi-square: 27.031 df: 9 Sig.: .001</td>
</tr>
<tr>
<td>Model: Step</td>
</tr>
<tr>
<td>Chi-square: 27.031 df: 9 Sig.: .001</td>
</tr>
</tbody>
</table>

Table 20

<table>
<thead>
<tr>
<th>Model Summary (non-Gen Y Data)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>a. Estimation terminated at iteration number 6 because parameter estimates changed by less than .001.</td>
</tr>
</tbody>
</table>

Table 21

<table>
<thead>
<tr>
<th>Hosmer and Lemeshow Test (non-Gen Y Data)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step: Chi-square: 2.991 df: 7 Sig.: .886</td>
</tr>
</tbody>
</table>

Classification Tables and Plot

The null model (without any predictor variables) correctly predicted 75.4% of the cases.

The full model (with all nine predictor variables) correctly predicted 86.2% of the cases.

Prediction success overall was 86.2% (91.8% for staying and 68.8% for leaving).
Table 22

Classification Table Step 0\(^{a,b}\) (non-Gen Y Data)

<table>
<thead>
<tr>
<th>Observed</th>
<th>Predicted leave</th>
<th>Percentage Correct</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>49</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>16</td>
</tr>
</tbody>
</table>

Overall Percentage 75.4

a. Constant is included in the model.
b. The cut value is .500

Table 23

Classification Table Step 1\(^a\) (non-Gen Y Data)

<table>
<thead>
<tr>
<th>Observed</th>
<th>Predicted leave</th>
<th>Percentage Correct</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>45</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>5</td>
</tr>
</tbody>
</table>

Overall Percentage 86.2

a. The cut value is .500

Figure 3 is the classification plot generated with the non-Gen Y data. A U-shaped distribution is more desirable than a normal distribution. A U-shaped distribution indicates the predictions are well differentiated with cases clustered at each end showing correct classification. A normal distribution indicates too many predictions close to the cut-off point (.5), with a consequence of increased misclassification, which is not a good model fit.
Figure 3. Classification Plot (non-Gen Y Data)

Step number: 1

Observed Groups and Predicted Probabilities

<table>
<thead>
<tr>
<th>Step</th>
<th>Observed Groups</th>
<th>Predicted Probabilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Predicted Probability is of Membership for 1
The Cut Value is .50
Symbols: 0 - 0
1 - 1
Each Symbol Represents .5 Cases.
Figure 4. ROC Curve (non-Gen Y Data)

Table 24

<table>
<thead>
<tr>
<th>Test Result Variable(s)</th>
<th>Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>supervision</td>
<td>.764</td>
</tr>
<tr>
<td>natofwork</td>
<td>.814</td>
</tr>
</tbody>
</table>

The test result variable(s): supervision, natofwork has at least one tie between the positive actual state group and the negative actual state group. Statistics may be biased.
AUC = .764 indicates that this model has fair accuracy in separating teacher who are staying and teacher who are leaving with supervision as the predictor variable. AUC = .814 indicates that this model has good accuracy in separating teacher who are staying and teacher who are leaving with nature of work (natofwork) as the predictor variable.

**Odds Ratio and Effect Size**

Table 25 summarizes the raw score binary logistic regression coefficients, Wald statistics, and the estimated change in odds of leaving for the associated predictor variables along with a 95% confidence interval (C.I.). The full model showed the Wald statistic was significant at $p < .05$ for predictor variables supervision and natofwork (nature of work).

The odds ratio is a measure of effect size. Within the model generated by analyzing non-Gen Y data, two out of the nine predictor variables were statistically significant in predicting teacher contract renewal. For each whole step of increase in satisfaction under the supervision facet, a teacher is .744 times more likely to leave (25.6% less likely to leave) with a 95% CI [.568, .975] where $p = .032$. For each whole step of increase in satisfaction under the natofwork facet, a teacher is .569 times more likely to leave (43.1% less likely to leave) with a 95% CI [.386, .838] where $p = .004$.
Table 25

**Variables in the Equation (non-Gen Y Data)**

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>S.E.</th>
<th>Wald</th>
<th>df</th>
<th>Sig.</th>
<th>Exp(B)</th>
<th>95% CI for Exp(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong> a</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>pay</td>
<td>.164</td>
<td>.136</td>
<td>1.447</td>
<td>1</td>
<td>.229</td>
<td>1.178</td>
<td>.902 to 1.538</td>
</tr>
<tr>
<td>promotion</td>
<td>.130</td>
<td>.131</td>
<td>1.986</td>
<td>1</td>
<td>.321</td>
<td>1.138</td>
<td>.881 to 1.471</td>
</tr>
<tr>
<td>supervision</td>
<td>-.295</td>
<td>.138</td>
<td>4.587</td>
<td>1</td>
<td>.032</td>
<td>.744</td>
<td>.568 to .975</td>
</tr>
<tr>
<td>fringe bene</td>
<td>-.118</td>
<td>.121</td>
<td>1.957</td>
<td>1</td>
<td>.328</td>
<td>.889</td>
<td>.701 to 1.126</td>
</tr>
<tr>
<td>contreward</td>
<td>-.081</td>
<td>.143</td>
<td>.320</td>
<td>1</td>
<td>.572</td>
<td>.922</td>
<td>.697 to 1.220</td>
</tr>
<tr>
<td>opcond</td>
<td>.171</td>
<td>.138</td>
<td>1.530</td>
<td>1</td>
<td>.216</td>
<td>1.186</td>
<td>.905 to 1.554</td>
</tr>
<tr>
<td>coworkers</td>
<td>.077</td>
<td>.139</td>
<td>.305</td>
<td>1</td>
<td>.581</td>
<td>1.080</td>
<td>.822 to 1.419</td>
</tr>
<tr>
<td>natofwork</td>
<td>-.565</td>
<td>.198</td>
<td>8.121</td>
<td>1</td>
<td>.004</td>
<td>.569</td>
<td>.386 to .838</td>
</tr>
<tr>
<td>comm</td>
<td>-.075</td>
<td>.128</td>
<td>.341</td>
<td>1</td>
<td>.559</td>
<td>.928</td>
<td>.722 to 1.193</td>
</tr>
<tr>
<td><strong>Constant</strong></td>
<td>11.972</td>
<td>3.911</td>
<td>9.370</td>
<td>1</td>
<td>.002</td>
<td>158234.595</td>
<td></td>
</tr>
</tbody>
</table>

a. Variable(s) entered on step 1: pay, promotion, supervision, fringe bene, contreward, opcond, coworkers, natofwork, comm.

The prediction equation generated with the coefficients from Table 25 is \( \log \left( \frac{Y}{1-Y} \right) = 11.972 + .164x_1 + .130x_2 - .295x_3 - .118x_4 - .081x_5 + .171x_6 + .077x_7 - .565x_8 - .075x_9 \), where \( Y \) is the probability of leaving the school. Expressed in terms of the variables from the analysis, the logistic equation is \( \log \left( \frac{Y}{1-Y} \right) = 11.972 + .164*pay + .130*promo - .295*supervision - .118*fringe bene - .081*contreward + .171*opcond + .077*coworkers - .565*natofwork - .075*comm. \)

**Null Hypothesis Three**

**H\(_0\)3:** The variables (pay, promotion, supervision, fringe benefits, performance based rewards, operating procedures, coworkers, nature of work, and communication) do not predict the contract renewal of all teachers working at international schools in Asia.

Table 26 shows the descriptive statistics for the data gathered from Gen Y and non-Gen Y teachers for the nine predictor variables. While the each predictor’s lowest possible score can
be four and the highest possible score can be 24. The variable with the smallest variance was natofwork (nature of work), which is also the same variable with the smallest variance for the Gen Y and non-Gen Y dataset. The variable with the largest variance was pay.

Table 26

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Range</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>pay</td>
<td>116</td>
<td>20</td>
<td>4</td>
<td>24</td>
<td>15.95</td>
<td>5.329</td>
<td>28.397</td>
</tr>
<tr>
<td>promotion</td>
<td>116</td>
<td>20</td>
<td>4</td>
<td>24</td>
<td>15.47</td>
<td>4.695</td>
<td>22.043</td>
</tr>
<tr>
<td>supervision</td>
<td>116</td>
<td>20</td>
<td>4</td>
<td>24</td>
<td>19.35</td>
<td>4.844</td>
<td>23.465</td>
</tr>
<tr>
<td>fringebene</td>
<td>116</td>
<td>20</td>
<td>4</td>
<td>24</td>
<td>15.74</td>
<td>5.142</td>
<td>26.437</td>
</tr>
<tr>
<td>contreward</td>
<td>116</td>
<td>20</td>
<td>4</td>
<td>24</td>
<td>16.84</td>
<td>4.976</td>
<td>24.764</td>
</tr>
<tr>
<td>opcond</td>
<td>116</td>
<td>19</td>
<td>4</td>
<td>23</td>
<td>14.82</td>
<td>4.301</td>
<td>18.497</td>
</tr>
<tr>
<td>coworkers</td>
<td>116</td>
<td>17</td>
<td>7</td>
<td>24</td>
<td>19.30</td>
<td>3.674</td>
<td>13.499</td>
</tr>
<tr>
<td>natofwork</td>
<td>116</td>
<td>12</td>
<td>12</td>
<td>24</td>
<td>21.17</td>
<td>2.655</td>
<td>7.048</td>
</tr>
<tr>
<td>comm</td>
<td>116</td>
<td>20</td>
<td>4</td>
<td>24</td>
<td>16.65</td>
<td>4.875</td>
<td>23.761</td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td>116</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A binary logistic regression analysis was performed on the Gen Y and non-Gen Y data. The outcome variable “leave” was coded 0 = stay and 1 = leave. Nine predictor variables were included in the model; these were responses to the Job Satisfaction Survey (JSS). In the SPSS data file, the 36 questions were grouped into nine subdomains, which corresponded to the nine predictor variables. Data from 116 surveys were included in the analysis.

**Goodness-of-fit for model**

A test of the full model with all nine predictor variables compared with a constant-only or null model was statistically significant, $\chi^2(9) = 40.831$ with $p < .001$ (Table 27). The strength of the association between the predictor variables and teacher contract renewal was Cox and Snell’s $R^2 = .297$ and Nagelkerke’s $R^2 = .432$ (Table 28). Since multiple quantitative predictors were included in the model, the Hosmer and Lemeshow test was used determine to test goodness of
fit. In the model, the Hosmer and Lemeshow test returned $\chi^2(8), p = .062$ (Table 29). Since this is greater than .05, we fail to reject the null hypothesis that there is no difference between observed and model-predicted values, implying that the model’s estimates fit the data at an acceptable level.

Table 27

<table>
<thead>
<tr>
<th>Omnibus Tests of Model Coefficients (Gen Y and non-Gen Y Data)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Chi-square</strong></td>
</tr>
<tr>
<td>----</td>
</tr>
<tr>
<td>Step 1</td>
</tr>
<tr>
<td>Block</td>
</tr>
<tr>
<td>Model</td>
</tr>
</tbody>
</table>

Table 28

<table>
<thead>
<tr>
<th>Model Summary (Gen Y and non-Gen Y Data)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step</strong></td>
</tr>
<tr>
<td>----</td>
</tr>
<tr>
<td>1</td>
</tr>
</tbody>
</table>

a. Estimation terminated at iteration number 5 because parameter estimates changed by less than .001.

Table 29

<table>
<thead>
<tr>
<th>Hosmer and Lemeshow Test (Gen Y and non-Gen Y Data)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step</strong></td>
</tr>
<tr>
<td>----</td>
</tr>
<tr>
<td>1</td>
</tr>
</tbody>
</table>

Classification Tables and Plot

The null model (without any predictor variables) correctly predicted 73.3% of the cases.

The full model (with all nine predictor variables) correctly predicted 80.2% of the cases.

Prediction success overall was 80.2% (91.8% for staying and 48.4% for leaving).
Table 30

Classification Table Step 0\textsuperscript{a,b} (Gen Y and non-Gen Y Data)

<table>
<thead>
<tr>
<th></th>
<th>Leave</th>
<th>Percentage Correct</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observed</td>
<td>0</td>
<td>85</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>31</td>
</tr>
<tr>
<td>Overall Percentage</td>
<td></td>
<td>73.3</td>
</tr>
</tbody>
</table>

a. Constant is included in the model.

b. The cut value is .500

Table 31

Classification Table Step 1\textsuperscript{a} (Gen Y and non-Gen Y Data)

<table>
<thead>
<tr>
<th></th>
<th>Leave</th>
<th>Percentage Correct</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observed</td>
<td>0</td>
<td>78</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>16</td>
</tr>
<tr>
<td>Overall Percentage</td>
<td></td>
<td>80.2</td>
</tr>
</tbody>
</table>

a. The cut value is .500

Figure 5 is the classification plot generated with the Gen Y data and non-Gen Y data. A U-shaped distribution is more desirable than a normal distribution. A U-shaped distribution indicates the predictions are well differentiated with cases clustered at each end showing correct classification. A normal distribution indicates too many predictions close to the cut-off point (.5), with a consequence of increased misclassification, which is not a good model fit.
Figure 5. Classification Plot (Gen Y and non-Gen Y Data)

<table>
<thead>
<tr>
<th>Observed Groups and Predicted Probabilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step number: 1</td>
</tr>
<tr>
<td>B +</td>
</tr>
<tr>
<td>I</td>
</tr>
<tr>
<td>I 10</td>
</tr>
<tr>
<td>F I 10</td>
</tr>
<tr>
<td>R 6 + 10 0</td>
</tr>
<tr>
<td>E I 10 0</td>
</tr>
<tr>
<td>Q I 00 0 0</td>
</tr>
<tr>
<td>U I 00 0 0</td>
</tr>
<tr>
<td>E 4 + 0000 0 00 0 1</td>
</tr>
<tr>
<td>N I 0000 0 00 0 1</td>
</tr>
<tr>
<td>C I 0000 0 00 100 10 0 1</td>
</tr>
<tr>
<td>Y I 0000 0 00 100 10 0 1</td>
</tr>
<tr>
<td>2 + 0000000000 000 000 1 00 10 1 1 1 1</td>
</tr>
<tr>
<td>I 0000000000 000 000 1 00 10 1 1 1 1</td>
</tr>
<tr>
<td>I 0000000000000000000000000000000000000000</td>
</tr>
<tr>
<td>1 0 10 1 10 0 11 11 0 11 0 00 1 1 0 1 1 1 1 1</td>
</tr>
<tr>
<td>I 0000000000000000000000000000000000000000</td>
</tr>
</tbody>
</table>

Predicted Probability is of Membership for 1
The Cut Value is .50
Symbols: 0 = 0
1 = 1
Each Symbol Represents .5 Cases.
ROC Curve and AUC

Figure 6. ROC Curve (Gen Y and non-Gen Y Data)

Table 32

Area Under the Curve (Gen Y and non-Gen Y Data)

<table>
<thead>
<tr>
<th>Test Result</th>
<th>Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supervision</td>
<td>.768</td>
</tr>
<tr>
<td>Natofwork</td>
<td>.762</td>
</tr>
<tr>
<td>Comm</td>
<td>.757</td>
</tr>
</tbody>
</table>

The test result variable(s): supervision, natofwork, comm has at least one tie between the positive actual state group and the negative actual state group. Statistics may be biased.
AUC = .768 indicates that this model has fair accuracy in separating teacher who are staying and teacher who are leaving with supervision as the predictor variable. AUC = .762 indicates that this model has good accuracy in separating teacher who are staying and teacher who are leaving with nature of work (natofwork) as the predictor variable. AUC = .757 indicates that this model has fair accuracy in separating teacher who are staying and teacher who are leaving with communication (comm) as the predictor variable.

**Odds Ratio and Effect Size**

Table 33 summarizes the raw score binary logistic regression coefficients, Wald statistics, and the estimated change in odds of leaving for the associated predictor variables along with a 95% confidence interval (C.I.). The full model showed the Wald statistic was significant at $p < .05$ for predictor variable communication (comm).

The odds ratio is a measure of effect size. Within the model generated by analyzing non-Gen Y data, three out of the nine predictor variables (supervision, natofwork, and communication) were statistically significant in predicting teacher contract renewal. For each whole step of increase in satisfaction under the supervision facet, a teacher is .855 times more likely to leave (14.5% less likely to leave) with a 95% CI [.736, .993] where $p = .040$. For each whole step of increase in satisfaction under the natofwork (nature of work) facet, a teacher is .766 times more likely to leave (23.4% less likely to leave) with a 95% CI [.602, .975] where $p = .030$. Lastly, for each whole step of increase in satisfaction under the comm (communication) facet, a teacher is .846 times more likely to leave (15.4% less likely to leave) with a 95% CI [.722, .991] where $p = .038$. 

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### Table 33

**Variables in the Equation (Gen Y and non-Gen Y Data)**

<table>
<thead>
<tr>
<th>Step 1&lt;sup&gt;a&lt;/sup&gt;</th>
<th>B</th>
<th>S.E.</th>
<th>Wald</th>
<th>df</th>
<th>Sig.</th>
<th>Exp(B)</th>
<th>95% C.I. for EXP(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>pay</td>
<td>.173</td>
<td>.095</td>
<td>3.304</td>
<td>1</td>
<td>.069</td>
<td>1.188</td>
<td>(.987, 1.431)</td>
</tr>
<tr>
<td>promotion</td>
<td>.101</td>
<td>.082</td>
<td>1.541</td>
<td>1</td>
<td>.214</td>
<td>1.107</td>
<td>(.943, 1.299)</td>
</tr>
<tr>
<td>supervision</td>
<td>-.157</td>
<td>.076</td>
<td>4.235</td>
<td>1</td>
<td>.040</td>
<td>.855</td>
<td>(.736, .993)</td>
</tr>
<tr>
<td>fringe bene</td>
<td>-.115</td>
<td>.091</td>
<td>1.607</td>
<td>1</td>
<td>.205</td>
<td>.891</td>
<td>(.746, 1.065)</td>
</tr>
<tr>
<td>contreward</td>
<td>-.101</td>
<td>.099</td>
<td>1.037</td>
<td>1</td>
<td>.309</td>
<td>.904</td>
<td>(.745, 1.098)</td>
</tr>
<tr>
<td>op cond</td>
<td>.026</td>
<td>.081</td>
<td>.100</td>
<td>1</td>
<td>.752</td>
<td>1.026</td>
<td>(.875, 1.202)</td>
</tr>
<tr>
<td>coworkers</td>
<td>.039</td>
<td>.101</td>
<td>.152</td>
<td>1</td>
<td>.697</td>
<td>1.040</td>
<td>(.854, 1.267)</td>
</tr>
<tr>
<td>nat of work</td>
<td>-.266</td>
<td>.123</td>
<td>4.689</td>
<td>1</td>
<td>.030</td>
<td>.766</td>
<td>(.602, .975)</td>
</tr>
<tr>
<td>comm</td>
<td>-.168</td>
<td>.081</td>
<td>4.319</td>
<td>1</td>
<td>.038</td>
<td>.846</td>
<td>(.722, .991)</td>
</tr>
<tr>
<td>Constant</td>
<td>8.125</td>
<td>2.672</td>
<td>9.246</td>
<td>1</td>
<td>.002</td>
<td>3378.996</td>
<td></td>
</tr>
</tbody>
</table>

<sup>a</sup> Variable(s) entered on step 1: pay, promotion, supervision, fringe bene, contreward, op cond, coworkers, nat of work, comm.

The prediction equation generated with the coefficients from Table 33 is $\log\left(\frac{Y}{1-Y}\right) = 8.125 + .173 x_1 + .101 x_2 - .157 x_3 - .115 x_4 - .101 x_5 + .026 x_6 + .039 x_7 - .266 x_8 - .168 x_9$, where $Y$ is the probability of leaving the school. Expressed in terms of the variables from the analysis, the logistic equation is $\log\left(\frac{Y}{1-Y}\right) = 8.125 + .173 \text{pay} + .101 \text{promo} - .157 \text{supervision} - .115 \text{fringe bene} - .101 \text{contreward} + .026 \text{op cond} + .039 \text{coworkers} - .266 \text{nat of work} - .168 \text{comm}$. 

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CHAPTER FIVE: DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

Discussion

The purpose of this quantitative, correlational study was to examine motivation and hygiene factors as they relate to the contract renewal of Gen Y and non-Gen Y teachers working at international schools in Asia. To accomplish the purpose of the study, three research hypotheses were proposed. Each hypothesis explored a different population group (Gen Y, non-Gen Y, and combined Gen Y and non-Gen Y).

Research Null Hypothesis 1

H$_{01}$: The variables (pay, promotion, supervision, fringe benefits, performance based rewards, operating procedures, coworkers, nature of work, and communication) do not significantly predict the contract renewal of Gen Y teachers working at international schools in Asia.

Only one out of the nine predictor variables, communication, was statistically significant in predicting teacher contract renewal after analyzing the Gen Y sample. In relation to the theoretical framework of this study, Herzberg et al. (1959) stated that communication is a hygiene factor that can demoralize staff members if not implemented openly and clearly. The result of this study supported De Nobile and McCormick’s (2008) findings that strong correlations existed between job satisfaction and communications from administrators. However, De Nobile and McCormick’s research was not limited to Gen Y teachers. This study’s finding supported Armer’s (2011) result that moderate relationship existed between communication and job satisfaction. Similarly, Armer’s research was not limited to Gen Y teachers.
Research Null Hypothesis 2

$H_0^2$: The variables (pay, promotion, supervision, fringe benefits, performance based rewards, operating procedures, coworkers, nature of work, and communication) do not significantly predict the contract renewal of non-Gen Y teachers working at international schools in Asia.

Two out of the nine predictor variables (supervision and nature of work) were statistically significant in predicting teacher contract renewal after analyzing the non-Gen Y sample. These results agreed with Coley’s (2009) assertion that Gen Y educators’ wants and needs were very different from those of non-Gen Y teachers. Also supporting this study’s results, collaborative groups and support from administrators increased retention rate for Baby Boomer and Gen X teachers (Greenebaum, 2009). Connected to the nature of work predictor variable, Greenebaum (2009) reported that development of the teacher identity during pre-service increased retention rate. This study did not support Hughes’ (2012) study that higher retention rates for Baby Boomer and Gen X teachers were tied to improvements in salaries, teacher workloads, and parent and student participation and cooperation levels.

Research Null Hypothesis 3

$H_0^3$: The variables (pay, promotion, supervision, fringe benefits, performance based rewards, operating procedures, coworkers, nature of work, and communication) do not significantly predict the contract renewal of all teachers working at international schools in Asia.

Three out of the nine predictor variables (supervision, nature of work, and communication) were statistically significant in predicting teacher contract renewal after analyzing the combined sample of Gen Y and non-Gen Y data. This study’s results backed Rice’s (2014) statement that poor support from the principal was a major factor for teachers not renewing their contracts. In agreement with this study’s results, Mielke & Frontier (2012) stated
that leadership coupled with negative administrative decisions would deflate morale. In another study, support from supervisors was one of the factors that best predicted job satisfaction (Lasseter, 2013). Armer (2011) and Butler (2014) also reported a statistically significant relationship between job satisfaction and supervision.

Another statistically significant predictor of teacher retention was nature of work. In addition to a worker’s sense of purpose, pride in the job, and enjoyment (Spector, 1985), nature of work also included teaching innovation, increased competency, teacher autonomy, control, challenge, variety and workload (Wagner & French, 2010). Supporting this study’s results, autonomy within the classroom was correlated to job satisfaction (Lasseter, 2013). With contradictory results, Armer (2011) reported that job satisfaction and the nature of work did not have a statistically significant relationship. However, the subjects of the study were limited to only middle and high school science teachers.

The results of this study supported De Nobile and McCormick’s (2008) and Armer’s (2011) conclusions that job satisfaction and communication were related. Also supporting this study’s results, satisfaction with supervisors’ communication skills led to higher growth in satisfaction and retention (Rajesh & Suganthi, 2013).

One interesting result that warrants explanation is the pay factor for the combined Gen Y and non-Gen Y data. While p = .069 is not statistically significant when alpha = .05, this is very close to the threshold for significance. Interestingly, the generated model is predicting that for each point of increase under the pay factor, there is an 18.8% increase in the likelihood to leave. This result is counter-intuitive to the notion that higher pay should lead to higher retention rates. A reason for this outcome may be due to the demographics of the research sample. Many of the teachers taking this survey are from non-profit schools that may also be faith-based. Teachers
who choose to work at non-profit, faith-based schools do not usually use pay as a factor for deciding to relocate overseas.

**Conclusion**

In the two-factor theory (Herzberg et al., 1959), factors motivating workers are independent to factors creating dissatisfaction. Of the six motivation factors (achievement, recognition, work itself, responsibility, advancement, and growth), only the work itself factor was shown to be statistically significant in predicting contract renewal in two (non-Gen Y and combined) out of the three data sets. Out of the seven hygiene factors (company policies, supervision, relationships with colleagues and supervisors, physical work conditions, salary, status, and job security), only the supervision factor was shown to be statistically significant in predicting contract renewal of non-Gen Y teachers in two (non-Gen Y and combined) out of the three data sets. Although the communication factor was statistically significant in predicting contract renewal of Gen Y teachers, this factor is not addressed in Herzberg’s Two-Factor Theory. After analyzing the three data sets (Gen Y, non-Gen Y, and combined) using binary logistic regression, only one motivation factor and one hygiene factor within Herzberg’s Two-Factor Theory is statistically significant in the context of this study.

While there are numerous qualitative studies on teacher retention, teacher attrition, and teacher persistence, (Fox & Certo, 1999; Borman & Dowling, 2008; Hudson, 2009), quantitative studies of the same topics are not as abundant. Moreover, a specific subset of these topics addressing teachers by generation (Gen Y and non-Gen Y) is even more rare. This study contributed to the body of knowledge by finding specific predictors (supervision, nature of work, and communication) that increase the likelihood of contract renewal.
Coley (2009) stated that factors affecting the motivation of Gen Y teachers are very different from non-Gen Y teachers. In this context, this study also added to the body of knowledge through quantitative results. Based on meaningful and statistically significant results, Gen Y teachers’ intentions to stay were influenced by communication. In contrast, non-Gen Y teachers’ intentions to stay were influenced by supervision and nature of work.

Inevitably, Gen Y teachers will make up the majority of the workforce around the world. While many studies exist to describe characteristics of Gen Y individuals, literature are not abundant in exploring motivation and hygiene factors of Gen Y teachers, especially in the international school context. In research that did focus on Gen Y teachers within school environments, Black (2010) and Walmsley (2011) described Gen Y individuals as digital natives, family centered, team oriented, and attention craving. Not surprisingly, all of these characteristics involve being a part of communication with others. The results of this study’s analysis on the Gen Y data set also found the communication variable as statistically significant.

Gen Y teachers grew up as digital natives in an environment where social interactions through cyberspace are intrinsic to their nature. Collaboration, information sharing, and acknowledgement of their physical presence are fundamental to the core values of Gen Y individuals. School administrators need to be aware that Gen Y teachers need communication in both directions. From leaders to Gen Y teachers, communication needs to be frequent and useful. In the other direction, administrators need to allow Gen Y educators to have meaningful input into school operations.

In exploring the non-Gen Y data, statistical significance results were found in the supervision and nature of work variables. Typically, many non-Gen Y (Baby Boomers and Gen X) educators are in positions of leadership (e.g. principal, curriculum director, special education)
because of the many years of experience in the teaching profession. However, if non-Gen Y teachers are still working within the classrooms, positive views of their nature of work and supervisors (Greenebaum, 2009) are good reasons they will choose to stay at a particular school. With years of work experience, non-Gen Y teachers will have the discernment to pick supervisors they feel are most competent and empowering. Non-Gen Y teachers’ vast work experience also means they witnessed factors within schools that enable success. With this prior knowledge, Non-Gen Y teachers will stay in schools where the mission and vision of the organization aligns with their own.

In general, correlations between variables do not necessarily lead to causation. However, in this study, meaningful connections can be made from statistically significant predictor variables to the criterion variable. Literature, much of which was reviewed in this study, exists to support the link between teacher satisfaction and teacher retention. Furthermore, research exist both in qualitative and quantitative formats. Although this researcher cannot definitively state that certain predictor variables led to contract renewal, but with copious supporting literature and the strongest possible statistics used (strengthened with model verification through ROC and AUC results), this researcher believes that job satisfaction in certain areas will lead to increases in contract renewal rates.

**Implications**

Within the scope of international schools, increasing contract renewal rates translated to cost savings and lowering the disruption of transitioning new teachers (Watlington, Shockley, Guglielmino, & Felsher, 2010). As Baby Boomers retire and Gen X educators mature, administrators cannot ignore factors that increase the job satisfaction of Gen Y teachers. This study showed for each step of increase in the communication facet a Gen Y teacher was 29.1%
less likely to leave. The questions within the JSS addressing communication revealed tangible ways to increase a Gen Y teacher’s satisfaction: sharing clear goals, updating staff members of what is going on in school, and clearly explaining work assignments. According to this study’s results, the converse is also true: not accomplishing the suggestions mentioned above will increase a Gen Y teacher’s likelihood to leave.

As for non-Gen Y teachers, for each whole step of increase in satisfaction under the supervision facet, a teacher is 25.6% less likely to leave. For each whole step of increase in satisfaction under the nature of work facet, a teacher is 43.1% less likely to leave. The questions within the JSS addressing supervision revealed ways to increase a non-Gen Y teacher’s satisfaction: having likeable supervisors, having competent and objective administrators, and having supervisors that show interest in the feeling of staff members. Concrete ways to increase a non-Gen Y teacher’s satisfaction in the area of nature of work will include: making teachers feel their job is meaningful, fostering teachers’ pride in their job, and constructing an environment where their job is enjoyable. According to the binary logistic regression model, a decrease in satisfaction in the communication and nature of work facet will cause an increase likelihood of leaving. Therefore, if these recommendations are not addressed, retention rates will decrease. When both Gen Y and non-Gen Y teachers’ survey results were combined and analyzed, not surprisingly, the three statistically significant predictors (supervision, nature of work, communication) turned out to be a union of the separate results.

At the theoretical level, this study fills the gap in literature by contributing quantitative results on teacher retention pertaining to Gen Y and non-Gen Y teachers working at international schools in Asia. At the operational level, this study gives heads of schools practical information to increase contract renewal rates. Principals and administrators of international schools will
need to address all nine facets (pay, promotion, supervision, fringe benefits, performance based rewards, operating procedures, coworkers, nature of work, and communication) of the JSS to run schools successfully. However, from the results of this study, special attention needs to be paid to the area of supervision, nature of work, and communication in order to promote higher teacher renewal rates. The consequences of declining satisfaction in these areas will cause lower retention rates.

**Limitations**

One of the limitations of this study was the sample demographics. Participants were teachers in contract renewal years working at international schools in Asia. While the study differentiated the results between Gen Y and non-Gen Y teachers, generalization to teachers working at public schools in the United States would be a stretch. Still pertaining to demographics, 44% of respondents worked for less than two years at their current school and 28% of the respondents worked for six or more years at their current school. Another area of limitation was using a sample that was not randomized. Even though the researcher did not know the specific schools of each study participant, 59% of the fully completed surveys came from those working in China.

The JSS instrument used in this study may not cover all areas that can potentially impact job satisfaction. Another area of concern was the phrasing of the questions within the JSS. More than half the questions asked in the JSS were negatively worded. The reversal may cause participants confusion when answering the survey. While the JSS is a simple survey with 36 questions covering nine facets, four questions addressing each predictor variable may not be adequate. However, due to its extensive use and high internal consistency (Cronbach alpha = .91), the JSS is a valid instrument.
A final area of concern is the sample size used in the study. Addressed in Chapter 3, a minimal requirement for logistical regression is that the sample sizes needed to be at least 10 times as many cases as predictor variables (Peduzzi, Concato, Kemper, Holford, & Feinstein, 1996, Warner 2013). In this study, the combined Gen Y and non-Gen Y group met the minimum requirement of $n = 90$ with 116 data points. However, when the data was separated into Gen Y and non-Gen Y sets, the minimum requirement of $n = 90$ was not met. This study possessed 51 survey results within the Gen Y data set and 65 survey results within the non-Gen Y data set. Vittinghof and McCulloch (2006) demonstrated that with 5-9 events per parameter, the coverage of confidence intervals was acceptable. In the study, nine predictor variables were used. Using such information, if the study has more than $n = 45$ survey results in the data sets, the binary logistic regression statistics can be used.

For a medium effect size with a statistical power of .80 at the .05 alpha level, Warner (2013) recommended a minimum of $N = 153$ participants would be needed for correlational studies. Warner (2013) suggestion of sample size to obtain the statistical power for Pearson’s $r$ did not seem transferrable to logistic regression modeling. The pattern seen in literature using logistic regression (especially among peer-reviewed medical and pharmacology journal articles) was that statistical power of studies are explained by odds ratio and not determined by sample size. Warner (2013, p. 303) stated that Pearson’s $r$ described the strength and direction of the linear predictive relationship between variables. Logistic regression does not use ordinary least squares (OLS) method to obtain its statistics, but rather uses maximum likelihood estimation (MLE) in fitting a statistical model to data.

Warner (2013) only addressed logistic regression with one and two covariates. For studies having many covariates, Warner (2013, p. 1038) suggested using Hosmer and

**Recommendations for Future Research**

Although this study added to the body of knowledge, future ongoing research will continue to be conducted in the areas explored by this study. In relation to this study’s conclusions and limitations, future research can include the following:

1. Replicating this study with a different population from a different region (i.e. international school teachers in Europe or Africa).
2. Replicating this study with teachers working at private schools in the United States.
3. Finding another job satisfaction survey instrument to explore other areas of job satisfaction not covered by JSS.
4. Including additional factors such as gender, age, or specialty into the data analysis.
5. Conducting a longitudinal, multi-year study to track job satisfaction in relation to contract renewal.
REFERENCES


APPENDIX A

Liberty University Institutional Review Board
Application for the Use of Human Research Participants

IRB Application #2155

I. APPLICATION INSTRUCTIONS

• To submit a protocol, complete each section of this form and email it and any accompanying materials (i.e. consent forms and instruments) to irb@liberty.edu. For more information on what to submit and how, please see our website at: www.liberty.edu/irb. Please note that we can only accept our forms in Microsoft Word format.
• In addition, please submit one signed copy of the fourth page of the protocol form, which is the Investigator's Agreement. Also submit the second page if a departmental signature is required for your study. Signed materials can be submitted by mail, fax (434-522-0506), or email (scanned document to irb@liberty.edu). Signed materials can also be submitted via regular mail or in person to our office: Green Hall, Suite 1837.
• Please be sure to use the grey form fields to complete this document; do not change the format of the application. You are able to move quickly through the document by using the "Tab" key.
• Note: Applications with the following problems will be returned immediately for revisions: 1) Grammar/spelling/punctuation errors, 2) A lack of professionalism (lack of consistency/clarity) on the application itself or any supporting documents, 3) Incomplete applications. Failure to minimize these errors will cause delays in your processing time.

II. BASIC PROTOCOL INFORMATION

Protocol Title: Job Satisfaction and Dissatisfaction Factors Influencing Contract Renewal of Generation Y and Non-Generation Y Teachers Working at International Schools in Asia

Principal Investigator (PI): Hoi Wah Benny Fong

Professional Title: Graduate Student
School/Department: School of Education
Mailing Address: 793 Dean Place
Telephone: 510-931-6444
LU Email: hbfong@liberty.edu

Check all that apply: ☐ Faculty ☑ Graduate Student ☐ Undergraduate Student ☐ Staff

This research is for: ☐ Class Project ☐ Master’s Thesis ☑ Doctoral Dissertation

☐ Faculty Research ☐ Other (describe):

Have you defended and passed your dissertation proposal? ☑ Yes ☐ No ☐ N/A

If no, what is your defense date?

Co-Researcher(s):

Faculty Advisor: Dr. Leldon Nichols

School/Department: School of Education

Telephone: 423-991-3592
LU Email: lwnichols@liberty.edu
April 28, 2015

Hoi Wah Benny Fong  
IRB Exemption 2155.042815: Job Satisfaction and Dissatisfaction Factors Influencing Contract Renewal of Generation Y and Non-Generation Y Teachers Working at International Schools in Asia

Dear Benny,

The Liberty University Institutional Review Board has reviewed your application in accordance with the Office for Human Research Protections (OHRP) and Food and Drug Administration (FDA) regulations and finds your study to be exempt from further IRB review. This means you may begin your research with the data safeguarding methods mentioned in your approved application and no further IRB oversight is required.

Your study falls under exemption category 46.101(b)(2), which identifies specific situations in which human participants research is exempt from the policy set forth in 45 CFR 46:101(b):

(2) Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless:
(i) information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; and (ii) any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.

Please note that this exemption only applies to your current research application, and any changes to your protocol must be reported to the Liberty IRB for verification of continued exemption status. You may report these changes by submitting a change in protocol form or a new application to the IRB and referencing the above IRB Exemption number.

If you have any questions about this exemption or need assistance in determining whether possible changes to your protocol would change your exemption status, please email us at irb@liberty.edu.

Sincerely,

Fernando Garzon, Psy.D.  
Professor, IRB Chair  
Counseling

(434) 592-4054  
Liberty University | Training Champions for Christ since 1971
Dear First Last

As a graduate student in the School of Education at Liberty University, I am conducting research as part of the requirements for a doctorate in educational leadership. The title of my research project is Job Satisfaction and Dissatisfaction Factors Influencing Contract Renewal of Generation Y and Non-Generation Y Teachers Working at International Schools in Asia, and the purpose of my research is to explore the relationship between satisfaction and dissatisfaction factors to the contract renewal of Gen Y and non-Gen Y teachers working at international schools in Asia.

I am writing to request your permission to contact members of your staff to invite them to participate in my research study. Participants will be asked to complete an anonymous, online survey. Participants will be presented with informed consent information prior to participating. Taking part in this study is completely voluntary, and participants are welcome to discontinue participation at any time.

Thank you for considering my request. If you choose to grant permission, please respond by email to hbfong@liberty.edu.

Sincerely,

Hoi Wah Benny Fong
Liberty University Doctoral Candidate
Dear [Recipient]:

As a graduate student in the School of Education at Liberty University, I am conducting research as part of the requirements for a doctoral degree in educational leadership.

You will be asked to take a brief survey consisting of 36 questions. It should take approximately 10-15 minutes for you to complete the survey. Your participation will be completely anonymous, and no personal identifying information will be required.

To participate, please go to https://www.surveymonkey.com/s/fongstudy, click on the link provided, and complete the survey. A consent document is located on the webpage prior to the survey. The consent document contains additional information about my research, but you do not need to sign and return it. Please click on the survey link at the end of the consent information to indicate that you have read the consent information and would like to take part in the survey.

Sincerely,

Hoi Wah Benny Fong
Liberty University Doctoral Candidate
Dear Educator,

As a graduate student in the School of Education at Liberty University, I am conducting research as part of the requirements for a doctoral degree in educational leadership. Two weeks ago, an email was sent to you inviting you to participate in a research study. This follow-up email is being sent to remind you to complete the survey if you would like to participate and have not already done so. The deadline for participation is June 1, 2015.

If you choose to participate, you will be asked to take a brief survey consisting of 36 questions. It should take approximately 10-15 minutes for you to complete the survey. Your participation will be completely anonymous, and no personal identifying information will be required.

To participate, please go to https://www.surveymonkey.com/s/fongstudy, click on the link provided, and complete the survey. A consent document is located on the webpage prior to the survey. The consent document contains additional information about my research, but you do not need to sign and return it. Please click on the survey link at the end of the consent information to indicate that you have read the consent information and would like to take part in the survey.

Sincerely,

Hoi Wah Benny Fong
Liberty University Doctoral Candidate