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**HUMAN CAPITAL MANAGEMENT WITHIN THE FEDERAL GOVERNMENT  
UTILIZING GENERATIONAL STRATIFICATION WITH A FOCUS ON  
GENERATION Y**

by

Ian Nathaniel Barford  
B.S. December 2002, Ohio State University  
M.S. September 2006, Naval Postgraduate School

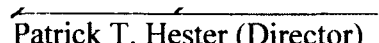
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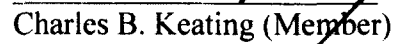
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Approved by:

  
Patrick T. Hester (Director)

  
Charles B. Keating (Member)

  
Edward P. Markowski (Member)

  
Pilar Pazos (Member)

## **ABSTRACT**

# **HUMAN CAPITAL MANAGEMENT UTILIZING GENERATIONAL STRATIFICATION WITHIN THE FEDERAL GOVERNMENT WITH A FOCUS ON GENERATION Y**

Ian Nathaniel Barford  
Old Dominion University, 2014  
Director: Dr. Patrick T. Hester

With many individuals in the Baby Boomer generation eligible to retire, many open positions will need to be filled by other Baby Boomers, or those from Generation X or Generation Y. Private industry has taken note of this and has been exploring workplace differences between Generation Y, Generation X, and Baby Boomers. Unfortunately for the federal government, data shows Generation Y is also separating; specifically quitting for unknown reasons. Understanding this apparent dichotomy between Generation Y and Generation X and Baby Boomer federal government employees is a current knowledge gap within the federal government's strategic human capital management focus.

From 2002 – 2013, OPM surveyed the federal workforce eight times using the following six indices: Leadership and Knowledge Management, Results-Oriented Performance Culture, Talent Management, Job Satisfaction, Global Satisfaction, and Employee Engagement. These indices provide a single, consistent definition of human capital management for the federal government. Generational data from these studies exist but has yet to be stratified and reported. This dissertation quantitatively analyzed

these workplace indices from 2006 through 2013 using OPM's studies and showed there are generational differences within the federal government domain in an effort to improve human capital management within the federal government.

The results show a continued decline in federal government employee attitudes. Generation Y's workplace attitudes for all indices (except for Job Satisfaction where the effect sizes were very small) were the highest among generations within the individual years and over time. Generation Y ranked Job Satisfaction consistently the lowest within each year and decreased over time. Generation Y's steep separation and the only positive quitting trend lines, coupled with this study's steep inter-organizational movement and the only positive quitting trend lines, affirms that Generation Y is separating from their organizations and quitting the federal government at a higher rate compared to Generation X and Baby Boomers. There is some empirical evidence that associates Generation Y's low Job Satisfaction scores to separating and quitting. If this downward trend continues, the effect sizes will inevitably increase and the link between the Job Satisfaction index and Generation Y leaving will become very apparent.

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This dissertation is dedicated to my family - especially to my wife and my two little men

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## CHAPTER I: INTRODUCTION

Successful organizations benefit from effective human capital management. All workforces are diverse, dynamic and ever changing. The United States federal government (herein referred to as the federal government) is no different, with nearly 2.1 million federal employees<sup>1</sup> (OPM, 2013b). With hundreds of agencies within the federal government and their respective workforces ebbing and flowing based on individual agency demands, federal government managers need a way to logically group their diverse workforce in order to effectively manage. There are multitudes of ways to categorize employees in order to evaluate and understand them. This dissertation presents a categorization method using birth years as the sole demographic identifier and group employees into generations.

The three most prevalent working generations in the federal government are, from eldest to youngest: Baby Boomers, Generation X, and Generation Y. Currently the Baby Boomers and Generation Y are exiting the federal workforce for very different reasons (OPM, 2013d). Baby Boomers comprise 48% of the federal workforce (OPM, 2013a) and Generation X and Generation Y are naturally slated to fill these soon-to-be-open positions due to the large wave of Baby Boomer retirements. GAO (2011b) reports that “approximately 30 percent of (the) Department of Defense’s (DOD’s) civilian workforce—and 90 percent of its senior leaders—will be eligible to retire by March 31, 2015” (p. 1).

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<sup>1</sup> Actual total is 2,038,038 as of March 31, 2014.

Unfortunately Generation Y is also separating; specifically quitting the federal government for unknown reasons. U.S. OPM (OPM, 2013d) data (as measured from October 1, 2000 through September 30, 2013) show the following:

- Since fiscal year (FY) 2002, Generation Y's separation percentages (which include: agency transfer out, quitting, retirement, reduction in force, termination or removal, death, or other separation) are increasing at a higher rate than Generation X and Baby Boomers.
- Since FY 2002, Generation Y's quitting percentages have increased over time, inversely proportional to Generation X and Baby Boomers.

In January 2001, the Government Accountability Office (GAO) promoted strategic human capital management as a government-wide high-risk area (GAO, 2001b).

David M. Walker, Comptroller General of the United States, said in his testimony:

*High-performing organizations in the private and public sectors have long understood the relationship between effective 'people management' and organizational success. However, the federal government has often acted as if federal employees were costs to be cut rather than assets to be valued. After a decade of government downsizing and curtailed investments in human capital, it is becoming increasingly clear that today's federal human capital strategies are not appropriately constituted to meet the current and emerging needs of the federal government and the nation's citizens. An organization's people—its human capital—are its most critical asset in managing for results. Strategic human capital management is a pervasive challenge in the federal government. At many*

*agencies, human capital shortfalls have contributed to serious programmatic problems and risks (GAO, 2001b, p. 1).*

In 2002, GAO issued a report entitled “Department of Defense’s Plans to Address the Workforce Sizes and Structure Challenges.” The report summarizes a ten year window (from 1989 to 1999) where the government downsized its workforce by “almost 50 percent to about 124,000 personnel as of September 30, 1999. As a result of the years of personnel reductions and the increasing competition for replacement talent, DOD concluded that its acquisition workforce was on the verge of a crisis—retirement-driven talents drain (GAO, 2002c, p. 2).

In 2014, thirteen years later, human capital management continues to be a high-risk area for the federal government. In 2002, OPM, “the central human resources planners for the Federal Government” (OPM, 2013g) began conducting a study of the federal workforce. Since then, this study has been published eight times, with the most recent being 2013. Generational data from these studies exist but has yet to be stratified and reported. This dissertation analyzed the six workplace indices within these studies to compare Generation Y to Generation X and Baby Boomers in an effort to improve human capital management within the federal government.

## **PROBLEM STATEMENT**

With many individuals in the Baby Boomer generation eligible to retire, many open positions will need to be filled by other Baby Boomers, or those from Generation X or Generation Y. Private industry has taken note of this and has been exploring

workplace differences between Generation Y, Generation X, and Baby Boomers (Cennamo & Gardner, 2008; Costanza, Badger, Fraser, Severt, & Gade, 2012; D'Amato & Herzfeldt, 2008; De Meuse & Mlodzik, 2010; Dries, Pepermans, & DeKerpel, 2008; Hess & Jepsen, 2009). 2013 marked the first time the federal government, via OPM's government-wide management report, published data comparing generations in the workforce using surveys (OPM, 2013a). This report presented information for 2013 only, does not have statistical testing comparing generations, and does not provide a trend over time, rather a single snapshot in time. OPM recommends that "agencies can use this information to appropriately plan an approach to decrease the satisfaction gaps within their workforce. Potentially, a multidimensional approach may prove most beneficial as what works best for one generation may not work for another" (p. 15). Fortunately the notion of exploring distinct approaches for different generations is being published. Unfortunately, the lack of statistical testing and single point-in-time data may not paint the actual generational difference picture needed for federal government managers to implement human capital plans. Another point of consideration is an OPM updated database, called FedScope<sup>2</sup>, which houses federal civilian workforce characteristics. Using FedScope, there is data showing an increasing trend of Generation Y separating, specifically quitting the federal government (OPM, 2013c). Understanding this apparent dichotomy between Generation Y and Generation X and Baby Boomer federal government employees is a current knowledge gap within the federal government's strategic human capital management focus.

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<sup>2</sup> <http://www.fedscope.opm.gov>

This dissertation proposes to merge this gap with private industry's theory that generational differences do exist. The results will provide federal government managers with a robust picture on whether there are truly differences between Generation Y, Generation X, and Baby Boomers. This research aims to fill this gap utilizing OPM's studies consisting of six federal government workplace indices specified in 5 CFR 250.202. This research will utilize these indices for a generational comparison of Generation Y to Generation X and Baby Boomers.

To date, there is one published article that "explores the difference in assigned levels of workplace motivation and happiness between federal government workforce members of Generation Y versus Generation X and Baby Boomers" (Barford & Hester, 2011, p. 63). Barford and Hester (2011) built upon private industry research to begin an initial framing of understanding the Generation Y workforce within the federal government. However, the sample size of 18 was much too small to generalize within the entire federal government domain.

There are three logical scenarios when trying to make a cross-domain comparison between understanding generational workplace attributes within private industry and the federal government using previously collected data. These include:

- 1) Employees within a specific generation, regardless of whether they work for organizations in private industry or the federal government, have the same workplace attributes and are uninfluenced by their organizations. Therefore, generational workplace attributes are identical across each domain.
- 2) Employees within a specific generation are influenced by their organizations while working in either private industry or the federal government. Therefore,

generational workplace attributes are specific and different for each of the two domains.

- 3) Employees within a specific generation are influenced by their organizations while working for any organization regardless of either domain.

Organizational structures vary within private industry and the federal government; therefore, generational workplace attributes may be different within each domain.

As stated above, the federal government has a generational comparison knowledge gap and this information void prohibits a cross-domain comparison; therefore it is inappropriate to assume logical scenario one is true. Future research may prove otherwise.

Generational comparison research in private industry has not disproven the theory that there are differences between Generation Y, Generation X, and Baby Boomers (Cennamo & Gardner, 2008; Costanza, Badger, Fraser, Severt, & Gade, 2012; D'Amato & Herzfeldt, 2008; De Meuse & Mlodzik, 2010; Dries, Pepermans, & DeKerpel, 2008; Hess & Jepsen, 2009). Given that no generational comparison data exists within the federal government, logical scenario two cannot be deemed inappropriate. This dissertation will focus on the second logical scenario and will provide Generation Y workplace attributes within private industry and report on OPM's six indices within the federal government.

Future research can attempt to address a single domain with multi-organizations and cross-domain comparisons to extend generational theory. Because of this, logical scenario three is beyond the scope of this dissertation and will not be addressed.

## STUDY MOTIVATION

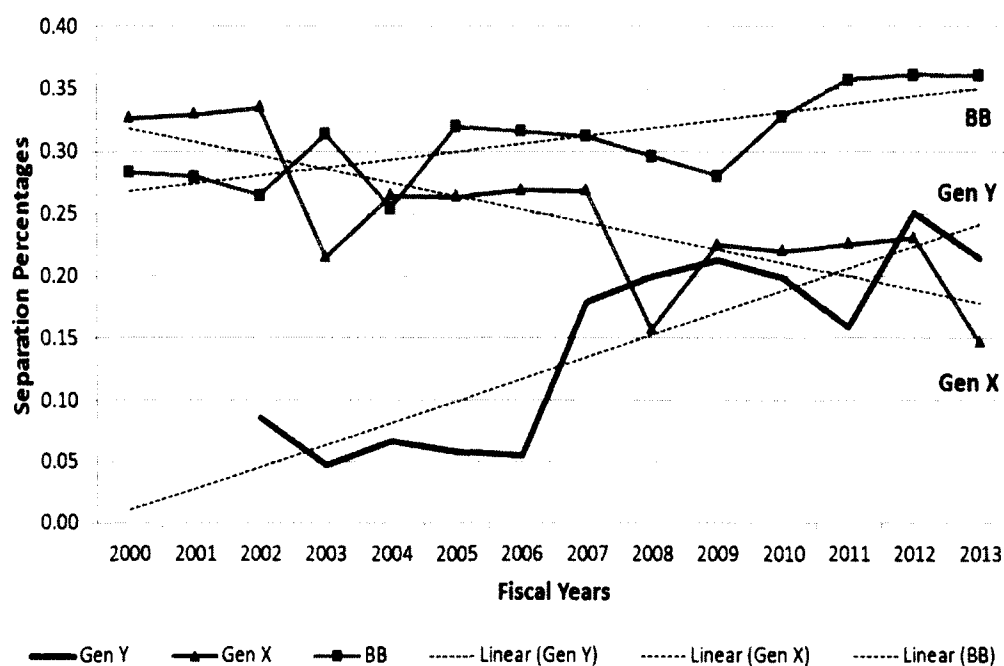
This research started as a casual perplexity of noticing friends and colleagues leaving fairly short careers in the federal government, primarily in the Navy Department of Defense. Most all left to private industry and the curiosity increased as to why so many young people were leaving. This curiosity turned to investigation after a presentation was observed that showed the high average age of employees in regional federal organizations. The recommendations from the presentation simply stated to hire more young people to bring the average age down. To the casual observer, the plan of hiring young people to solve an organization's problem of high workforce average age seemed correct. However, the attrition data shown in Tables 1 and 2, coupled with hiring more Generation Y employees, might lead to the same result; these newly hired employees could possibly leave their government organization, resulting in no net reduction in workforce age. A look into the federal workforce through the OPM lens is needed to substantiate this notion.

An OPM updated database, called FedScope, houses federal civilian workforce characteristics which is publicly available. Using the generational cutoff years outlined in the literature review section of this dissertation (high level cutoffs shown in Appendix A), the following two tables and two figures highlight the unexplained phenomena of Generation Y leaving the federal government. Table 1 shows separation percentages for all three generations from FY 2000 through FY 2013. Separation percentage is the total of the following sub-items divided by the total population: agency transfer out, quitting, retirement, reduction in force, termination or removal, death, or other separation.

**Table 1: Separation Percentages**

	Fiscal Years													
	00	01	02	03	04	05	06	07	08	09	10	11	12	13
Gen Y	NA	NA	.09	.05	.07	.06	.06	.18	.20	.21	.20	.16	.25	.21
Gen X	.33	.33	.33	.21	.26	.26	.27	.27	.16	.23	.22	.23	.23	.15
BB	.28	.28	.26	.31	.25	.32	.32	.31	.30	.28	.33	.36	.36	.36
NOTES														
NA: In FY 2000 and FY 2001, Generation Y individuals were not 18 years old and therefore not in the federal government workforce														

Figure 1 shows the graphical representation of Table 1. Included are the generational linear trendlines (denoted by the dashed lines) with each generation's name near the line. Each trend line is shown for graphical illustration of the line slope and not for predicting outcomes; therefore, the coefficients of determination are not shown. The slope for Generation Y is positive along with Baby Boomers, contrary to Generation X. The Baby Boomers are retiring in large waves and that is the largest contributing factor to the positive slope (OPM, 2013c). Not knowing why Generation Y's slope is positive provides some compelling reasons to investigate.



**Figure 1: Separation from the Federal Government with Trendlines**

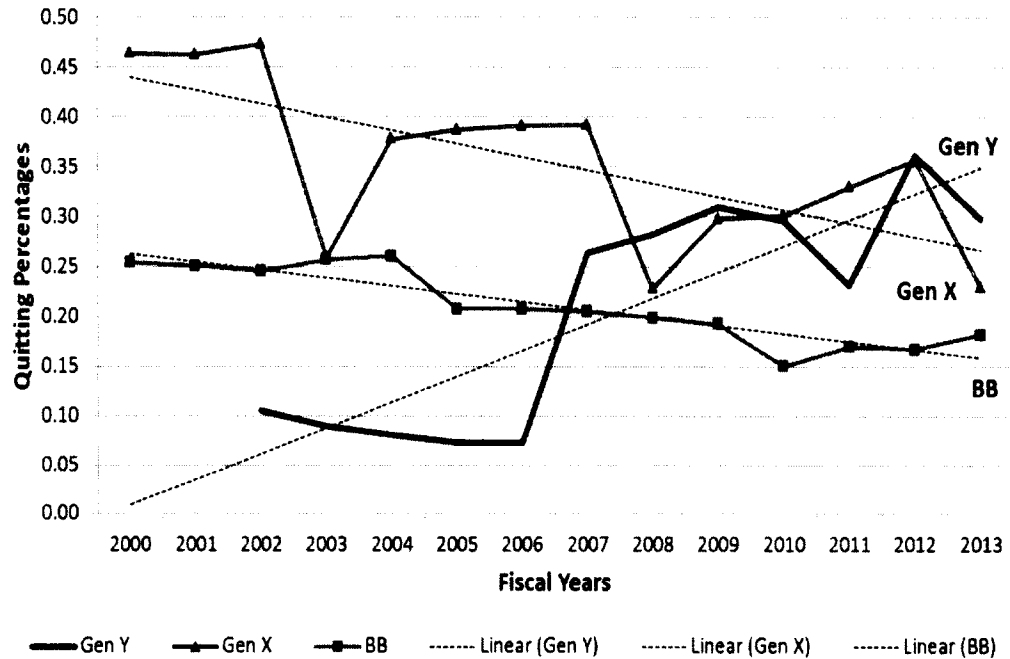
Investigating why Generation Y is separating more as time goes on requires a deeper look at the seven separation sub-items: agency transfer out, quitting, retirement, reduction in force, termination or removal, death, or other separation. Of the seven sub-items, only three can be categorized in terms of an individual making a conscious decision to leave their organization – agency transfer out, quitting, or other separation, such as leaving for undisclosed reasons. Agency transfer out is defined as leaving one government organization for another, however, still being employed by the federal government and does not provide insight to Generation Y leaving the federal government. Quitting is the only definitive sub-item that provides more detailed information into Generation Y's total separation from the federal government. The other four, excluding retirement because Generation Y is not currently eligible, are agency

decisions and not individuals making those decisions. Table 2 shows the quitting percentages for all three generations from FY 2000 through FY 2013.

**Table 2: Quitting Percentages**

	Fiscal Years													
	00	01	02	03	04	05	06	07	08	09	10	11	12	13
Gen Y	NA	NA	.11	.09	.08	.07	.07	.26	.28	.31	.30	.23	.36	.30
Gen X	0.46	.46	.47	.26	.38	.39	.39	.39	.23	.30	.30	.33	.36	.23
BB	.25	.25	.25	.26	.26	.21	.21	.21	.20	.19	.15	.17	.17	.18
NOTES														
NA: In FY 2000 and FY 2001, Generation Y individuals were not 18 years old and therefore not in the federal government workforce														

Figure 2 shows the graphical representation of Table 2. Included are the generational linear trendlines (denoted by the dashed lines) with each generation's name near the line. Each trend line is shown for graphical illustrations of the line slope and not for predicting outcomes; therefore, the coefficients of determination are not shown. The slope for Generation Y is again positive, while Baby Boomers and Generation X are both negative. At this time only guesses can be made as to why Generation Y workers are quitting their jobs and completely leaving the federal government.



**Figure 2: Quitting the Federal Government with Trendlines**

## RESEARCH QUESTIONS AND HYPOTHESES

The problem statement outlines the focus areas of this dissertation. Using this as the baseline, three research questions and six hypotheses were formulated based on OPM's reported survey data. OPM (2006b) outlines the employee metrics (quantitative scoring via OPM's surveys) for four index scores: Leadership and Knowledge Management, Results-Oriented Performance Culture, Talent Management, and Job Satisfaction. Two additional index scores are Employee Engagement (OPM, 2006a; OPM, 2008; OPM, 2010; OPM, 2011a; OPM, 2012a; OPM, 2013a) and Global Satisfaction (OPM, 2011a). Global Satisfaction not only includes an index but two sub-categories called "Stayers" and "Leavers" (Ibid). These six individual index scores, or grouped together called indices, are the basis for answering the research questions and hypotheses outlined in Tables 3 and 4.

In order to gain practical knowledge about the Generation Y workforce within the federal government, the following three questions with null and alternate hypotheses were formulated and presented in Tables 3 and 4, respectively. These questions and hypotheses aim to provide insight into Generation Y working within the federal government.

**Table 3: Research Questions**

<b>Research Questions</b>	
<b>Q1</b>	Are there overall differences of all generations within the federal government utilizing OPM's six workplace indices from the years 2010 through 2013?
<b>Q2</b>	Are there differences in any given year (from 2010 through 2013) between generations within the federal government utilizing OPM's six workplace indices?
<b>Q3</b>	Are there overall differences between generations within the federal government utilizing OPM's six workplace indices from the years 2010 through 2013?

**Table 4: Research Hypotheses**

<b>Research Questions</b>	<b>Research Hypotheses</b>	
Q1	H <sub>01</sub> (Index #)	There are no overall differences of all generations within the federal government utilizing OPM's six workplace indices from the years 2010 through 2013.
	H <sub>11</sub> (Index #)	There are overall differences of all generations within the federal government utilizing OPM's six workplace indices from the years 2010 through 2013.
Q2	H <sub>02</sub> (Index #)-Year	There are no differences in any given year (from 2010 through 2013) between generations within the federal government utilizing the six workplace indices.
	H <sub>12</sub> (Index #)-Year	There are differences in any given year (from 2010 through 2013) between generations within the federal government utilizing the six workplace indices.
Q3	H <sub>03</sub> (Index #)-(Generation)	There are no overall differences between generations within the federal government utilizing the six workplace indices from the years 2010 through 2013.
	H <sub>13</sub> (Index #)-(Generation)	There are overall differences between generations within the federal government utilizing the six workplace indices from the years 2010 through 2013.

## **SIGNIFICANCE OF THE STUDY**

The answers to the three research questions regarding whether there are differences between Generation Y and Generation X and Baby Boomer federal government employees will enable human capital management leaders to formulate strategic human capital management plans. If any of the three research questions are

answered with a yes, this research will present the data needed to begin a foundation for understanding what those differences are. At the very least, regardless of the answers to the research questions, this research aims to present a foundation for the advancement of the overall awareness of how Generation Y employees interact within the federal government, compared to Generation X and Baby Boomers. It is hoped that this research may lead to a foundation for implementation of new policy, retention practices, and methodologies in the federal government for Generation Y employees. The results of this research could have a potentially larger impact than expected if strategies are specifically tailored to Generation Y's workplace attributes, which may reduce attrition.

This research analyzed OPM's six workplace indices to compare Generation Y to Generation X and Baby Boomers in an effort to improve human capital management within the federal government.

## **CONCEPTUAL FRAMEWORK**

The research focused on merging private industry research on generational difference theory with the federal government's current generational difference knowledge gap. The dissertation focused on characterizing Generation Y while working for the federal government using OPM's six workplace indices utilizing their survey data between the years of 2010 through 2013. The analyses of the six indices were binned by age and placed within Generation Y, Generation X, Baby Boomers, or two inseparable dual generation categories for statistical data reduction. One way analyses of variance (ANOVA) were performed on all three research questions. Research question one utilized the independent variable "year" and the dependent variable "index score."

Research questions two and three utilized the independent variable “age” consisting of six sub-levels where the respondent chose their age based on six answer choices (further binned to Generation Y, Generation X, Baby Boomers, or two dual generation categories, depending on the year) and the dependent variable called “index score.” The results of the analysis answered each of the three research questions.

## **LIMITATIONS AND DELIMITATIONS**

There are two research limitations and three delimitations outlined within this dissertation. The first limitation is five of the six workplace indices within OPM’s surveys were created using a logic/content approach rather than a psychometric approach (Federal Employee Viewpoint Survey Team, personal communication, January 2, 2014) and, as a result, the survey instruments were not validated. Furthermore, the data reductions of all six workplace indices were reported without any type of statistical testing. A side note is the Employee Engagement index used a model and was created using an exploratory and confirmatory factor analysis approach.

The second limitation is this research analyzed the survey data from four of the eight possible survey years (2010 through 2013), omitting 2002, 2004, 2006, and 2008. 2002 data were not included because OPM has it archived and it is no longer maintained (T. Lewis, personal communication, December 3, 2013). 2004 data are also excluded due to the age question’s answer choices not matching survey years 2010 through 2013. This misalignment did not allow each generation to be binned the same and would skew the data analysis. 2006 and 2008 data were not included in the primary analyses, but were

included in the excursion analysis (outside of the scope of this dissertation but analyzed the add depth to the primary analysis as described in the assumptions section of chapter one). The reason 2006 and 2008 were excluded is due to both not having the same questions set for the Employee Engagement Index. Additionally for primary and excursion analysis completeness, OPM survey information from 2006, 2008, 2010, 2011, 2012, and 2013 are outlined in this dissertation.

The first delimitation bounds the research questions to the government domain only. This research did not aim to provide an overarching generalization encompassing the government and private industry domains. It is unknown whether employees within a specific generation, regardless of whether they work for organizations in private industry or the federal government, have the same workplace attributes and are uninfluenced by their organizations. Moreover, this research did not aim to provide multi-organizational, single domain results. This research assumed employees within a specific generation are influenced by their organizations while working in either private industry or the federal government. Therefore, generational workplace attributes are specific and different for each of the two domains.

The second delimitation bounds the data used in this research from one data source, OPM. There were no other data sources that collect information on federal government workers workplace disposition correlating responses with an age range (FLRA, 2013). Fortunately, this single data source had a very large sample size to extract meaningful information from. OPM's surveys from 2010 through 2013 have over 1.47 million respondents (OPM, 2010; OPM, 2011a; OPM, 2012a; OPM, 2013a).

The third delimitation was selecting Generation Y's birth year window (1983 to 1995) and Generation X's ending birth year (1982) to provide the least amount of indistinguishable data for generational comparisons. It is important to note that Sullivan, Forret, Carraher, & Mainiero (2009) note that "there has been no agreement among scholars about which birth years should be used to classify individuals into generations" (p. 295). Based on this assertion, the chosen dates were within acceptable ranges identified in the literature. Literature is split on the reported bounds of generations:

- Generation Y is reported as beginning between anywhere from 1977 to 1983 (Broadbridge, Maxwell, & Ogden, 2007; Cennamo & Gardner, 2008; Crumpacker & Crumpacker, 2007; Dries, Pepermans, & DeKerpel, 2008; Hess & Jepsen, 2009; Hill & Lee, 2012; Holley, 2008; Hubbard & Singh, 2009; Kim, Knight, & Crutsinger, 2009; Manuel, 2002; Palese, Pantali, & Saiani, 2006; Shih & Allen, 2007; Smola & Sutton, 2002; Sullivan, Forret, Carraher, & Mainiero, 2009; Weingarten, 2009; Zemke, Raines, & Filipczak, 2000).
- Generation Y's ending birth years also have reported variations in literature ending anywhere from 1994 to 2003 (Broadbridge, Maxwell, & Ogden, 2007; Crumpacker & Crumpacker, 2007; Dries, Pepermans, & DeKerpel, 2008; Hess & Jepsen, 2009; Hill & Lee, 2012; Holley, 2008; Hubbard & Singh, 2009; Kim, Knight, & Crutsinger, 2009; Shih & Allen, 2007; Smola & Sutton, 2002; Weingarten, 2009; Zemke, Raines, & Filipczak, 2000).
- Generation X's ending birth years also have variations in literature ranging anywhere from 1976 to 1983 (Beutell, 2013; Cennamo & Gardner, 2008;

Crumpacker & Crumpacker, 2007; Dries, Pepermans, & DeKerpel, 2008; Egri & Ralston, 2004; Hess & Jepsen, 2009; Hubbard & Singh, 2009; Karp, Sirias, & Arnold, 1999; Kupperschmidt, 2000; Manuel, 2002; Palese, Pantali, & Saiani, 2006; Sayers, 2007; Smola & Sutton, 2002; Weingarten, 2009).

## **ASSUMPTIONS**

There are two assumptions outlined within this dissertation. Assumption one is that people from different generations have distinct workplace attributes (Cennamo & Gardner, 2008; De Meuse & Mlodzik, 2010) and that employees within a specific generation are influenced by their organizations while working in either private industry or the federal government. Generational comparison research in private industry has not disproven the theory that there are differences between generations (Cennamo & Gardner, 2008; Costanza, Badger, Fraser, Severt, & Gade, 2012; D'Amato & Herzfeldt, 2008; De Meuse & Mlodzik, 2010; Dries, Pepermans, & DeKerpel, 2008; Hess & Jepsen, 2009). This dissertation merges this gap within the federal government underpinned with private industry's theory that generational differences do exist.

The second assumption is that performing two sets of analyses on either end of Generation Y's reported birth years (due to the literature inconsistencies) will add magnitude to the results. This dissertation analyzed data in two phases: primary and excursion. Primary analysis used data from the years of 2010 through 2013. The excursion analyses are outside the scope of answering this dissertation's research questions but were performed to add depth to the primary analysis. There are two distinct excursion analyses. The first was to analyze all six workplace indices (exactly the same

as the primary analysis) from the year 2006 through 2013 even though 2006 and 2008 have a limited data set on the Employee Engagement index. The second excursion analysis was an exact repeat of the primary analysis but with different generational year categorization. This excursion utilized Generation Y's beginning birth year to 1977 (the opposite end of the literature review spectrum) and Generation X's ending birth year to 1976 (to match with Generation Y's beginning birth year). Included in this second excursion, data from 2006 through 2013 was also re-analyzed (as in the first excursion) using the new generational year categorization.

## **SUMMARY**

The remainder of the dissertation is organized into four chapters. Chapter two examines the literature within human capital management focusing on GAO research, OPM research, and generational research within private industry. Chapter three discusses the research participants, instruments, data collection, generalizability, data analysis, validity, reliability, and ethical considerations. Chapter four reports the results of the primary and excursion analyses. Chapter five summarizes the dissertation, provides empirical findings, discusses theoretical implications, and recommendations for future research.

## **CHAPTER II: LITERATURE REVIEW**

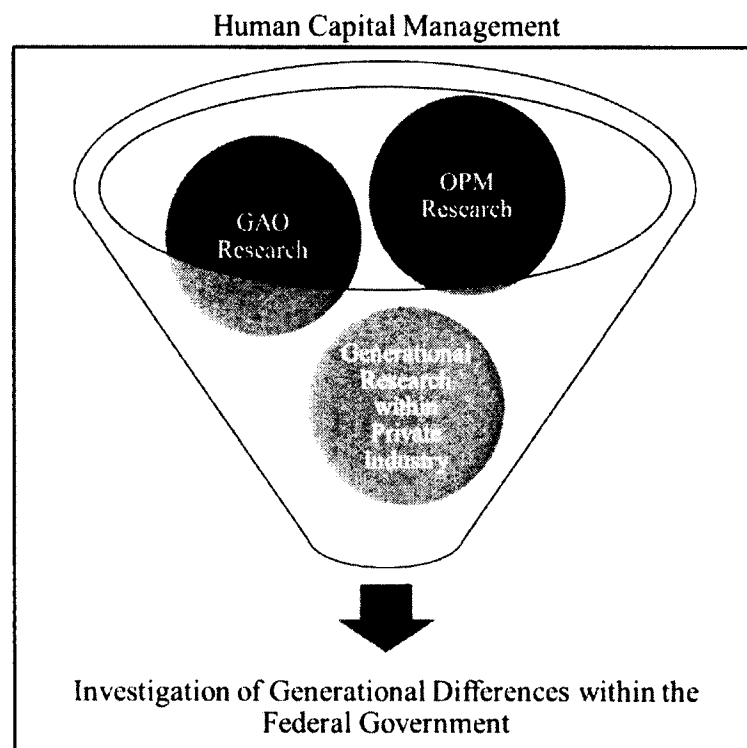
### **INTRODUCTION**

This chapter is an examination of the literature within human capital management focusing on GAO Research, Generational Research within Private Industry, and OPM Research. This literature review presents an underpinning for addressing the following three research questions:

- 1) Are there overall differences of all generations within the federal government utilizing OPM's six workplace indices from the years 2010 through 2013?
- 2) Are there differences in any given year (from 2010 through 2013) between generations within the federal government utilizing OPM's six workplace indices?
- 3) Are there overall differences between generations within the federal government utilizing OPM's six workplace indices from the years 2010 through 2013?

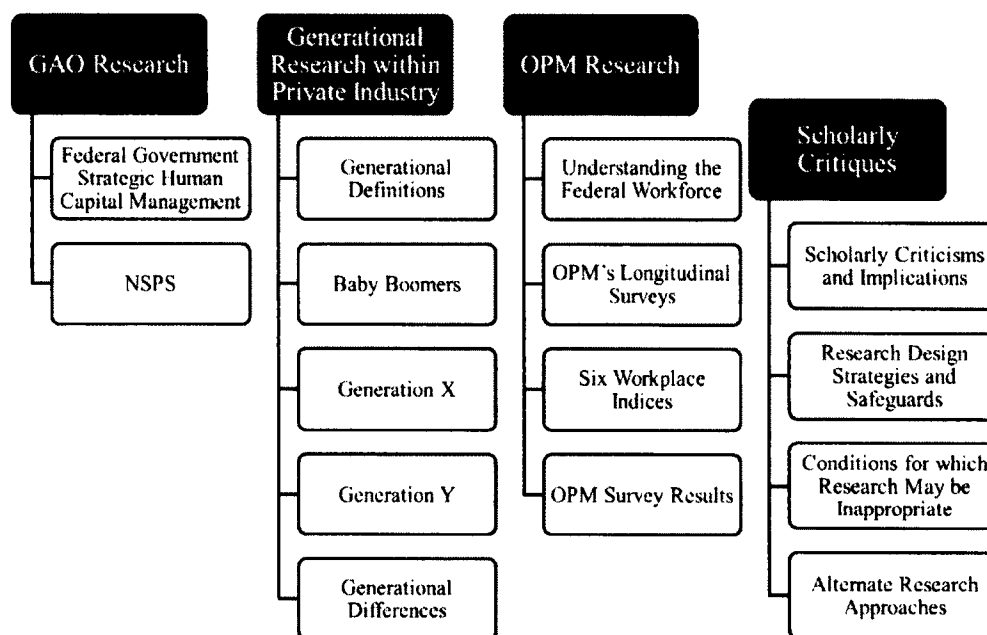
The three bodies of literature researched within human capital management (GAO Research, Generational Research within Private Industry, and OPM Research) are shown in Figure 3. The first body of literature, GAO Research, outlines the federal government's struggle to develop, implement, and sustain a working strategic human capital management plan for all federal employees. Using this information, the literature review looked outside the federal government (much like GAO (2005) reported looking

outside the United States) into the private industry domain. The second body of literature, Generational Research within Private Industry, defines each of the three biggest current working generations and details research on generational separation. Once the utility of generational difference research in private industry is identified, the third body of literature, OPM Research, seeks to identify existing data within the federal government in order to test generation difference research within the federal government.



**Figure 3: Bodies of Literature Researched**

Each of the three bodies of literature was then decomposed into separate literature review subsections, shown in Figure 4. Figure 4 shows the bodies of literature, their associated subsections, and an additional Scholarly Critique literature review. The three bodies of literature under evaluation are GAO Research, Generational Research within Private Industry, and OPM Research which have several associated subsections that will be evaluated in detail.



**Figure 4: Bodies of Literature and Associated Subsections**

The body of literature, GAO Research, has two subsections 1) Federal Government Strategic Human Capital Management and 2) NSPS. The body of literature,

Generational Research within Private Industry, has five subsections: 1) Generational Definitions, 2) Baby Boomers, 3) Generation X, 4) Generation Y, and 5) Generational Differences. The third body of literature, OPM Research, has four subsections: 1) Understanding the Federal Workforce, 2) OPM's Surveys, 3) Six Workplace Indices, and 4) OPM Survey Results. In addition to the bodies of literature, Scholarly Critiques on the research concept will be presented with the following four focus areas: 1) Scholarly Criticisms and Implications, 2) Research Design Strategies and Safeguards, 3) Conditions for which Research May be Inappropriate, and 4) Alternate Research Approaches.

## **GAO RESEARCH**

The first body literature, GAO Research, outlines a 13 year struggle to develop, implement, and sustain a human a working strategic human capital management plan. One effort, namely the National Security Personnel System (NSPS), was implemented in tandem to continue federal government efforts to understand the federal workforce. These two sections highlight the need for a better way to understand the workforce and implement a human capital management plan. This body of literature has two subsections: 1) Federal Government Strategic Human Capital Management and 2) NSPS.

## **FEDERAL GOVERNMENT STRATEGIC HUMAN CAPITAL MANAGEMENT**

The GAO, originally called the General Accounting Office, changed its name to the Government Accountability Office in 2004 under the GAO Human Capital Reform

Act (GAO, 2013). In 2004, Comptroller General of the U.S., David M. Walker, remarked regarding the current status of the newly named GAO:

*The scope of GAO's work today includes virtually everything the federal government is doing or thinking about doing anywhere in the world. GAO looks at the results that departments and agencies are getting with the taxpayer dollars they receive. GAO regularly consults with lawmakers and agency heads on ways to make government work better. (GAO) provide(s) Congress with professional, objective, fact-based, nonpartisan, and non-ideological information when it is needed. (GAO keeps) a close eye on several long-term challenges whose impact has yet to be fully felt.*  
(Walker, 2004, pp. 1-2)

One of those long-term challenges is strategic human capital management with a focus on the retiring wave of Baby Boomers. In addition to the name change in 2004, the GAO became decoupled from the federal employee pay system (GAO, 2013). This was a very important step for the GAO to remain fully independent from all other federal agencies which the GAO reports on.

In August 2001, human capital was placed at the top of President Bush's management agenda (GAO, 2002b). The same year, a testimony was given from Henry L. Hinton, the Managing Director of Defense Capabilities and Management, where he spoke about the problem of departing employees with no current plan of backfill:

*In the wake of extensive downsizing over the last decade, agency workforces are experiencing significant imbalances in terms of shape,*

*skills, and retirement eligibility, with the likelihood of a huge loss of personnel to retirement over the next few years and a resulting decline in the ability to accomplish agency missions. Yet until recently, there has been very little action taken to address this problem. (GAO, 2001c, p. 1)*

In 2001, GAO released a report that spoke about older federal workers' demographic trends and how they pose challenges for employers and workers.

*According to Census Bureau estimates, in 2019, when the last of the Baby Boomers have reached age 55, nearly 29 percent of the total U.S. population will be age 55 and older, compared with 21 percent today. These developments pose potential problems for employers and the economy generally, as the possible loss of many key experienced workers could create shortages in skilled worker and managerial occupations, with adverse effects on productivity and economic growth. (GAO, 2001a, p. 1)*

Strategic human capital management gained traction within Congress in 2001 via hearings and statistics about the impending retirement of the Baby Boomers. It is important to backfill when a position is vacated (if the position is still needed) but the lost corporate knowledge base departing was the bigger issue the federal government was preparing to deal with. In the same timeframe, GAO urged keeping those people who would replace the retiring Baby Boomers within the federal government. "The Administration and the Congress should pursue selected legislative opportunities to put new tools and flexibilities in place that will help agencies attract, motivate, and retain employees—both overall and, especially, in connection with critical occupations" (GAO, 2001d, p. 2). The GAO was not the only agency tasked with focusing on strategic human

capital management. In October 2001, the Office of Management and Budget “assessed agencies’ progress in addressing their individual human capital challenges as part of its management scorecard in preparation of the fiscal year 2003 budget” (GAO, 2002b, p. 2). “In December 2001, OPM released a human capital balanced scorecard to assist agencies in responding to the OMB scorecard” (Ibid, p. 2). In another testimony to Congress, David M. Walker said:

*The federal government’s human capital weaknesses did not emerge overnight and will not be quickly or easily addressed. Committed, sustained, and inspired leadership and persistent attention on the behalf of all interested parties will be essential if lasting changes are to be made and the challenges we face successfully addressed. (Ibid, p. 2)*

The following year, GAO investigated six civilian agencies that were proactively changing their human capital plans by updated and developing new strategies to address the impending retirements (GAO, 2002a). Unfortunately, the agencies are “finding it difficult to predict and respond to future needs given the rapid pace of change occurring within acquisition and the lack of reliable data on workforce characteristics” (Ibid, p. 5).

*DOD has initiated efforts to acquire the systems and tools needed to develop accurate and accessible data about the workforce and to make projections for the future. It is also striving to make a cultural shift from viewing human capital as a support function to viewing it as a mission function in order to provide its strategic planning effort with the level of importance and leadership attention it deserves. (Ibid, p. 3)*

In 2003, David M. Walker points out “the basic problem, which continues today, has been the long-standing lack of a consistent strategic approach to marshaling, managing, and maintaining the human capital needed to maximize government performance and assure its accountability” (GAO, 2003, p. 1). Additionally, GAO reported “leading public-sector organizations have found that strategic human capital management must be the centerpiece of any serious change management initiative to transform the culture of government agencies” (GAO, 2004b, p. 2).

In 2004, Congress passed the GAO Human Capital Reform Act which combines diverse initiatives to motivate the workforce. The GAO and the National Commission on the Public Service Implementation Initiative co-hosted a forum in 2004. The outcome was “more progress in addressing human capital challenges was made in the last 3 years than in the last 20, and significant changes in how the federal workforce is managed are underway” (GAO, 2004a, p. 1). These significant changes have yet to be realized and GAO reported one potential reason: “a ‘one size fits all’ approach to human capital management is not appropriate given the range of the challenges and demands government faces” (Ibid, p. 2).

In the same year as the GAO Human Capital Reform Act, the Federal Workforce Flexibility Act of 2004 “requires the head of each agency to establish, in consultation with OPM, a comprehensive management succession program to provide training for employees and develop future managers for the agency” (GAO, 2005, p. 1).

In 2005, GAO reported that other countries’ federal governments are experiencing similar human capital management issues (GAO, 2005). The GAO, proposed core

tenants by evaluating other countries' (i.e. New Zealand, Canada, United Kingdom, and Australia) initiatives (Ibid). GAO (2005) further noted that:

*Strategic human capital management (is still designated) as a high-risk area, one that threatens the federal government's ability to serve Americans effectively, because federal human capital strategies are still not appropriately constituted to meet current and emerging challenges or drive the transformations necessary for agencies to meet these challenges. More specifically, agencies need to identify, develop, and select the appropriate leaders, managers, and workforce to meet 21st century challenges and one critical step is through effective succession planning and management. Leading organizations go beyond a succession planning approach that focuses on simply replacing individuals and engage in broad, integrated succession planning and management efforts that focus on strengthening both current and future organizational capacity. (p. 1)*

A few years later as the federal government prepared for the global financial crisis, OPM was designated "the federal government's human capital leader" (GAO, 2007a, p. 2). The GAO then began to use OPM's government-wide Federal Human Capital Surveys "to assist agencies and OPM in better understanding specific and government-wide agency workforce management conditions and practices in the areas of leadership, performance culture, and talent" (GAO, 2006, p. 2). OPM reported from its 2006 survey that:

*Baby Boomers are likely to begin retiring in large numbers in the near future, while at the same time the labor force is growing at a much slower rate. Thus, those leaving jobs will outnumber those seeking jobs, further challenging the federal government to ensure that it recruits, hires, trains, develops, and motivates the talent it needs to achieve meaningful results and to be competitive with the private sector. (GAO, 2007a, p. 1)*

GAO (2007b) adds that “today and in the near term, the federal government is facing a retirement wave and with it the loss of leadership and institutional knowledge at all levels. (Federal) agencies face a fiercely competitive market for talent” (p. 1). A year later, GAO (2008) reported specifically that “with more than 50 percent of its civilian personnel becoming eligible to retire in the next few years, DOD may find it difficult to fill certain mission-critical jobs with qualified personnel” (p. 1). GAO (2008) highlights the DOD’s submitted human capital strategic plan:

*In January 2006, the National Defense Authorization Act for Fiscal Year 2006 directed DOD to develop and submit...a strategic plan to shape and improve the DOD civilian employee workforce. DOD was to develop and submit a plan of action to address identified gaps, including specific recruiting and retention goals and strategies on how to train, compensate, and motivate civilian employees. Overall, DOD’s civilian human capital strategic plan does not meet most statutory requirements. For example, the plan does not include an assessment of current mission-critical competencies, future critical skills and competencies needed, gaps between the current and future needs, or specific recruiting and retention*

*goals, even though these elements are required by the 2006 act. DOD officials acknowledged that the plan they submitted to the committees is incomplete. (p. 2)*

GAO (2009a) points out that “(it’s) important for federal agencies to focus attention on management practices that increase the level of employee engagement (in order to) compete for talent with the private sector” (p. 1). The GAO is foreshadowing a very real possibility that employees will look for employment elsewhere outside of the federal government. GAO released a report in 2009 laying out their management improvement initiatives framework utilizing strategic objectives and performance indicators. Key objectives were: “enhance retention strategies to ensure they are responsive to employees’ values (and) develop annual action plans that address key improvement areas based on results of employee feedback surveys” (GAO, 2009c, pp. 6-7).

GAO (2011b) reported that once again the National Defense Authorization Act, this time for the fiscal year 2010 (which was submitted in 2009):

*Required DOD to assess the skills, competencies, and gaps; projected workforce trends. (GAO’s ) review of DOD’s 2009 workforce plans found that... most of the remaining requirements, however, were partially addressed—including key requirements such as conducting competency gap analyses, identifying funding needs, and assessing progress. (p. 2)*

Concurrently in 2009 a hiring initiative was announced by the Robert Gates, the Secretary of Defense, to “Increase the size of the acquisition workforce (to) rebuild the capacity and skill sets that had been eroded in the years that followed the downsizing of

the workforce in the 1990s” (GAO, 2011a, p. 3). Because of this initiative, the 2010 acquisition workforce strategic plan “identified an objective of increasing the civilian acquisition workforce, which totaled about 118,000 civilians as of September 2009, by 20,000 personnel by fiscal year 2015” (Ibid, p. 3).

The hiring initiative of 2009 was stopped two years later when the “the Secretary of Defense announced in March 2011 a hiring freeze for DOD’s overall civilian workforce, but he indicated that the initiatives using the Defense Acquisition Workforce Development Fund would continue” (Ibid, p. 4).

Within the past decade of the federal government trying to implement a strategic human capital management plan, NSPS was conceived, implemented, and then revoked for various reasons. The following section provides a brief snapshot of this.

## **NSPS**

In response to the human capital management high risk area, the DOD started the implementation process for NSPS in 2004 and by 2006 the first employees were converted into the system (GAO, 2009b). “NSPS is a human capital system for DOD civilian employees. NSPS significantly redesigned the rules, regulations, and processes that govern the way in which civilian employees are hired, compensated, and promoted within the department” (Ibid, p. 1). In 2009, several negative events were highlighted, namely: “the negative impact of NSPS on employees’ motivation and morale” (Ibid, p. 1).

*In February 2009, the Chairman of the House Committee on Armed Services and the Chairman of the committee’s Subcommittee on Readiness*

*urged DOD to halt conversions to NSPS, highlighting concerns over a lack of transparency and widespread discontent with the system.*

*Subsequently, in March 2009, DOD and OPM announced that they would suspend any further conversions of organizations to NSPS pending the outcome of a review of the system led by the Defense Business Board. In July 2009, the Defense Business Board presented the Secretary of Defense with the report of its review of NSPS, which included recommendations to initiate a reconstruction of the system and to continue the moratorium on conversions to NSPS until reconstruction is complete. In October 2009, the National Defense Authorization Act for Fiscal Year 2010 contains provisions that would terminate NSPS and convert DOD civilian employees currently under the system to previously existing civilian personnel systems no later than January 1, 2012. (Ibid, p. 1)*

One of the key reasons the NSPS did not work was “(the) DOD (did) not monitor the safeguards’ implementation, decision makers in DOD lack(ed) information that could be used to determine whether the department’s actions are effective and whether the system (was) being implemented in a fair, equitable, and credible manner” (Ibid, p. 17). Additionally, back in 2004, GAO (2004a) warned that “A ‘one size fits all’ approach to human capital management is not appropriate given the range of the challenges and demands government faces” (p. 2).

All NSPS employees were reverted back to the General Schedule (GS) primary pay and classification system. GAO (2009b) reported:

*The GS system was created in 1949, when most federal positions involved clerical work or revolved around the execution of established, stable processes. The need for human capital reform regarding these systems (GS) has been the subject of a number of previous GAO reviews. (p. 6)*

Today, many federal employees are on the GS system, which pays employees primarily based on tenure with an ancillary performance-based factor. An antiquated system at best is now the primary means of rewarding the federal government's most values assets, its workforce. In closing, a daunting fact: "Approximately 30 percent of DOD's civilian workforce—and 90 percent of its senior leaders—will be eligible to retire by March 31, 2015" (GAO, 2011b, p. 1).

Since 2001, 13 years ago, the federal government has struggled to identify a cohesive human capital strategic plan to address the impending retirement wave of Baby Boomers. An in-depth succession plan has yet to have a solution methodology.

Fortunately, a study to understand the federal workforce during the promoted government awareness of human capital management is being conducted by OPM. OPM's government-wide study is in the form of surveys and has been conducted and reported eight times during the years of 2002, 2004, 2006, 2008, 2010, 2011, 2012, and 2013. As the only study:

*Used to measure the federal workforce (with age as a demographic question) ... (the survey is) a tool that provides a snapshot of employees' perceptions of whether, and to what extent, conditions characterizing successful organizations are present in their agencies. Survey results provide valuable insight into the challenges agency leaders face in*

*ensuring the Federal Government has an effective civilian workforce.*

(OPM, 2012a, p. 2)

An understanding of those who were surveyed via a logically grouping of generations is presented in the following section.

## **GENERATIONAL RESEARCH WITHIN PRIVATE INDUSTRY**

The second body of literature, Generational Research within Private Industry, looks outside the federal government into the private industry domain, describes the three largest current working generations, and details research on generational separation. This body of literature has five subsections: 1) Generational Definitions, 2) Baby Boomers, 3) Generation X, 4) Generation Y, and 5) Generational Differences.

### **GENERATIONAL DEFINITIONS**

A generation is an identifiable group, or cohort, which shares birth years, age, location, and significant life events at critical developmental stages (Kupperschmidt, 2000; Sullivan, Forret, Carraher, & Mainiero, 2009). Generations are categorized as those born within the same historical time and culture (Palese, Pantali, & Saiani, 2006; Sullivan, Forret, Carraher, & Mainiero, 2009). Birth rate, along with historical events, defines each generation (Crumpacker & Crumpacker, 2007; Sullivan, Forret, Carraher, & Mainiero, 2009). These cohorts develop a unique pattern of behavior based on these common experiences (Kupperschmidt, 2000; Sullivan, Forret, Carraher, & Mainiero, 2009).

Based on literature, there are two prime elements that distinguish a generation: the birth rate and significant life events (Crumpacker & Crumpacker, 2007; Cennamo & Gardner, 2008; Kupperschmidt, 2000; Palese, Pantali, & Saiani, 2006; Sayers, 2007; Smola & Sutton, 2002). When the birth rate increases and remains steady, that signifies the beginning of a new generation. When the birth rate of a newly formed generation begins to decline, that marks the end of a generation (Crumpacker & Crumpacker, 2007). Each generation has its own set of significant life events. Each generation shares the same experiences, or is aware of them, as they advance and mature through different stages of life although not every person in a generation personally experiences these defining events (Crumpacker & Crumpacker, 2007). Weingarten (2009), however, draws caution to stereotyping individuals based on generational attributes. The next three sections discuss the three current working generations, namely Baby Boomers, Generation X, and Generation Y.

## **BABY BOOMERS**

The eldest of the current working generations, called the Baby Boomers, has a strong majority of literature reported birth years between 1946 and 1964 (Cennamo & Gardner, 2008; Crumpacker & Crumpacker, 2007; Dries, Pepermans, & DeKerpel, 2008; Egri & Ralston, 2004; Hess & Jepsen, 2009; Hubbard & Singh, 2009; Palese, Pantali, & Saiani, 2006; Smola & Sutton, 2002; Weingarten, 2009; Westerman & Yamamura, 2007). Baby Boomers had significant life events that shaped their values including the 1960's social revolution, the women's movement, President John F. Kennedy/ Martin Luther King Jr./ Senator Robert F. Kennedy assassinations, landing on the moon,

development of televisions, the Vietnam War, the Watergate scandal, and high inflation of the 1980's (Crumpacker & Crumpacker, 2007; Dries, Pepermans, & DeKerpel, 2008; Sullivan, Forret, Carraher, & Mainiero, 2009; Weingarten, 2009).

Baby Boomers are classified with such workplace attributes as team orientation and optimism (Hess & Jepsen, 2009; Sullivan, Forret, Carraher, & Mainiero, 2009) expecting the best from life (Smola & Sutton, 2002; Sullivan, Forret, Carraher, & Mainiero, 2009). Prior to the 1980's, this generation knew of prosperity and fortunate outcomes (Kupperschmidt, 2000) and being the center of their parents' world (Crumpacker & Crumpacker, 2007; Sullivan, Forret, Carraher, & Mainiero, 2009), much like Generation Y has been accustomed to (Shih & Allen, 2007). During the recession in the 1980's, businesses downsized and reorganized, which conveyed to the Boomers that a lifetime career with one organization may not be a certainty (Mirvis & Hall, 1994). Because of this, Baby Boomers were characterized as free agents in the workplace (Kupperschmidt, 2000). Make no mistake though, Baby Boomers are described by Crumpacker & Crumpacker (2007) as highly competitive micromanagers, irritated by lazy employees, and having a positive demeanor towards professional growth.

## **GENERATION X**

The middle cohort of current working generations, Generation X, has a slight variation in reported birth years in literature:

- Beginning anywhere from 1960 to 1965, with the majority of literature pointing to 1965 (Crumpacker & Crumpacker, 2007; Dries, Pepermans, &

DeKerpel, 2008; Egri & Ralston, 2004; Hess & Jepsen, 2009; Hubbard & Singh, 2009; Karp, Sirias, & Arnold, 1999; Palese, Pantali, & Saiani, 2006; Smola & Sutton, 2002; Weingarten, 2009).

- Generation X's ending birth years have a greater discrepancy in literature ranging anywhere from 1976 to 1983 (Beutell, 2013; Cennamo & Gardner, 2008; Crumpacker & Crumpacker, 2007; Dries, Pepermans, & DeKerpel, 2008; Egri & Ralston, 2004; Hess & Jepsen, 2009; Hubbard & Singh, 2009; Karp, Sirias, & Arnold, 1999; Kupperschmidt, 2000; Manuel, 2002; Palese, Pantali, & Saiani, 2006; Sayers, 2007; Smola & Sutton, 2002; Sullivan, Forret, Carraher, & Mainiero, 2009; Weingarten, 2009).
- However, due to Generation Y's chosen birth year starting in 1983, discussed in the delimitations section of Chapter 1, Generation X's ending birth year is strategically chosen to be 1982, within the literature review window. This date was chosen so no time gaps exist between Generation X and Y.

For this generation, the life events that had a profound impact were the Iranian hostage crisis, Iran Contra, introduction of HIV/ AIDS as a pandemic, oral contraceptive pills, 1973 oil crisis, the impeachment of President Richard M. Nixon, introduction of computers / internet, and the Cold War (Crumpacker & Crumpacker, 2007; Dries, Pepermans, & DeKerpel, 2008; Weingarten, 2009). As Generation X matured, so did technology (Cennamo & Gardner, 2008).

This generation grew up with both parents in the workforce, or in a divorced household and, as a result, became known as latchkey kids, becoming independent at a young age (Crumpacker & Crumpacker, 2007; Weingarten, 2009). Smola and Sutton

(2002) paint this generation as feeling social insecurity, rapidly changing surroundings, and a lack of solid traditions. Generation X carried the trend of distancing themselves from companies just as the Boomers did (Dries, Pepermans, & DeKerpel, 2008), making them distrustful of organizations (Westerman & Yamamura, 2007). Generation X entered the workforce competing with the Baby Boomers for jobs during the 1980's recession, which made many cynical towards the older generation (Crumpacker & Crumpacker, 2007).

## **GENERATION Y**

The newest cohort to enter the workforce, Generation Y, also has a large discrepancy of reported birth years in literature.

- Beginning between anywhere from 1977 to 1984 (Anandarajan, Zaman, Dai, & Arinze, 2010; Broadbridge, Maxwell, & Ogden, 2007; Cennamo & Gardner, 2008; Crumpacker & Crumpacker, 2007; Dries, Pepermans, & DeKerpel, 2008; Hess & Jepsen, 2009; Hill & Lee, 2012; Holley, 2008; Hubbard & Singh, 2009; Kim, Knight, & Crutsinger, 2009; Manuel, 2002; Nusair, Parsa, & Cobanoglu, 2011; Palese, Pantali, & Saiani, 2006; Shih & Allen, 2007; Smola & Sutton, 2002; Sullivan, Forret, Carraher, & Mainiero, 2009; Weingarten, 2009; Zemke, Raines, & Filipczak, 2000).
- Generation Y's ending birth years also have reported variations in literature ending anywhere from 1994 to 2003 (Broadbridge, Maxwell, & Ogden, 2007; Crumpacker & Crumpacker, 2007; Dries, Pepermans, & DeKerpel, 2008;

Hess & Jepsen, 2009; Hill & Lee, 2012; Holley, 2008; Hubbard & Singh, 2009; Kim, Knight, & Crutsinger, 2009; Shih & Allen, 2007; Smola & Sutton, 2002; Weingarten, 2009; Zemke, Raines, & Filipczak, 2000).

- However, as discussed in the delimitations section in Chapter 1, this research will establish the birth years between 1983 and 1995. These dates were strategically chosen within the literature window to allow for the least amount of indistinguishable data for generational comparisons.

The events that Generation Y experienced were the fall of the Berlin Wall, the induction of music television (specifically MTV and VH1) into society, Columbine High School shootings, 9/11 terrorist attacks, natural disasters, and the obesity epidemic (Crumpacker & Crumpacker, 2007; Dries, Pepermans, & DeKerpel, 2008). Sujansky (2002) writes that this generation has seen more early on than other cohorts. Possibly the most significant difference this generation possesses over others is the integration of technology into their daily lives and how technology has always been in their world (Martin, 2005; Oblinger, 2003; Weingarten, 2009). Martin (2005) describes Generation Y as independent, confident, and self-reliant. This may be due to the extensive protection and praise given to them throughout their formative years (Crumpacker & Crumpacker, 2007).

As a result, Generation Y exhibits the following workplace attributes:

- *a propensity for working in teams while being collaborative* (Broadbridge, Maxwell, & Ogden, 2007; Burke & Ng, 2006; Crumpacker & Crumpacker,

- 2007; Glass, 2007; Rodriguez & Gregory, 2005; Shaw & Fairhurst, 2008; Wong, Gardiner, Lang, & Coulon, 2008),
- *results-oriented and innovative* (Broadbridge, Maxwell, & Ogden, 2007; Burke & Ng, 2006; King, 2003; Glass, 2007; Shaw & Fairhurst, 2008; Wong, Gardiner, Lang, & Coulon, 2008),
  - *likes to be challenged* (Broadbridge, Maxwell, & Ogden, 2007; Dries, Pepermans, & DeKerpel, 2008; Kim, Knight, & Crutsinger, 2009; Wong, Gardiner, Lang, & Coulon, 2008),
  - *want lifelong learning, including professional development* (Broadbridge, Maxwell, & Ogden, 2007; Cennamo & Gardner, 2008; D'Amato & Herzfeldt, 2008; Rodriguez & Gregory, 2005; Sayers, 2007; Shaw & Fairhurst, 2008; Weingarten, 2009; Wong, Gardiner, Lang, & Coulon, 2008),
  - *want on the job training* (Broadbridge, Maxwell, & Ogden, 2007; Burke & Ng, 2006; Cennamo & Gardner, 2008; Dries, Pepermans, & DeKerpel, 2008; King, 2003; Sayers, 2007),
  - *want to multi-task with technology* (Broadbridge, Maxwell, & Ogden, 2007; Burke & Ng, 2006; Cennamo & Gardner, 2008; Crumpacker & Crumpacker, 2007; Kim, Knight, & Crutsinger, 2009; Glass, 2007; Loughlin & Barling, 2001; Rodriguez & Gregory, 2005; Sayers, 2007; Shaw & Fairhurst, 2008; Shih & Allen, 2007; Smola & Sutton, 2002; Wong, Gardiner, Lang, & Coulon, 2008),
  - *plan their own careers* (Broadbridge, Maxwell, & Ogden, 2007; Kim, Knight, & Crutsinger, 2009; King, 2003; Sayers, 2007; Shaw & Fairhurst, 2008),

- *want a work/life balance* (Broadbridge, Maxwell, & Ogden, 2007; Cennamo & Gardner, 2008; Crumpacker & Crumpacker, 2007; Loughlin & Barling, 2001; Sayers, 2007; Shaw & Fairhurst, 2008; Zemke, Raines, & Filipczak, 2000),
- *want clear direction by management* (Broadbridge, Maxwell, & Ogden, 2007; Glass, 2007; Shaw & Fairhurst, 2008),
- and want salary/bonuses/ promotions based on performance (Broadbridge, Maxwell, & Ogden, 2007; Burke & Ng, 2006; Glass, 2007; Loughlin & Barling, 2001; Sayers, 2007; Wong, Gardiner, Lang, & Coulon, 2008).

Unfortunately Generation Y followed suit and partitioned themselves away from organizations as their two preceding cohorts did (Dries, Pepermans, & DeKerpel, 2008), knowing that lifetime employment in a single organization is scarce nowadays. Generation Y expects to change jobs often during their lifetime (Kim, Knight, & Crutsinger, 2009; Morton, 2002) and will most likely have multiple organizational employment (Broadbridge, Maxwell, & Ogden, 2007; Burke & Ng, 2006; D'Amato & Herzfeldt, 2008; Kim, Knight, & Crutsinger, 2009; King, 2003; Loughlin & Barling, 2001; Sayers, 2007; Shaw & Fairhurst, 2008; Wong, Gardiner, Lang, & Coulon, 2008), especially if their talents are underutilized (Kim, Knight, & Crutsinger, 2009; Weingarten, 2009).

The attributes used to describe Generation Y are not new. As a matter of fact, Generation Y shares attributes with Generation X and Baby Boomers. However, the combination of specified attributes is distinct to Generation Y. This unique combination of attributes makes for a compelling argument to study Generation Y and thus warrant a

separate categorization from the Baby Boomers and Generation X. In order to find out if there are generational differences with the federal government domain, an understanding of the data available and previously collected via OPM surveys is required.

## **GENERATIONAL DIFFERENCES**

There is an assumption that people from different generations have distinct workplace attributes (Cennamo & Gardner, 2008; De Meuse & Mlodzik, 2010). De Meuse & Mlodzik (2010) reviewed 26 peer-reviewed studies and found “few consistent differences among the generations in the workplace” (p. 54). Further analysis showed that “eight of those studies reported some support for generational differences; 18 did not” (Ibid, p. 54). Additionally, De Meuse & Mlodzik (2010) found that “no study completely supported differences across all...generations” (p. 54). Costanza, Badger, Fraser, Severt, & Gade (2012) also performed a meta-analysis on generational differences literature stating “meaningful differences among generations probably do not exist on the work-related variables we examined and that the differences that appear to exist are likely attributable to factors other than generational membership” (p. 375).

Westerman & Yamamura (2007) point out that “the examination of generational differences among workers is a critical and underdeveloped area of inquiry for management research” (p. 150). Tang, Cunningham, Frauman, Ivy, & Perry (2012) add that “it is critical for managers to understand these differences” (pp. 328-329). Cennamo & Gardner (2008) amplify that “it is important to continue the examination of generations in the workplace” (p. 904). And even though Costanza, Badger, Fraser, Severt, & Gade

(2012) published that there is little to no evidence of generational differences, they agree that there “is a need for additional, scientifically sound, (generational difference) research” (p. 390). Because of this interest in studying generational differences, several empirical studies have been undertaken comparing as little as two generations (mostly Baby Boomers to Generation X), up to four generations (comparing the Silent Generation, the preceding generation to Baby Boomers, to Baby Boomers to Generation X to Generation Y). The high level results of these studies are outlined below.

Smola and Sutton (2002) examined generational differences in work values by replicating a previous study using a 335 person study. Significant differences were found on “Gen X-ers reporting a stronger desire to be promoted more quickly, (Generation X reported a stronger desire to) do a decent job whether or not his supervisor is around, Gen X-ers felt more strongly that ‘working hard makes one a better person’, and Boomers felt more strongly that, work should be one of the most important parts of a person's life” (pp. 376-377).

Cennamo and Gardner (2008) investigated differences regarding work values, job satisfaction, affective organizational commitment, and intentions to leave between Baby Boomers, Generation X, and Generation Y using a 504 person study. The only significant differences between generations were “(Generation Y and Generation X) placed more importance on status and freedom work values than the oldest group” (p. 891).

D’Amato and Herzfeldt (2008) examined differences in “learning, organizational commitment and talent retention across managerial generations” (p. 929) between Baby Boomers and Generation Y (separating X into early and late) using a 1,666 person study.

The significant differences between generations noted that Generation X had a “(lower) intention to stay, (lower) organizational commitment, higher learning orientation” (p. 945) compared to Baby Boomers.

Dries, Pepermans, and DeKerpel (2008) investigated differences about career beliefs between the Silent generation, Baby Boomers, Generation X, and Generation Y using a 750 person study. The first question “do people from different generations have different career types? Is a cautious ‘yes’” (Ibid, p. 920). Although “no significant differences were found between generations” (p. 907) it is noted that “perhaps more differences would have been found between the four generations under study if a broader range of possible career success criteria would have been included in the survey” (p. 922).

Sullivan, Forret, Carraher, & Mainiero (2009) examined differences between Baby Boomers and Generation X using the Kaleidoscope Career Model using a 982 person study. The study found significant differences between the two generations, namely “a higher desire for authenticity, higher desire for balance” (Ibid, p. 295). However there were no differences found for “a desire for challenge” (p. 295).

Hess and Jespen (2009) sought to find if there were differences in a perceived psychological contract using Baby Boomers, Generation X, and Generation Y using a 45 person study. The results of the study “demonstrate that membership of a particular generational group and career stage did exert some influence over how employees perceive their psychological contract obligations and how employees respond to different levels of PC fulfillment (p. 279). Additionally, “a stronger negative relationship was

found between transactional fulfilment and intention to leave for Generation Xers than Generation Yers” (p. 261).

Benson and Brown (2011) examined differences in job satisfaction, organizational commitment, and willingness to quit between Baby Boomers and Generation X using a 3,335 person study. The results showed “Boomers had a significantly higher level of job satisfaction and a significantly lower willingness to quit than their GenXer counterparts” (p. 1854).

Tang, Cunningham, Frauman, Ivy, and Perry (2012) investigated differences between “the love of money and leisure ethic” (p. 327) using Baby Boomers and Generation X using a 397 person study. “There were significant differences among demographic variables, i.e., age, sex, organizational tenure, and career tenure between Baby Boomers and Gen-Xers” (p. 344). Baby Boomers had a “lower leisure ethic but higher affective and continuous commitment than Gen-Xers” (p. 344).

Though not every study in this literature review provided clear cut, statistically significant generational differences (amplified by De Meuse & Mlodzik (2010) stating 31% (8 out of 26) reported some differences and Costanza, Badger, Fraser, Severt, & Gade (2012) stating “the small number of studies, the few work-related criteria that could be analyzed, and the uneven number of comparisons across generations all limited our effort” (p. 389)), there is still empirical evidence that generational differences do exist (Benson & Brown, 2011; Cennamo & Gardner, 2008; Dries, Pepermans, & DeKerpel, 2008; D’Amato & Herzfeldt, 2008; Hess & Jepsen, 2009; Smola & Sutton, 2002; Sullivan, Forret, Carraher, & Mainiero, 2009; Tang, Cunningham, Frauman, Ivy, &

Perry, 2012). With the lack of empirical studies on Generation Y, in particular, literature has yet to prove or disprove that Generation Y has different workplace attributes.

Sullivan, Forret, Carraher, & Mainiero (2009) express that “this lack of agreement on the classification of generations makes comparisons of findings across different studies problematic, hampers the advancement of this line of research, and may help explain the lack of consensus in research findings” (p. 295). Even though Costanza, Badger, Fraser, Severt, & Gade (2012) found little evidence to support generational differences in the workplace, they admit “the mixed results are anything but conclusive” (p. 389). The following body of literature discusses using OPM’s research as a basis for this dissertation research.

## **OPM RESEARCH**

The third body of literature, OPM Research, seeks to identify existing data within the federal government in order to test generation difference research within the federal government. This body of literature has four subsections: 1) Understanding the Federal Workforce, 2) OPM’s Surveys, 3) Six Workplace Indices and 4) OPM Survey Results.

## **UNDERSTANDING THE FEDERAL WORKFORCE**

In 1978, the Civil Service Reform Act was signed, reorganizing the Civil Service Commission into three independent successor agencies: OPM, Merit Services Protection Board (MSPB), and the Federal Labor Relations Authority (FLRA). OPM is responsible for the management of all civil service personnel within the federal government. “As the

central human resources planners for the Federal Government, OPM is responsible for the successful management of human capital across every Federal agency” (OPM, 2013g). The MSPB is responsible for performing merit systems studies and reviewing significant actions of OPM to coincide with MSPB’s principles. The MSPB has conducted studies and surveys that center on their nine merit systems principles which are basic standards for governing the executive branch workforce. The FLRA is responsible for “promoting stable, constructive labor relations that contribute to a more efficient government” (FLRA, 2013). Data from OPM is included in this research study while the MSPB and FLRA organizations’ data are not. The MSPB surveys are not included for three reasons: 1) MSPB does not “provide advice on employment, examinations, staffing, retirement and benefits; that responsibility belongs to the OPM” (MSPB, 2013); 2) the demographic questions in the survey do not ask the respondent for their age; and 3) the question sets center around the nine merit systems principles outlined in Appendix B, which are not applicable to the current research but presented for thoroughness. Therefore, any information extracted from the surveys cannot be definitively placed in a generational category and therefore becomes unusable with this research. Furthermore, the FLRA does not conduct federal workforce studies and no usable data exists specific to this research.

“OPM, the focal point for providing statistical information about the Federal civilian workforce” (OPM, 2013e) was the primary agency supplying the source data of federal workforce data used in this research. This data was in the form of surveys (complying with the 5 CFR 250 Human Capital Assessment and Accountability Framework (HCAAF) and MSPB principles) collected from 2002 through 2013 that will

serve as the primary data sources within the government domain. OPM (2013e) provides the civilian workforce characteristics of another OPM source of note called FedScope, which houses publicly available civilian workforce characteristics, shown in Table 5.

**Table 5: FedScope Database Workforce Characteristics**

<b>Workforce Characteristics</b>	<b>Specific Information Available</b>
Who (about the employees)	Age (5 year intervals)
	Gender
	Length of Service (5 year intervals)
What (about their positions)	General Schedule and Equivalent Grade
	Occupation
	Occupation Category
	Pay Plan and Grade
	Salary Level (\$10,000 intervals)
	Type of Appointment
	Work Schedule
Where	Agency
	Location (foreign, U.S., state and country)
	Metropolitan Statistical Area

## OPM'S SURVEYS

OPM is currently conducting a multi-year study of the federal workforce using a survey entitled the FEVS<sup>3</sup>. Their survey has been conducted and reported eight times during the years of 2002, 2004, 2006, 2008, 2010, 2011, 2012, and 2013. This research

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<sup>3</sup> Federal Human Capital Survey (FHCS) was the original survey name from 2006-2008. FHCS changed to FEVS in 2010.

reduced the survey data from four of the eight survey years, omitting 2002, 2004, 2006, and 2008. 2002 data were not included because OPM has it archived and it is no longer maintained (T. Lewis, personal communication, December 3, 2013). 2004 data were also excluded due to the age question's answer choices not matching survey years 2010 through 2013. This misalignment does not allow each generation to be binned the same and could skew the data analysis. 2006 and 2008 data were not included in the primary analyses, but included in the excursion analysis (outside of the scope of this dissertation but analyzed to add depth to the primary analysis as described in the assumptions section of chapter one). 2006 and 2008 both do not have the same questions set for the Employee Engagement Index. Additionally for primary and excursion analysis completeness, OPM survey information from 2006, 2008, 2010, 2011, 2012, and 2013 are outlined in this dissertation.

According to 5 U.S.C. § 250.302(c), each administered OPM survey must contain 45 specific questions and use a pre-determined Likert response scale (Likert, 1932), shown in Appendix C. Depending on the year, OPM added more survey questions to the mandated 45. The final questions set for each survey applicable within this research are shown in Table 6. The number and wording of survey items, other than the title 5 mandated 45, changed from 2006 to 2008 and again in 2010. From 2010 through 2013, the number and wording of items, other than the mandated 45, remained the same, with very small additions. From herein forward, the term "baseline survey years" will be used to refer to the primary research of non-demographic, topic area statements (Q1-Q71) of surveys administered during the years 2010 through 2013 which are exactly the same

wording. Table 6 shows the baseline survey years and provides a comparison to the previous years' items.

**Table 6: OPM Question Comparisons to the Baseline Survey Years**

Survey Items	Survey Years					
	13	12	11	10	08	06
I am given a real opportunity to improve my skills in my organization.	1	1	1	1	2	2
I have enough information to do my job well.	2	2	2	2	3	3
I feel encouraged to come up with new and better ways of doing things.	3	3	3	3	4	4
My work gives me a feeling of personal accomplishment.	4	4	4	4	5	5
I like the kind of work I do.	5	5	5	5	6	6
I know what is expected of me on the job.	6	6	6	6	○	○
When needed I am willing to put in the extra effort to get a job done.	7	7	7	7	○	○
I am constantly looking for ways to do my job better.	8	8	8	8	○	○
I have sufficient resources to get my job done.	9	9	9	9	16	16
My workload is reasonable.	10	10	10	10	17	17
My talents are used well in the workplace.	11	11	11	11	18	18
I know how my work relates to the agency's goals and priorities.	12	12	12	12	19	19
The work I do is important.	13	13	13	13	20	20
Physical conditions allow employees to perform their jobs well.	14	14	14	14	21	21
My performance appraisal is a fair reflection of my performance.	15	15	15	15	30	30
I am held accountable for achieving results.	16	16	16	16	33	32
I can disclose a suspected violation of any law, rule or regulation without fear of reprisal.	17	17	17	17	47	46
My training needs are assessed.	18	18	18	18	51	50
In my most recent performance appraisal, I understood what I had to do to be rated at different performance levels.	19	19	19	19	32	○
The people I work with cooperate to get the job done.	20	20	20	20	1	1
My work unit is able to recruit people with the right skills.	21	21	21	21	14	14
Promotions in my work unit are based on merit.	22	22	22	22	22	22
In my work unit, steps are taken to deal with a poor performer who cannot or will not improve.	23	23	23	23	23	23
In my work unit, differences in performance are recognized in a meaningful way.	24	24	24	24	29	29
Awards in my work unit depend on how well employees perform their jobs.	25	25	25	25	28	28
Employees in my work unit share job knowledge with each other.	26	26	26	26	53	52
The skill level in my work unit has improved in the past year.	27	27	27	27	15	15
How would you rate the overall quality of work done by	28	28	28	28	10*	○

your work unit?						
The workforce has the job-relevant knowledge and skills necessary to accomplish organizational goals.	29	29	29	29	11	11
Employees have a feeling of personal empowerment with respect to work processes.	30	30	30	30	24	24
Employees are recognized for providing high quality products and services.	31	31	31	31	<b>25*</b>	○
Creativity and innovation are rewarded.	32	32	32	32	26	26
Pay raises depend on how well employees perform their jobs.	33	33	33	33	27	27
Policies and programs promote diversity in the workplace.	34	34	34	34	35	34
Employees are protected from health and safety hazards on the job.	35	35	35	35	42	41
My organization has prepared employees for potential security threats.	36	36	36	36	43	42
Arbitrary action, personal favoritism and coercion for partisan political purposes are not tolerated.	37	37	37	37	45	44
Prohibited Personnel Practices are not tolerated.	38	38	38	38	46	45
My agency is successful at accomplishing its mission.	39	39	39	39	○	○
I recommend my organization as a good place to work.	40	40	40	40	8	8
I believe the results of this survey will be used to make my agency a better place to work.	41	41	41	41	○	○
My supervisor supports my need to balance work and other life issues.	42	42	42	42	12	12
My supervisor/team leader provides me with opportunities to demonstrate my leadership skills.	43	43	43	43	<b>13*</b>	○
Discussions with my supervisor/team leader about my performance are worthwhile.	44	44	44	44	31	31
My supervisor/team leader is committed to a workforce representative of all segments of society.	45	45	45	45	<b>34*</b>	<b>33*</b>
My supervisor/team leader provides me with constructive suggestions to improve my job performance.	46	46	46	46	<b>48*</b>	<b>47*</b>
Supervisors/team leaders in my work unit support employee development.	47	47	47	47	49	48
My supervisor/team leader listens to what I have to say.	48	48	48	48	○	○
My supervisor/team leader treats me with respect.	49	49	49	49	○	○
In the last six months, my supervisor/team leader has talked with me about my performance.	50	50	50	50	○	○
I have trust and confidence in my supervisor.	51	51	51	51	7	7
Overall, how good a job do you feel is being done by your immediate supervisor/team leader?	52	52	52	52	9	9
In my organization, leaders generate high levels of motivation and commitment in the workforce.	53	53	53	53	38	37
My organization's leaders maintain high standards of honesty and integrity.	54	54	54	54	39	38
Managers/supervisors/team leaders work well with employees of different backgrounds.	55	55	55	55	36	35
Managers communicate the goals and priorities of the organization.	56	56	56	56	40	39
Managers review and evaluate the organization's progress toward meeting its goals and objectives.	57	57	57	57	41	40
Managers promote communication among different work units.	58	58	58	58	52	51
Managers support collaboration across work units to	59	59	59	59	○	○

accomplish work objectives.						
Overall, how good a job do you feel is being done by the manager directly above your immediate supervisor/team leader?	60	60	60	60	○	○
I have a high level of respect for my organization's senior leaders.	61	61	61	61	37	36
Senior leaders demonstrate support for Work/Life programs.	62	62	62	62	○	○
How satisfied are you with your involvement in decisions that affect your work?	63	63	63	63	55	54
How satisfied are you with the information you receive from management on what's going on in your organization?	64	64	64	64	56	55
How satisfied are you with the recognition you receive for doing a good job?	65	65	65	65	57	56
How satisfied are you with the policies and practices of your senior leaders?	66	66	66	66	58	57
How satisfied are you with your opportunity to get a better job in your organization?	67	67	67	67	59	58
How satisfied are you with the training you receive for your present job?	68	68	68	68	60	59
Considering everything, how satisfied are you with your job?	69	69	69	69	61	60
Considering everything, how satisfied are you with your pay?	70	70	70	70	62	61
Considering everything, how satisfied are you with your organization?	71	71	71	71	63	62
Have you been notified that you are eligible to telework?	72	72	72	○	○	○
Please select the response below that BEST describes your current teleworking situation.	73	73	73	72	○	○
Do you participate in the Alternative Work Schedules?	74	74	74	○	○	○
Do you participate in the Health and Wellness Programs?	75	75	75	○	○	○
Do you participate in the Employee Assistance Program?	76	76	76	○	○	○
Do you participate in the Child Care Programs?	77	77	77	○	○	○
Do you participate in the Elder Care Programs?	78	78	78	○	○	○
How satisfied are you with the Telework program in your agency?	79	79	79	73	○	○
How satisfied are you with the Alternative Work Schedules program in your agency?	80	80	80	74	74*	73*
How satisfied are you with the Health and Wellness Programs in your agency?	81	81	81	75	72*	71*
How satisfied are you with the Employee Assistance Program in your agency?	82	82	82	76	72*	71*
How satisfied are you with the Child Care Programs in your agency?	83	83	83	77	72*	71*
How satisfied are you with the Elder Care Programs in your agency?	84	84	84	78	72*	71*
Where do you work?	85	85	85	79	75	74
What is your supervisory status?	86	86	86	80	76	75
Are you Male or Female?	87	87	87	81	77	76
Are you Hispanic or Latino?	88	88	88	82	78	77
Please select the racial category or categories with which you most closely identify.	89	89	89	83	79	78
What is your age group?	90	90	90	84	80	79
What is your pay category/grade?	91	91	91	85	81	80
How long have you been with the Federal Government	92	92	92	86	82	81

(excluding military service)?						
How long have you been with your current agency?	93	93	93	87	83	82
Are you considering leaving your organization within the next year, and if so, why?	94	94	94	88	84	83
I am planning to retire:	95	95	95	89	85	84
Do you consider yourself to be one or more of the following?	96	96	○	○	○	○
Have you ever served on Active Duty in the US Armed Forces?	97	97	○	○	○	○
Are you an individual with a disability?	98	98	○	○	○	○
<b>NOTES</b>						
#	Exact matching item compared to the baseline survey years					
#*	Not an exact matching item compared to the baseline survey years					
○	Item did not exist within this survey year					

Sources: (OPM, 2006a; OPM, 2008; OPM, 2010; OPM, 2011a; OPM, 2012a; OPM, 2013a)

It is important to note that the usage of the word “questions” is a misnomer. Likert-type “questions” are actually definitive statements, not questions. However, 5 U.S.C. § 250.302 specifically states the word “questions” to mean Likert statements and questions. An extract of 5 U.S.C. § 250.302 is shown below.

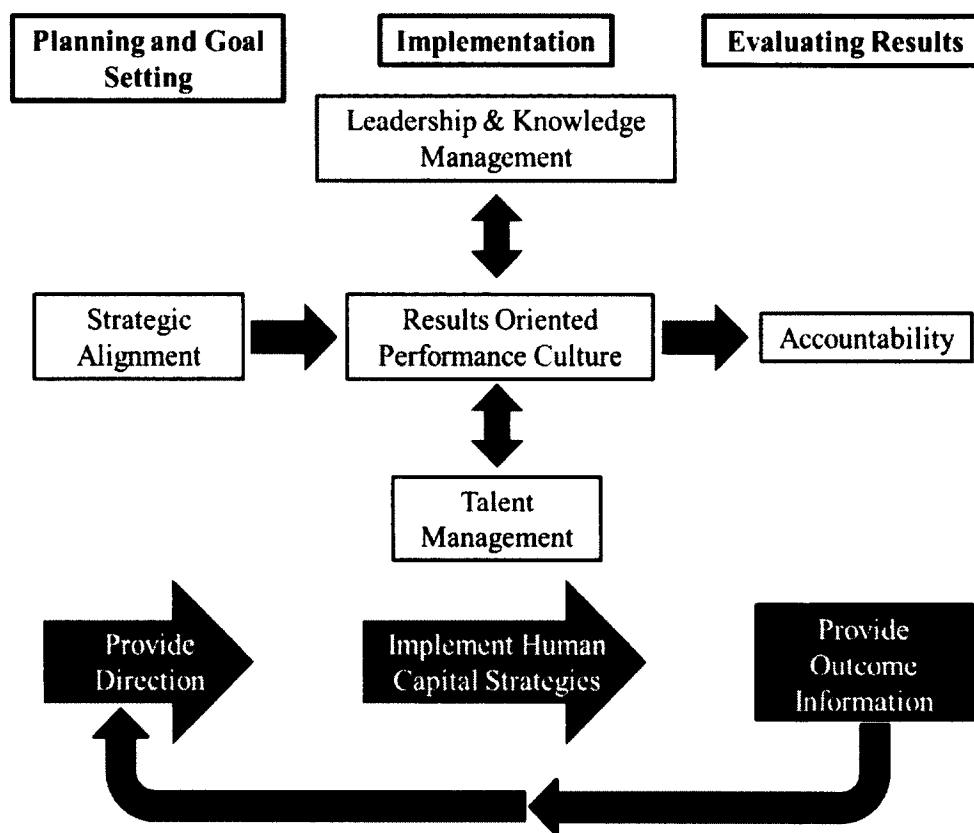
*“Each executive agency must conduct an annual survey of its employees containing the definitions and each question in this subpart. Each executive agency may include survey questions unique to the agency in addition to the prescribed employee survey questions under paragraph c of this section.”*

Once each agency collects the results from the survey, 5 U.S.C § 250 mandates “each agency will make the results of its annual survey available to the public and post the results on its Web site.” The data used in this dissertation was gathered from OPM’s website.

Chief Human Capital Officers Act of 2002 states that “OPM shall design a set of systems, including appropriate metrics, for assessing the management of human capital by Federal agencies.” 5 U.S.C. § 250.202 describe OPM’s set of metrics to be used in the annual surveys:

*OPM adopts the HCAAF to describe the concepts and systems for planning, implementing, and evaluating the results of human capital management policies and practices. In addition, OPM adopts the related set of assessment systems required by the CHCO Act as the HCAAF Systems, Standards, and Metrics (HCAAF-SSM).*

The HCAAF consists of five systems: Strategic Alignment, Leadership and Knowledge Management, Results-Oriented Performance Culture, Talent Management, and Accountability (OPM, 2006b). Figure 5 shows the relationship between the five HCAAF systems (Ibid).



**Figure 5: Relationship between the Five HCAAF Systems**

## SIX WORKPLACE INDICES

U.S. OPM (2006b) outlines the definitions and employee perspective metrics for the five HCAAF systems shown in Table 7 below. Each of the five HCAAF systems has independent measures except talent management. Talent management includes a second measure called Job Satisfaction. Additionally, of the five HCAAF systems, three have quantitative metrics associated with them. Strategic alignment and accountability require qualitative documentation from each agency. The other three and job satisfaction are given a quantitative score based on OPM's surveys.

**Table 7: HCAAF Definitions and Metrics**

<b>HCAAF System</b>	<b>Definition</b>	<b>Employee Perspective Metric</b>
Strategic Alignment	“A system led by senior management – typically the Chief Human Capital Officer (CHCO) – that promotes alignment of human capital management strategies with agency mission, goals, and objectives by means of effective analysis, planning, investment, measurement and management of human capital management programs” (p. 5).	“Documented evidence of a current agency Human Capital plan” (p. 2).
Leadership and Knowledge Management	“A system that ensures continuity of leadership by identifying and addressing potential gaps in effective leadership and implements and maintains programs that capture organizational knowledge and promote learning” (p. 6)	“A score based on items from the government-wide Annual Employee Survey” (p. 3).
Results-Oriented Performance Culture	“A system that promotes a diverse, high-performing workforce by implementing and maintaining effective performance management system and awards programs” (p. 8).	“A score based on items from the government-wide Annual Employee Survey” (p. 7).
Talent Management	“A system that addresses competency gaps, particularly in mission-critical occupations, by implementing and maintaining programs to attract, acquire, promote, and retain quality talent” (p. 10).	Job Satisfaction is included as another employee perspective metric  “Scores based on items from the government-wide Annual Employee Survey” (p. 9).
Accountability	“A system that contributes to agency performance by monitoring and evaluating the results of its human capital management policies, programs and activities, by analyzing compliance with merit system principles and by identifying and monitoring necessary improvements” (p. 12).	“Documented evidence of a Human Capital Accountability system that provides for annual assessment of agency human capital management progress and results” (p. 3).

The scores reported from Leadership and Knowledge Management, Results-Oriented Performance Culture, and Talent Management are classified as index scores (OPM, 2006a; OPM, 2008; OPM, 2010; OPM, 2011a; OPM, 2012a; OPM, 2013a). Additional index scores, not included in the HCAAF Systems, are Employee Engagement (Ibid) and Global Satisfaction (OPM, 2011a). Global Satisfaction not only includes an index but two sub-categories called “Stayers” and “Leavers” (Ibid).

In summation, Table 8 provides expanded definitions of the six indices (to include critical success factors) and each of their operational definitions, which provide a basis for understanding how to answer the research questions and hypotheses.

**Table 8: OPM Indices’ Descriptions and Operational Definitions**

<b>Index</b>	<b>Expanded Definitions</b>	<b>Operational Definitions</b>
Leadership and Knowledge Management	“A system that ensures continuity of leadership by identifying and addressing potential gaps in effective leadership and implements and maintains programs that capture organizational knowledge and promote learning” (OPM, 2006b, p. 4). Underpinned with five “critical success factors: Leadership Succession Management, Change Management, Integrity and Inspiring Employee Commitment, Continuous Learning, and Knowledge Management. These critical success factors ensure: a constant flow of leaders who can properly direct an agency's efforts to achieve results, a workforce with the competencies required to achieve the agency's mission, and that the workforce is motivated to use its competencies in service of the agency's mission” (OPM, 2013f).	Measured by responses to twelve 5-point Likert scale items on a self-report OPM questionnaire via the years 2010 through 2013.
Results-Oriented Performance	“A system that promotes a diverse, high-performing workforce by implementing and maintaining effective performance management	Measured by responses to thirteen 5-point Likert scale

Culture	system and awards programs” (OPM, 2006b, p. 8). Underpinned with six “critical success factors: Communication, Performance Appraisal, Awards, Pay-for-Performance, Diversity Management, and Labor/Management Relations” (OPM, 2013f).	items on a self-report OPM questionnaire via the years 2010 through 2013.
Talent Management	“A system that addresses competency gaps, particularly in mission-critical occupations, by implementing and maintaining programs to attract, acquire, promote, and retain quality talent” (OPM, 2006b, p. 10) Underpinned with two “critical success factors: Recruitment and Retention” (OPM, 2013f).	Measured by responses to seven 5-point Likert scale items on a self-report OPM questionnaire via the years 2010 through 2013.
Job Satisfaction	“The extents to which employees are satisfied with their jobs and various aspects thereof” (OPM, 2011a, p. 21). Job Satisfaction is a sub category under Talent Management and does not have any defined critical success factors.	Measured by responses to seven 5-point Likert scale items on a self-report OPM questionnaire via the years 2010 through 2013.
Global Satisfaction	“A combination of employees’ satisfaction with their job, their pay, and their organization plus their willingness to recommend their organization as a good place to work” (Ibid, p. 17). Stayers and Leavers are defined as “those who intend to stay with their agency and those who intend to leave their agency for reasons other than retirement” (Ibid, p. 18).	Measured by responses to four 5-point Likert scale items on a self-report OPM questionnaire via the years 2010 through 2013.
Employee Engagement	“Engaged employees as passionate, energetic, and dedicated to their job and organization. The organizational conditions lead to feelings of engagement which lead to engagement behaviors (e.g., discretionary effort) and then to organizational performance” (OPM, 2011b, p. 31).	Measured by responses to fifteen 5-point Likert scale items on a self-report OPM questionnaire via the years 2010 through 2013.

The next section briefly summarizes OPM’s survey results from 2006 through 2013 to provide context for the theoretical implications in Chapter 5.

## **OPM SURVEY RESULTS**

The results of OPM's surveys are published yearly and 2013 marked the first time OPM published data comparing generations in the workforce (OPM, 2013a). The index results from 2006 through 2013 provide insight of the entire workforce population. Additionally, the 2013 generational data published only provides percent positive results to two indices (Global Satisfaction and Employee Engagement) and averages to single questions stratified by generation (Ibid).

The results show all six indices increasing from 2006 to 2010 (except Employee Engagement because it was created in 2010) and then decreasing from 2010 through 2013 (OPM, 2006a; OPM, 2008; OPM, 2010; OPM, 2011a; OPM, 2012a; OPM, 2013a). In all cases, except Leadership and Knowledge Management, the 2013 index scores dropped to their lowest levels ever (Ibid). Leadership and Knowledge Management was the only index to increase (1%) over time (Ibid). Job Satisfaction was the highest rated index over time; while Results-Oriented Performance Culture was the lowest rated index over time (Ibid).

The 2013 generational results for Global Satisfaction reported all three generations tied for 59% percent positive (Ibid). The 2013 generational results for Employee Engagement reported Baby Boomers and Generation X with 64% percent positive scores and Generation Y higher at 65% percent positive (Ibid).

## SCHOLARLY CRITIQUES

In addition to the bodies of literature, Scholarly Critiques on the research concept are presented with the following four focus areas: 1) Scholarly Criticisms and Implications, 2) Research Design Strategies and Safeguards, 3) Conditions for which Research May be Inappropriate, and 4) Alternate Research Approaches.

## SCHOLARLY CRITICISMS AND IMPLICATIONS

There are three potential scholarly criticisms that are most likely to be voiced concerning the research concept, shown in Table 9. Additionally, the assessments of their implications on the research design are also discussed.

**Table 9: Scholarly Criticisms**

	<b>Scholarly Criticisms</b>
C1	Developing research questions based on gaps in literature don't lead to significant theories.
C2	The workplace attributes, or indices, of an employee should be categorized in terms of career stage rather than generation, specifically when comparing Generation Y.
C3	Categorizing employees based on generational differences contain stereotypes, especially Generation Y, since their duration in the workforce has been so short compared to older generations.

The first potential criticism is developing research questions based on gaps in literature doesn't lead to significant theories. Most research questions are formulated by noticing gaps in literature (Hallgren, 2012; Sandberg & Alvesson, 2011). It has also been noted that formulating research questions via spotting gaps in literature have a tendency to not lead to significant theories. Sandberg and Alvesson (2011) argue that "gap-spotting is more likely to reinforce or moderately revise, rather than challenge, already influential theories" (p. 25).

This research aims to fill the current knowledge gap of investigating potential generation differences between Generation Y and Generation X and Baby Boomer federal government employees within the federal government's strategic human capital management focus. The intent is to merge this gap with private industry's theory that generational differences do exist.

The answers to the three research questions regarding whether there are differences between Generation Y and Generation X and Baby Boomer federal government employees will enable human capital management leaders to formulate strategic human capital management plans. If any of the three research questions are answered with a yes, this dissertation will present the data needed to begin a foundation for understanding what those differences are. At the very least, regardless of the answers to the research questions, this research aims to present a foundation for the advancement of the overall awareness of how Generation Y employees interact within the federal government, compared to Generation X and Baby Boomers.

The second potential criticism is that the workplace attributes or indices of an employee should be categorized in terms of career stage rather than generation, specifically Generation Y. Some authors specifically comment regarding the possibility of career stage being another classification of employees other than by generation (Cennamo & Gardner, 2008; Costanza, Badger, Fraser, Severt, & Gade, 2012; De Meuse & Mlodzik, 2010; Hess & Jepsen, 2009).

Cennamo & Gardner (2008) state that “the cross-sectional design did not make it possible to determine whether differences between groups were linked to career stage, life stage or genuine generational differences” (p. 903). Hess and Jepsen (2009) remark that “neither generational cohort nor career stage generalizations are likely to be effective in predicting responses in individual employees, irrespective of their age, cohort or career stage” (p. 279). In the Generational Differences section of Chapter 2, the outcome of the scholarly research was that literature did not prove or disprove the notion of generational differences. The implication for this criticism is that the proposed research study will continue in the direction basing the research on generation rather than career stage.

The third potential criticism is that categorizing employees based on generational differences contain stereotypes, especially Generation Y, since their duration in the workforce has been so short compared to older generations. Kim, Knight, & Crutsinger (2009) comment: “However, generational differences in both popular and practitioner management media include mixed results and often contain stereotypical conclusions” (p.548). Cennamo and Gardner (2008) add: “to separate the effects of generation, age and other variables, longitudinal research is required” (p. 903). Generation Y being the newest cohort to enter the workforce, is naturally the youngest. And as the youngest,

there has been a limited amount of time to research, fully understand them at work, and prove/disprove any perceived negative stereotypes. When compared to older generations, Generation Y's dataset is smaller, but growing with each study. The implications for the proposed research can only be underpinned using the information available today. A researcher in a field of study should not wait until the field's elder maturity, rather build upon what limited data are available now and try to advance using the best methodological practices. Smola and Sutton (2002) state the following about continuing research within the generational differences field: "Continued enquiry in this field is important to business leaders as they attempt to understand, motivate and successfully lead the individuals in their organizations and function as good corporate citizens" (p. 381).

## **RESEARCH DESIGN STRATEGIES AND SAFEGUARDS**

The research design has been constructed with safeguards to respond to the three potential scholarly criticisms outlined in Table 10. The safeguard in place in response to the first potential criticism, C1, is to translate the understanding of Generation Y's workplace indices into an overall cost savings for the federal government. Cost is a common factor that everyone can understand and with the current fiscally constrained federal government budget, saving money is a top concern. By understating Generation Y's workplace indices, managers will understand better the recruitment and retention of this generation. Those current unknowns directly relate to a cost savings and the future research may become more "significant" in the eyes of those who will benefit. At the very least, this research may present a foundation for the advancement of the overall

awareness of how Generation Y employees interact within the federal government. At the maximum, this research may lead to a foundation for implementation of new policy, retention practices, and methodologies in the federal government for Generation Y employees. The result of this research could have a potentially larger impact than expected if strategies are specifically tailored to Generation Y's workplace indices, which will reduce attrition. This reduction in attrition equals a cost savings of less recruiting, less training, and increased productivity. As stated, the federal government is currently in a budget constrained environment and this methodology could be a "significant" achievement, even if a "significant theory" isn't proven.

The safeguard in place in response to the second potential criticism, C2, is to utilize the current research available and make a logical decision on how to understand the current employees that are working for the federal government. There are several scholarly articles that conclude defining employees by their generational cohort provides some statistical significance regarding their workplace attributes. For instance, Cennamo and Gardner (2008) comment that "the fact that each generation was introduced to work at differing points in time suggest that work value differences may exist between generations" (p. 892). Crumpacker and Crumpacker (2007) reinforce the fact that people who experience the same life events during their formative years tend to share the same attributes. "Importantly, values are not just specific to an individual. Rather, values are common to groups of people who were exposed to similar social forces during their formative years" (Ibid, p. 352). D'Amato and Herzfeldt (2008) also add that "building upon the rich North-American literature on generations, but also taking into account the European reality and specificity, we have found evidence for generational differences at

work, both in the level of the variables we examined as well as in their relationships with each other” (p. 946).

The safeguard in place in response to the third potential criticism, C3, is to reinforce that this research regarding workplace indices and attributes of Generation Y were extracted from OPM’s surveys and private industry research. The assumption, as discussed in Chapter 1, explains that no intra and cross-domain analyses on Generation Y workplace attributes within private industry and workplace indices within the federal government have been done. However, only published literature on Generation Y working within private industry and OPM’s survey are to be used as the underpinning of the research. The results will either prove or fail to prove the research questions and hypotheses outlined in Tables 3 and 4, respectively. Burke and Ng (2006) comment that “if they are to replace the aging workforce, then organizations have better take note of their work values, beliefs, and behaviors” (p.89). “More research needs to be done about understanding the motivators of this generation, before conflict arises in the workplace, to ensure productivity is not affected” (Glass, 2007, p. 102). Wong et al. (2008) explain “to maintain a high-performing and satisfied workforce across all three generations of employees, organizations need to understand the key generational differences across the personality preferences” (p. 881). And finally, Loughlin and Barling (2001) emphasize:

*In conclusion, there can be little doubt that today’s young workers will soon constitute the workforce of tomorrow. Understanding how their future work attitudes and behaviors will be shaped is too important a question to be ignored. In the same way that organizational psychologists have turned their attention to issues that were critical to organizations*

*and their members, it is now incumbent upon organizational psychologists to direct their energies to understanding today's young workers, and how their current family and work experiences shape their future work attitudes and behaviors. (p. 555)*

## **CONDITIONS FOR WHICH RESEARCH MAY BE INAPPROPRIATE**

There are research scenarios for which the hybrid inductive/deductive research approach may be inappropriate. Some scenarios may be when a researcher wants to draw conclusions of all Generation Y's attributes and indices (regardless of domain) based only on observed patterns of behavior (inductive approach) when the researcher's observations are: in one organization, in one domain, in both domains with no specific methodology for linking, too low a sample size, samples concentrated on either edges of Generation Y's birth years, or samples containing a generational mix with no way of parsing out each generation. Other scenarios may be that the conditions for which a researcher bases their hypotheses are false; therefore, the foundation of the research becomes false (deductive approach). A false condition could be: a thorough literature review returned no scholarly government research on Generation Y attributes therefore the researcher could conclude that the government does not have a problem retaining Generation Y.

## **ALTERNATE RESEARCH APPROACHES**

This research on understanding Generation Y's workplace indices while working for the federal government utilized a combination of inductive and deductive techniques. There are two high level alternative approaches that to the research design that could address the research questions identified in Table 3. The first approach (inductive) would be to identify every federal government organization and identify how many Generation Y employees are at each organization. The next step would be to extract a representative sample of those organizations and sample Generation Y in each of the remaining organizations. From the data collection a logical statement could be made regarding each of the research questions. Based on the way the samples were collected, the argument could be considered strong induction. The second approach (deductive) would be to conclude that the published private industry literature regarding Generation Y must be true for the federal government domain and completely throw away OPM's survey data, specifically the six indices, because the indices did not line up exactly with private industry research on workplace attributes.

Brier (2000) states that "we further have to admit that there are aspects of reality that are beyond measuring" (p. 433). Regardless of the philosophical stance, when a systems-based methodology is deployed to counteract a complex system problem, there will be consequences, either positive or negative. The proposed methodology has been put in place to minimize the negative ramifications and increase the positive impacts. The following chapter outlines the research methodology for understanding generational differences within the federal workforce utilizing OPM's six indices within their surveys.

The following chapter will outline the participants, instruments, data collection, generalizability, data analysis, validity, reliability, and ethical considerations.

## CHAPTER III: RESEARCH METHOD

### INTRODUCTION

The purpose of this chapter is to outline the research method for analyzing Generation Y's six workplace indices compared to Generation X and Baby Boomer six workplace indices to understand if there are generational differences within the federal government domain. If any of the three research questions are answered with a yes, this dissertation will present the data needed to begin a foundation for understanding what those differences are. At the very least, regardless of the answers to the research questions, this research aims to present a foundation for the advancement of the overall awareness of how Generation Y employees interact within the federal government, compared to Generation X and Baby Boomers. The three research questions with their hypotheses are:

1. Are there overall differences of all generations within the federal government utilizing OPM's six workplace indices from the years 2010 through 2013?

$H_{01}(\text{Index \#}):$  There are no overall differences of the federal government utilizing the six workplace indices from the years 2010 through 2013.

$H_{11}(\text{Index \#}):$  There are overall differences of the federal government utilizing the six workplace indices from the years 2010 through 2013.

2. Are there differences in any given year (from 2010 through 2013) between generations within the federal government utilizing OPM's six workplace indices?

$H_{02(\text{Index \#})-\text{Year}}$ : There are no differences in any given year (from 2010 through 2013) between generations within the federal government utilizing the six workplace indices.

$H_{12(\text{Index \#})-\text{Year}}$ : There are differences in any given year (from 2010 through 2013) between generations within the federal government utilizing the six workplace indices.

3. Are there overall differences between generations within the federal government utilizing OPM's six workplace indices from the years 2010 through 2013?

$H_{03(\text{Index \#})-(\text{Generation})}$ : There are no overall differences between generations within the federal government utilizing the six workplace indices from the years 2010 through 2013.

$H_{13(\text{Index \#})-(\text{Generation})}$ : There are overall differences between generations within the federal government utilizing the six workplace indices from the years 2010 through 2013.

## RESEARCH DESIGN

In order to sufficiently answer the research questions presented in the previous section, a solid research foundation must be identified. The core of developing this foundation is first to understand the underpinnings of knowledge and describe how it directly affects the research. The philosophical terms “ontology” and “epistemology” are selected to describe knowledge and its impact within the research concept.

The context of the environment can be described with high level philosophical issues called ontology and epistemology. Ontology describes how humans understand ideas that exist in our world allowing for a knowledge base (Ezell & Crowther, 2007; Flood & Carson, 1993). Epistemology is an amplification of ontology. Epistemology describes human beings ability to convey knowledge, as well as, the realization of knowledge from other humans (Ezell & Crowther, 2007; Flood & Carson, 1993)

Ontology has two opposing sets of beliefs called realism (objective view) and nominalism (personal perception) (Ezell & Crowther, 2007; Flood & Carson, 1993). Epistemology also has two opposing sets of beliefs called positivism (sensory perception along with tangible conveyance) and anti-positivism (rational reflection) (Ezell & Crowther, 2007; Flood & Carson, 1993). Using these belief paradigms, researchers can begin to lay the philosophical foundations that will guide the methodological thinking and action.

Each belief set has its own functions and pertinent information to provide conclusions. Depending on the situation, the belief sets can be used in conjunction with one another to provide a solid philosophical foundation. Flood and Carson (1993) observe much debate over opposing philosophical views and note that there are distinct

sides with little grey area in between. Haggis (2008) notes the same debate over contradictory philosophical views that continue to divide the two sides. Realism has been selected as the ontology basis for the research concept due to its theory regarding concrete, objective, and temporal items (Flood & Carson, 1993; Scilia, 2007). The epistemological method chosen is positivism due to the knowledge base being absolute, definitive, and tied to the real world which is shared tangibly from one person to another (Flood & Carson, 1993; Guarino, 1995).

While researching articles in engineering management, specifically with understanding generations with the intention to promote an understanding for potential change, research methods have been considered. Confirmatory and pragmatic surfaced as the top two research methods. The confirmatory method has been chosen as the selected method for this research due to its scientific nature striving to rigorously explain phenomena through hypothesis validation. Pragmatic, on the other hand, does not strive to explain phenomena, rather to develop a change to undesirable problems utilizing tools that allow for repeatability. Table 10 outlines the confirmatory methods consisting of methodology, paradigm, philosophical tenets, canons, and tools & techniques.

**Table 10: Confirmatory Methods**

<b>Methodology</b>	<b>Paradigm</b>	<b>Philosophical Tenets</b>	<b>Canons</b>	<b>Tools &amp; Techniques</b>
Scientific	Positivism	GAO Research Generational Research within Private Industry OPM Research	Validity Reliability	Data Collection Analysis Reporting

## **PARTICIPANTS**

The target population is Generation Y (born between the years of 1983 to 1995), Generation X (born between the years of 1965 to 1982), and Baby Boomers (born between the years of 1946 to 1964) who are full-time, permanent federal government employees. Table 11 shows the sampling frame as “the list of employees (who were randomly selected) from all agencies participating in the survey and subsequently grouped into a number of sample subgroups corresponding to the agency, sub-agency, and supervisory status reporting requirements” (OPM, 2006a, p. 34; OPM, 2008, p. 36; OPM, 2010, p. 23; OPM, 2011a, p. 27; OPM, 2012a, p. 32; OPM, 2013a, p. 27). There were differences between the sampling frame and the actual surveys sent out. The most common reasons are that agencies are allowed to decide who will receive a survey, sent surveys may not reach an individual due to an inaccurate email address, or some people chose not to complete the survey. It is important to note that the percentage of surveys sent out compared to the sampling frame has held constant around 90% for all years except 2013 (where it was 42%). The Response Rate column is the percentage of total respondents compared to the number of surveys sent out. As an additional comparison, the last column in Table 11 shows the total number of federal employees in a given year.

**Table 11: OPM Survey Summary**

<b>Year</b>	<b>Sampling Frame</b>	<b>Surveys Sent Out</b>	<b>Total Respondents</b>	<b>Response Rate</b>	<b>Total Number of Federal Employees</b>
2013	1,866,217	781,047	376,577	48%	2,079,964
2012	1,622,375	1,492,418	687,687	46%	2,110,221
2011	560,084	540,727	266,376	49%	2,130,289
2010	549,124	504,609	263,475	52%	2,113,210
2008	463,545	417,128	212,223	51%	1,938,821
2006	436,020	390,657	221,479	57%	1,852,825

Sources: (OPM, 2006a; OPM, 2008; OPM, 2010; OPM, 2011a; OPM, 2012a; OPM, 2013a; OPM, 2013b)

## **INSTRUMENTS**

The focus areas in this dissertation are OPM's six workplace indices that were measured via online and printed survey questionnaires. From 2006 through 2012, the surveys were administered primarily online with paper being secondary for those with no internet access. 2013 surveys were administered online only. Table 12 shows the full survey question comparison for the six years under investigation. This table is broken up into non-demographic statements and questions used for the six workplace indices, non-demographic statements and questions not used for the six workplace indices, and demographic statements and questions.

### Table 12: Survey Question Comparison

Survey Items		2013	2012	2011	2010	2008	2006
Non-demographic statements and questions used for the six workplace indices		1-71	1-71	1-71	1-71	1-63	1-62
Non-demographic statements and questions not used for the six workplace indices		72-84	72-84	72-84	72*, 73-78*	72* & 74*	71* & 73*
Demographic statements and questions		85-98	85-98	85-95	79-89	75-85	74-84
NOTES							
#	Exact matching item compared to the baseline survey years						
##	Not an exact match compared to the baseline survey years						

Sources: (OPM, 2006a; OPM, 2008; OPM, 2010; OPM, 2011a; OPM, 2012a; OPM, 2013a)

Age was the sole demographic question to distinguish each of the three generations used in this study. Table 13 shows the age range question for each of the six years and the respondent six answer choices. The answer choices were used to bin each generation, within a given year in the analysis. Appendix A provides the generational binning with respect to each year.

**Table 13: Age Range Question**

Age Question	2013	2012	2011	2010	2008	2006
What is your age group?	90	90	90	84	80	79
<b>Answer Choices</b>						
<b>[A] 25 and under</b>						
<b>[B] 26 – 29</b>						
<b>[C] 30 – 39</b>						
<b>[D] 40 – 49</b>						
<b>[E] 50 – 59</b>						
<b>[F] 60 or older</b>						

Table 14 shows the rollup of the six workplace indices used in this research. Not all the workplace indices were reported in all years and not all have identical statements and questions (outlined in the notes section of Table 7). Each index will be further decomposed with accompanying tables for illustration. It's important to note that the indices, via the questions that comprise each index, can be binned into two different types of employee perceptions: inward and outward. Inward indices relate to employees' perception of their own job and outward indices relate to employees' perceptions of their organizations. Each index will be assigned an inward or outward focus based on the types of questions that comprise each index.

**Table 14: Survey Workplace Indices**

Workplace Indices	2013	2012	2011	2010	2008	2006
Leadership and Knowledge Management	●	●	●	●	●	●
Results-Oriented Performance Culture	●	●	●	●	●	●
Talent Management	●	●	●	●	●	●
Job Satisfaction	●	●	●	●	●	●
Global Satisfaction	●	●	●	●●	●●	●●
Sub Category – Stayers and Leavers	●●	●●	●	●●	●●	●●
Employee Engagement	●	●	●	●*	○	○
Sub Category – Leaders Lead	●	●	●	●*	○	○
Sub Category – Supervisors	●	●	●	●*	○	○
Sub Category – Intrinsic Work Experiences	●	●	●	●*	○	○
<b>NOTES</b>						
●●	Exact matching items to the baseline survey years					
●	Exact matching items to the baseline survey years AND was reported during this survey year					
●*	Exact matching items to the baseline survey years but was NOT reported during this survey year					
○	A subset of exact matching items to the baseline survey years.					

Sources: (OPM, 2006a; OPM, 2008; OPM, 2010; OPM, 2011a; OPM, 2012a; OPM, 2013a)

All six indices' items, for each year under study, used three different forms of five point Likert scales: 1) Strongly Agree, Agree, Neither Agree nor Disagree, Disagree, Strongly Disagree; 2) Very Satisfied, Satisfied, Neither Satisfied nor Dissatisfied, Dissatisfied, Very Dissatisfied; and 3) Very Good, Good, Fair, Poor, Very Poor (OPM, 2011b; OPM, 2012b; T. Lewis, personal communication, December 3, 2013). Additionally, certain questions allowed the respondents to select Do Not Know or No Basis to Judge. These two answer selections were not included within the responses (Ibid). Each table presented for the six indices has notes to properly differentiate between each Likert scale.

Leadership and Knowledge Management index is defined as “a system that ensures continuity of leadership by identifying and addressing potential gaps in effective leadership and implements and maintains programs that capture organizational knowledge and promote learning” (OPM, 2006b, p. 6).

This index, shown in Table 15, utilizes 12 survey items that have been identically worded and reported from 2006-2013 (OPM, 2006a; OPM, 2008; OPM, 2010; OPM, 2011a; OPM, 2012a; OPM, 2013a). In addition, Leadership and Knowledge Management is categorized as an outward employee perception index.

**Table 15: Leadership and Knowledge Management Index**

Survey Items	2013	2012	2011	2010	2008	2006
My workload is reasonable.	10	10	10	10	17	17
Employees are protected from health and safety hazards on the job.	35	35	35	35	42	41
My organization has prepared employees for potential security threats.	36	36	36	36	43	42
I have trust and confidence in my supervisor.	51	51	51	51	7	7
Overall, how good a job do you feel is being done by your immediate supervisor/team leader?	<u>52</u>	<u>52</u>	<u>52</u>	<u>52</u>	<u>9</u>	<u>9</u>
In my organization, leaders generate high levels of motivation and commitment in the workforce.	53	53	53	53	38	37
Managers/supervisors/team leaders work well with employees of different backgrounds.	55	55	55	55	36	35
Managers communicate the goals and priorities of the organization.	56	56	56	56	40	39
Managers review and evaluate the organization's progress toward meeting its goals and objectives.	57	57	57	57	41	40
I have a high level of respect for my organization's senior leaders.	61	61	61	61	37	36
How satisfied are you with the information you receive from management on what's going on in your organization?	<u>64</u>	<u>64</u>	<u>64</u>	<u>64</u>	<u>56</u>	<u>55</u>
How satisfied are you with the policies and practices of your senior leaders?	<u>66</u>	<u>66</u>	<u>66</u>	<u>66</u>	<u>58</u>	<u>57</u>
<b>NOTES</b>						
Filled in numbers denote item number of exact matching items to the baseline survey years Leadership and Knowledge Management reported all years shown						
#	5 pt Likert scale: Strongly Agree, Agree, Neither Agree nor Disagree, Disagree, and Strongly Disagree					
<u>#</u>	5 pt Likert scale: Very Satisfied, Satisfied, neither Satisfied no Dissatisfied, Dissatisfied, and Very Dissatisfied					
<u>#</u>	5 pt Likert scale: Very Good, Good, Fair, Poor, Very Poor					

Sources: (OPM, 2006a; OPM, 2008; OPM, 2010; OPM, 2011a; OPM, 2011b; OPM, 2012a; OPM, 2013a)

Results-Oriented Performance Culture index is defined as “a system that promotes a diverse, high-performing workforce by implementing and maintaining effective performance management system and awards programs” (OPM, 2006b, p. 8). This index, shown in Table 16, utilizes 13 survey items that have been identically worded and reported from 2006-2013 (OPM, 2006a; OPM, 2008; OPM, 2010; OPM, 2011a; OPM,

2012a; OPM, 2013a). In addition, Results-Oriented Performance Culture is categorized as an outward employee perception index.

**Table 16: Results-Oriented Performance Culture Index**

Survey Items	2013	2012	2011	2010	2008	2006
I know how my work relates to the agency's goals and priorities.	12	12	12	12	19	19
Physical conditions allow employees to perform their jobs well.	14	14	14	14	21	21
My performance appraisal is a fair reflection of my performance.	15	15	15	15	30	30
The people I work with cooperate to get the job done.	20	20	20	20	1	1
Promotions in my work unit are based on merit.	22	22	22	22	22	22
In my work unit, steps are taken to deal with a poor performer who cannot or will not improve.	23	23	23	23	23	23
In my work unit, differences in performance are recognized in a meaningful way.	24	24	24	24	29	29
Employees have a feeling of personal empowerment with respect to work processes.	30	30	30	30	24	24
Creativity and innovation are rewarded.	32	32	32	32	26	26
Pay raises depend on how well employees perform their jobs.	33	33	33	33	27	27
My supervisor supports my need to balance work and other life issues.	42	42	42	42	12	12
Discussions with my supervisor/team leader about my performance are worthwhile.	44	44	44	44	31	31
How satisfied are you with the recognition you receive for doing a good job?	<u>65</u>	<u>65</u>	<u>65</u>	<u>65</u>	<u>57</u>	<u>56</u>
<b>NOTES</b>						
Filled in numbers denote item number of exact matching items to the baseline survey years Results-Oriented Performance Culture reported all years shown						
#	5 pt Likert scale: Strongly Agree, Agree, Neither Agree nor Disagree, Disagree, and Strongly Disagree					
#	5 pt Likert scale: Very Satisfied, Satisfied, neither Satisfied no Dissatisfied, Dissatisfied, and Very Dissatisfied					

Sources: (OPM, 2006a; OPM, 2008; OPM, 2010; OPM, 2011a; OPM, 2011b; OPM, 2012a; OPM, 2013a)

Talent Management index is defined as “a system that addresses competency gaps, particularly in mission-critical occupations, by implementing and maintaining programs to attract, acquire, promote, and retain quality talent” (OPM, 2006b, p. 10).

This index, shown in Table 17, utilizes seven survey items that have been identically worded and reported from 2006-2013 (OPM, 2006a; OPM, 2008; OPM, 2010; OPM, 2011a; OPM, 2011b; OPM, 2012a; OPM, 2013a). In addition, Talent Management is categorized as an outward employee perception index.

**Table 17: Talent Management Index**

Survey Items		2013	2012	2011	2010	2008	2006
I am given a real opportunity to improve my skills in my organization.		1	1	1	1	2	2
My talents are used well in the workplace.		11	11	11	11	18	18
My training needs are assessed.		18	18	18	18	51	50
My work unit is able to recruit people with the right skills.		21	21	21	21	14	14
The workforce has the job-relevant knowledge and skills necessary to accomplish organizational goals.		29	29	29	29	11	11
Supervisors/team leaders in my work unit support employee development.		47	47	47	47	49	48
How satisfied are you with the training you receive for your present job?		<u>68</u>	<u>68</u>	<u>68</u>	<u>68</u>	<u>60</u>	<u>59</u>
NOTES							
Filled in numbers denote item number of exact matching items to the baseline survey years Talent Management reported all years shown							
#	5 pt Likert scale: Strongly Agree, Agree, Neither Agree nor Disagree, Disagree, and Strongly Disagree						
#	5 pt Likert scale: Very Satisfied, Satisfied, neither Satisfied no Dissatisfied, Dissatisfied, and Very Dissatisfied						

Sources: (OPM, 2006a; OPM, 2008; OPM, 2010; OPM, 2011a; OPM, 2011b; OPM, 2012a; OPM, 2013a)

Job Satisfaction index is defined as “the extent to which employees are satisfied with their jobs and various aspects thereof” (OPM, 2011a, p. 21). Job Satisfaction is a sub category under Talent Management and does not have any defined critical success factors.

This index, shown in Table 18, utilizes seven survey items that have been identically worded and reported from 2006-2013 (OPM, 2006a; OPM, 2008; OPM, 2010; OPM, 2011a; OPM, 2011b; OPM, 2012a; OPM, 2013a). In addition, Job Satisfaction is categorized as an inward employee perception index; it is the only one out of all six indices categorized as such.

**Table 18: Job Satisfaction Index**

Survey Items		2013	2012	2011	2010	2008	2006
My work gives me a feeling of personal accomplishment.		4	4	4	4	5	5
I like the kind of work I do.		5	5	5	5	6	6
The work I do is important.		13	13	13	13	20	20
How satisfied are you with your involvement in decisions that affect your work?		<u>63</u>	<u>63</u>	<u>63</u>	<u>63</u>	<u>55</u>	<u>54</u>
How satisfied are you with your opportunity to get a better job in your organization?		<u>67</u>	<u>67</u>	<u>67</u>	<u>67</u>	<u>59</u>	<u>58</u>
Considering everything, how satisfied are you with your job?		<u>69</u>	<u>69</u>	<u>69</u>	<u>69</u>	<u>61</u>	<u>60</u>
Considering everything, how satisfied are you with your pay?		<u>70</u>	<u>70</u>	<u>70</u>	<u>70</u>	<u>62</u>	<u>61</u>
NOTES							
Filled in numbers denote item number of exact matching items to the baseline survey years Job Satisfaction reported all years shown							
#	5 pt Likert scale: Strongly Agree, Agree, Neither Agree nor Disagree, Disagree, and Strongly Disagree						
#	5 pt Likert scale: Very Satisfied, Satisfied, neither Satisfied no Dissatisfied, Dissatisfied, and Very Dissatisfied						

Sources: (OPM, 2006a; OPM, 2008; OPM, 2010; OPM, 2011a; OPM, 2011b; OPM, 2012a; OPM, 2013a)

Global Satisfaction index is defined as “a combination of employees’ satisfaction with their job, their pay, and their organization plus their willingness to recommend their organization as a good place to work” (OPM, 2011a, p. 17).

This index, shown in Table 19, utilizes four survey items that have been identically worded and reported from 2011-2013 (OPM, 2006a; OPM, 2008; OPM, 2010; OPM, 2011a; OPM, 2011b; OPM, 2012a; OPM, 2013a). Previous years, 2006-2010, Global Satisfaction was not reported by OPM; however, the four item set was resident within those years, and worded exactly the same with the same Likert response scale. This research will report this index for all years under study.

Global Satisfaction (Stayers and Leavers) index is defined as “those who intend to stay with their agency and those who intend to leave their agency for reasons other than retirement” (OPM, 2011a, p. 18).

This index, shown in Table 19, utilizes a single survey item that was reported in 2011 only (OPM, 2011a). The goal of this index is to drill down further into Global Satisfaction and see if those who actually are satisfied with their jobs plan on staying as a result. Other years, 2006-2010 and 2012-2013, Global Satisfaction was not reported by OPM; however, the single survey item was resident within those years and worded exactly the same with the same response scale (non-Likert scale). This research will report this index for all years under study. In addition, Global Satisfaction is categorized as an outward employee perception index.

**Table 19: Global Satisfaction Index**

Survey Items	2013	2012	2011	2010	2008	2006
I recommend my organization as a good place to work.	40	40	40	40	8	8
Considering everything, how satisfied are you with your job?	<u>69</u>	<u>69</u>	<u>69</u>	<u>69</u>	<u>61</u>	<u>60</u>
Considering everything, how satisfied are you with your pay?	<u>70</u>	<u>70</u>	<u>70</u>	<u>70</u>	<u>62</u>	<u>61</u>
Considering everything, how satisfied are you with your organization?	<u>71</u>	<u>71</u>	<u>71</u>	<u>71</u>	<u>63</u>	<u>62</u>
<b>SUB CATEGORY – STAYERS AND LEAVERS</b>						
Are you considering leaving your organization within the next year, and if so, why?	94*	94*	94*	88*	84*	83*
<b>NOTES</b>						
Filled in numbers denote item number of exact matching items to the baseline survey years Global Satisfaction reported 2011-2013 only Global Satisfaction (Stayers and Leavers) reported 2011 only						
#	5 pt Likert scale: Strongly Agree, Agree, Neither Agree nor Disagree, Disagree, and Strongly Disagree					
#	5 pt Likert scale: Very Satisfied, Satisfied, neither Satisfied no Dissatisfied, Dissatisfied, and Very Dissatisfied					
#*	Non-Likert scale and were not analyzed via statistical testing					

Sources: (OPM, 2006a; OPM, 2008; OPM, 2010; OPM, 2011a; OPM, 2011b; OPM, 2012a; OPM, 2013a)

Employee Engagement index, shown in Table 20, is defined as how engaged employees are to their organization, and has changed twice over the reported survey years. In 2006 and 2008, there were four fewer questions compared to the baseline survey years and because of this, 2006 and 2008 were omitted from the primary analysis. In 2010, this index was created using a three step process: “1) rationally choose FEVS items which tap dimensions commonly found in employee engagement ‘driver’ measures, 2) conduct statistical analyses of the 2010 FEVS results, and 3) final selection of survey items for 2010” (OPM, 2011b, p. 31). For a more in-depth look at how employee engagement matured using exploratory factor analysis and confirmatory factor analysis to the three factors, five question model where OPM used several subject matter

experts within and outside of the federal government, see Appendix D. In addition, Employee Engagement is categorized as an outward employee perception index.

**Table 20: Employee Engagement Index**

Survey Items	2013	2012	2011	2010	2008	2006
<b>SUB CATEGORY - LEADERS LEAD</b>						
In my organization, leaders generate high levels of motivation and commitment in the workforce.	53	53	53	53	38	37
My organization's leaders maintain high standards of honesty and integrity.	54	54	54	54*	39	38
Managers communicate the goals and priorities of the organization.	56	56	56	56	40	39
Overall, how good a job do you feel is being done by the manager directly above your immediate supervisor/team leader?	<u>60</u>	<u>60</u>	<u>60</u>	<u>60*</u>	○	○
I have a high level of respect for my organization's senior leaders.	61	61	61	61*	37	36
<b>SUB CATEGORY - SUPERVISORS</b>						
Supervisors/team leaders in my work unit support employee development.	47	47	47	47	49	48
My supervisor/team leader listens to what I have to say.	48	48	48	48	○	○
My supervisor/team leader treats me with respect.	49	49	49	49*	○	○
I have trust and confidence in my supervisor.	51	51	51	51*	7	7
Overall, how good a job do you feel is being done by your immediate supervisor/team leader?	<u>52</u>	<u>52</u>	<u>52</u>	<u>52*</u>	<u>9</u>	<u>9</u>
<b>SUB CATEGORY - INTRINSIC WORK EXPERIENCES</b>						
I feel encouraged to come up with new and better ways of doing things.	3	3	3	3	4	4
My work gives me a feeling of personal accomplishment.	4	4	4	4	5	5
I know what is expected of me on the job.	6	6	6	6	○	○
My talents are used well in the workplace.	11	11	11	11	18	18
I know how my work relates to the agency's goals and priorities.	12	12	12	12*	19	19
<b>NOTES</b>						
Filled in numbers denote question number of exact matching questions to the baseline survey years Employee Engagement only reported 2010-2013, with 2010 using 8 questions						
#	5 pt Likert scale: Strongly Agree, Agree, Neither Agree nor Disagree, Disagree, and Strongly Disagree					
#	5 pt Likert scale: Very Satisfied, Satisfied, neither Satisfied no Dissatisfied, Dissatisfied, and Very Dissatisfied					
#*	Exact matching item compared to the baseline survey years but was NOT reported during this survey year					
○	Item did not exist within this survey year					

Sources: (OPM, 2006a; OPM, 2008; OPM, 2010; OPM, 2011a; OPM, 2011b; OPM, 2012a; OPM, 2013a)

## **DATA COLLECTION**

OPM staggered the survey release dates for ease of collection purposes and allowed each agency a 4-8 week administration period (OPM, 2011b; OPM, 2012b). OPM sent emails to the sampling frame of employees who had internet access requesting they click a web link to participate in the web survey (Ibid). Of those who didn't have internet access, OPM sent a paper survey in the mail with a return envelope or hand delivered within agencies (Ibid). Reminders were sent out via email and mail to increase the response rate (Ibid). The paper surveys were then converted into the web survey format (Ibid).

## **VALIDITY AND RELIABILITY**

Validity is defined as the "extent to which a measure or set of measures correctly represents the concept under study - the degree to which it is free from any systematic or nonrandom error (Hair, Black, Babin, & Anderson, 2010, p. 3). Validity has three measurements to investigate to make sure the philosophical underpinnings of research are properly exhausted. Validity is described as: discriminant, convergent, and external. Discriminant validity is the extent to which different proposed observed variables are indeed distinct and unrelated (Ibid). In order to ensure discriminant validity, there should be no cross loadings of observed variables upon latent variables (Ibid). As stated in Chapter 2, the six indices were not constructed using exploratory or confirmatory factor analysis, rather a psychometric approach (Federal Employee Viewpoint Survey Team, personal communication, January 2, 2014). Because of this lack of factor analysis and no specific model to test, discriminant validity cannot be measured.

Convergent validity is the degree in which indicators of the same observed variable are correlated (Ibid). In order to ensure convergent validity, examine the loadings of each factor to ensure statistical significance at the specified alpha level (usually 0.05) and eliminate the loadings that are below 0.5 (0.7 for ideal cases) (Ibid). Once again, five of the six indices were not constructed using exploratory or confirmatory factor analysis, rather a psychometric approach (Federal Employee Viewpoint Survey Team, personal communication, January 2, 2014) and the scope of this dissertation includes all indices, regardless of loadings; therefore convergent validity cannot be measured.

External validity (or generalizability) “models the major sources of error that might affect (observed variables) and it also provides statistical estimates of the magnitude of the sampling variability from these difference sources of variation and the interactions between them” (Gao, Shavelson, & Baxter, 1994, p. 325). Ensuring generalizability is kept to a minimum reduces this error and results in the more accurate predictions for future datasets (Liu & Aitkin, 2008). Additionally, low generalizability gives more credence to the proposed theory which may help explain phenomena in other domains (Wacker, 1998). If this theory can be applied to more than the original domain then this becomes a better theory (Ibid).

*If one theory can be applied to one type of environment and another theory can be applied to many environments, then the second theory is a more virtuous theory since it can be more widely applied. Some authors call this virtue the utility of the theory since those theories that have wider application have more importance. (Ibid, p. 365)*

However, the application of generalizability with regards to epistemology's two sets of beliefs is not as cut and dry. Meredith (1998) points out that generalizability "is as problematic for case studies as it is for rationalist studies" (p. 449). There are distinct notions of generalizability based on interpretation (Lee & Baskerville, 2003). Meredith (1998) also notes:

*When speaking of generalizability, an interesting and illustrative conundrum has developed in the operations field between those rationalists who do algorithmic and simulation modeling research and those interpretivists who do case and field research. The former often maintain that their results are highly generalizable because they apply in any situation and time frame where the assumptions hold (and for many robust findings, even when some of the assumptions do not hold), whereas the findings from case research have little generalizability because the results are only valid for that case's situation. On the other side, the case/field researchers often maintain that the theory developed from their studies is applicable to other similar (in the sense of having the same population parameters) situations and even in situations that are not similar but where the theory would still apply and predict a different result. Likewise, they maintain that the algorithmic and simulation results have little generalizability because real situations are much more complex than the simplified reality assumed by the rationalists and no real situation ever satisfies all the assumptions on which the findings have been based. (p. 449)*

There are many strategies an investigator might use to increase generalizability within the scope of research. Seven strategies were researched and outlined in Table 21.

**Table 21: Generalizability Strategies**

Strategy #	Description	Reasoning
S1	Randomly selecting participants (Finn, 2006)	To provide an unbiased representation of the true population.
S2	Include as large a sample as possible (Majchrzak, Rice, Malhotra, King, & Ba, 2000)	Increased sample size provides a more accurate representation of the population.
S3	Include multiple populations and different individuals, such as “polar types” (Meredith, 1998, p. 451)	This “develops a more comprehensive theory.” It is especially important when testing two or more items for a specific phenomenon (Meredith, 1998, p. 451).
S4	Include multiple case studies (Brown, 1997; Lee & Baskerville, 2003; Majchrzak et al., 2000; Meredith, 1998; Vandenbosch & Ginzberg, 1996-97).	“If two or more cases support the same findings, then even greater confidence in the theoretic generalizability of the theory has been established.” (Meredith, 1988, p. 450)
S5	“Test the original theory on alternate (randomized) populations” which are not included in the initial test (Meredith, 1998, p. 452)	“If the theory passes the (alternate) test, then its relevance is extended even further. If it does not pass the (alternate) test, the researcher has an opportunity to extend or replace the theory. Here, the researcher may have a suspicion that a theory will not hold in a particular population for certain reasons – an intuitive new theory. If the researcher’s suspicions are confirmed, the new, more generalizable theory replaces the previous theory such as when Einstein’s theory of relativity replaced Newton’s more limited theory of gravity” (Meredith, 1998, p. 452)
S6	Conduct the test in a natural setting instead of in a lab environment (Gerin, Rosofsky, Pieper, & Pickering, 1994).	A lab environment could hinder the participants’ ability to act normal, therefore negatively skewing the results (Gerin et al., 1994).
S7	Include “as many independent variables as possible” (Meredith, 1998, p. 452)	“Other situations that include these (observable) factors will also thereby be included in the theory” (Meredith, 1998, p. 452)

The best researchers, who strive to increase generalizability within their research via rigorous sampling criteria, still could fall victim to the common mistakes with their research design. Aldag and Sterns (1988) comment:

*Despite the importance of sampling in organization and management research, much research is conducted ignoring issues in sampling that would permit greater generalizability of findings. After all, the collection of data can be profoundly affected by accessibility, cost, time, and interests of third parties in the outcomes. Ideally, most of these problems could be overcome if (a) researchers had easy access to a large, representative sample of organizations drawn from the population of all organizations in the United States; (b) the sample were followed over time with repeated observations; (c) additional variables of interest were rotated through the sample over shorter periods of time. (p. 259)*

Additionally, the conclusions that are drawn from the organizations within the sample cannot be generalized to other contexts (Robey & Sahay, 1996). It is imperative that the researcher present the results in a manner for which they were tested.

*Each context is different, so we should expect different contextual elements to interact with technical initiatives to produce different consequences. What is true for ... the two local county governments studied may be untrue for ... other governmental units or in private enterprises. (p. 108)*

Furthermore, the limited data access is sometimes used as a means of convenience or opportunity (Meredith, 1998). This convenience can negatively impact the

randomness of the sample (Lefever, Dal, & Matthiasdottir, 2007) due to the limited number of people to choose from. Even with large datasets, researchers that split a single dataset into two pieces, one for calibration and the other for test samples, increases the chance of lowering generalizability (Busemeyer & Wang, 2000). Conversely, those who have applied rigor to their research design and data who make the research domain very specific also reduce the generalizability (Wacker, 1998).

The specific methodology chosen will entrench the seven generalizability strategies outlined in Table 21. Strategies S1 (randomly selecting participants) and S2 (include as large a sample as possible) were addressed in this unique methodology. OPM's survey was "directed at full-time, permanent employees from agencies represented on the President's Management Council. These agencies comprise approximately 97 percent of the executive branch workforce (and an) invitation (was sent) to all small and independent agencies<sup>4</sup> to participate in the FHCS" (OPM, 2006a, p. 34; OPM, 2008, p. 36; OPM, 2010, p. 23; OPM, 2011a, p. 27; OPM, 2012a, p. 32; OPM, 2013a, p. 27). Table 22 shows an approximate sample size summary for each of OPM's four survey years used in the primary research and two of the survey years (2006 and 2008) used in the excursion analysis. 2012 has the most samples of any year due to the large amount of surveys sent out (shown in Table 11). As stated in the delimitations section in Chapter 1, certain response blocks in the survey include two generations that are impossible to separate; therefore, only the known sample that completely encompasses each generation is shown in Table 22. Please see the notes section of this table for specific age ranges used.

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<sup>4</sup> Large independent agencies ( $\geq 1000$  employees), medium independent agencies (100-999 employees), and small independent agencies ( $< 100$  employees) (United States Office of Personnel Management, 2013b).

**Table 22: OPM Sample Size Summary**

Year	TOTAL NUMBER OF RESPONDENTS			
	All*	Generation Y	Generation X	Baby Boomers
2013	376,577	16,441	Cannot decipher	173,005
2012	687,687	37,894	109,123	304,027
2011	266,376	3,763	38,379	121,496
2010	263,475	3,217	35,699	126,170
2008	212,223	2,298	35,943	106,584
2006	221,479	Cannot decipher	37,597	107,107
NOTES				
Generation Y		2008: $\leq 25$ years old, 2012 – 2013: $\leq 29$ years old		
Generation X		2006 – 2010: 30-39 years old		
Baby Boomers		2006 - 2013: $\geq 50$ years old		
* Due to generational cutoff years, some respondents cannot be binned within the three generations. They are still included in the overall sample size.				

Sources: (OPM, 2006a; OPM, 2008; OPM, 2010; OPM, 2011a; OPM, 2012a; OPM, 2013a)

Strategy S3 (include multiple populations and different individuals) was addressed in this methodology. OPM's six survey years included the following demographic items: work location, supervisory status, gender, ethnicity, race or national origin, age group, pay category, federal tenure, agency tenure, planning to leave, and planning to retire. From 2012 to 2013, OPM added three more demographic items: sexual orientation, veteran status, and disability status. Appendix E shows the complete demographic items for all six survey years with the respondent percentages. Strategy S4 (include multiple case studies) was also addressed in this methodology. Table 22 shows the six years of OPM research conducted using "approximately 97 percent of the executive branch workforce (and an) invitation (was sent) to all small and independent agencies to participate in the FHCS" (OPM, 2006a, p. 34; OPM, 2008, p. 36; OPM, 2010, p. 23; OPM, 2011a, p. 27; OPM, 2012a, p. 32; OPM, 2013a, p. 27). Strategy S5 (test the

original theory on alternate, randomized populations which are not included in the test) was a key tenant in this methodology. This research aimed to extend private industry's generational differences in the workplace theory into the federal government domain. However, if the results to the research questions and hypotheses, shown in Tables 3 and 4 respectively, extend or disprove a previous theory researched in private industry, then future research can be identified as a result. Strategy S6 (conduct the test in a natural setting instead of a lab environment) was also addressed in this methodology. For 2006 through 2012 surveys, the data collection method was a "self-administered web survey (and) OPM distributed paper versions of the survey to components of agencies that did not have electronic access" (OPM, 2006a, p. 35; OPM, 2008, p. 37; OPM, 2010, p. 24; OPM, 2011a, p. 38; OPM, 2012a, p. 32), while the 2013 survey was administered online only (OPM, 2013a). Strategy S7 (include as many independent variables as possible) was addressed in this methodology. Table 23 shows the six workplace indices, or independent variables. Included in the table are the numbers of questions per independent variable.

**Table 23: Survey Workplace Indices**

<b>Workplace Indices</b>	<b>2013</b>	<b>2012</b>	<b>2011</b>	<b>2010</b>	<b>2008</b>	<b>2006</b>
Leadership and Knowledge Management	12	12	12	12	12	12
Results-Oriented Performance Culture	13	13	13	13	13	13
Talent Management	7	7	7	7	7	7
Job Satisfaction	7	7	7	7	7	7
Global Satisfaction	4	4	4	<u>4</u>	<u>4</u>	<u>4</u>
Stayers and Leavers	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>
<b>Employee Engagement</b>						
Sub Category - Leaders Lead	5	5	5	5*	4*	4*
Sub Category - Supervisors	5	5	5	5*	3*	3*
Sub Category – Intrinsic Work Experiences	5	5	5	5*	4*	4*
<b>NOTES</b>						
#	Exact matching items to the baseline survey years AND was reported during this survey year					
#	Exact matching items to the baseline survey years					
#*	A subset of exact matching items to the baseline survey years AND was reported during this survey year					

Sources: (OPM, 2006a; OPM, 2008; OPM, 2010; OPM, 2011a; OPM, 2011b; OPM, 2012a; OPM, 2013a)

Lee and Baskerville (2003) point out that “generalizability is a major concern to those who do, and use, research” (p. 221). This concern is shared among many practitioners who strive to answer questions based on sound, methodological principles. The concern, as Meredith (1998) states, is that “research that is weak in generalizability cannot provide an adequate test of theory” (p. 451). A theory with subpar generalizability has a reduction in usefulness (Lee & Baskerville, 2003). The overall utility of this research was expected to have high generalizability, therefore, increasing the relevance of the findings (Ibid).

Reliability, or reliability coefficient, “assesses the consistency of the entire scale” and an industry standard for accepted variable reliability (Cronbach’s alpha) is between 0.6 and 0.7, where above 0.7 is considered good (Hair, Black, Babin, & Anderson, 2010, p. 124). As the number of items within each index increases, the reliability also increases

(and the scale should increase) especially when the number of items reach and surpasses ten (Ibid). Because the six indices were not constructed using exploratory or confirmatory factor analysis, rather a psychometric approach (Federal Employee Viewpoint Survey Team, personal communication, January 2, 2014), caution is given to the reliability assessment for all six indices.

## DATA ANALYSIS

OPM's datasets for each year (2006, 2008, 2010, 2011, 2012, and 2013) were classified as complete if the respondent answered at least 25% of the non-demographic questions within that given year (OPM, 2011b; OPM, 2012b). The resulting numbers of complete responses are those reported in Table 22 as the total number of respondents.

As previously outlined in the instruments section, all six indices' items utilized three different types of a five point Likert scale; except the single question in Global Satisfaction – Stayers and Leavers, which used a yes or no scale. OPM (2012b) outlines the different Likert scales used and how they were collapsed by OPM.

*Analysts collapsed the positive and negative response options to facilitate managers' use of the data. For all questions using (Likert) response scales, the proportions of positive, neutral, and negative responses are defined as follows:*

- *Percent Positive: the combined percentages of respondents who answered Strongly Agree or Agree; Very Satisfied or Satisfied; or Very Good or Good, depending on the item's response categories.*

- *Percent Neutral: the percentage of respondents choosing the middle response option in the 5-point scale (Neither Agree nor Disagree, Neither Satisfied nor Dissatisfied, Fair).*
- *Percent Negative: the combined percentages of respondents answering Strongly Disagree or Disagree; Very Dissatisfied or Dissatisfied; or Very Poor or Poor, depending on the item's response categories*
- *Do Not Know or No Basis to Judge, were not included in the calculation of response percentages for those questions. (p. 26)*

Each of the six index scores were reported using a three step process: 1) calculating the percent positive (unrounded) for each item within the indices, 2) unrounded scores were averaged within each of the six indices to produce each index score, and 3) the index score was rounded for reporting (OPM, 2011b; OPM, 2012b). Global Satisfaction also included the percent neutral, percent negative and Global Satisfaction (Stayers and Leavers) as part of the reporting process (OPM, 2012b). Additionally, Employee Engagement utilized the three step process for each of the three sub categories. The overall Employee Engagement index used an added step of averaging each of the three unrounded sub categories index scores and rounded for reporting (Ibid). Statistical testing was not performed on the six indices. This dissertation performed statistical testing on the six indices to answer all three research questions.

Research question one, *Are there overall differences of all generations within the federal government utilizing OPM's six workplace indices from the years 2010 through*

2013?, question two, *Are there differences in any given year (from 2010 through 2013) between generations within the federal government utilizing OPM's six workplace indices?*, and question three, *Are there overall differences between generations within the federal government utilizing OPM's six workplace indices from the years 2010 through 2013?*, was analyzed using statistical methods. When OPM performed their trend analysis (single question comparisons over time that had percent positive calculations) they used the Student's t-test to test for statistical significance. "To reduce the likelihood of incorrectly concluding that significant differences exist when there are multiple subgroup comparisons (such as supervisory status), analysts used SAS's Proc Multtest (the false discovery rate [FDR] method) to adjust the significance-test probability" (OPM, 2011b; OPM, 2012b). A request was made to the FEVS staff for access to this software for this research analysis. The FEVS staff noted that the software was not currently set up to run these types of statistical analyses; therefore this analysis did not use SAS's Proc Multtest software. This dissertation used IBM's SPSS to analyze the data.

Warachan (2011) investigated three different analysis methods using 5 and 7 point Likert scales of two independent groups. Their recommendation stated the "t-test is suitable to be used with large sample size ( $n > 100$ ) under the uniform, moderate skewed or symmetric distribution" (Ibid, p. 88). Using the t-test with a five point Likert scale makes the assumption each of the points are equally spaced apart. Stevens (1946) notes that "an interval scale can be erected only provided we have an operation for determining equality of intervals, for determining greater or less, and for determining equality (not greater and not less)" (p. 678). Norman (2010) adds that "Likert questions or items may

well be ordinal, Likert scales, consisting of sums across many items, will be interval” (p. 629). The research questions are indeed a summation of individual Likert questions and statement, therefore, this research assumed the measurement scale was interval.

Furthermore, T. Lewis stated that OPM’s statisticians assumed the data to have equal variances, a normal distribution, and each of the five points in the Likert scale equally spaced apart making the measurement scale denoted as an interval (personal communication, December 3, 2013). McCrum-Gardner (2008) also recommends an independent samples t-test under this research’s outlined data criteria also assuming equal measurement spacing. And finally, Brown (2011) remarks:

- 1. Likert scales are totals or averages of answers to multiple Likert items.*
  - 2. Likert scales contain multiple items and are therefore likely to be more reliable than single items.*
  - 3. Naturally, the reliability of Likert scales should be checked using Cronbach alpha or another appropriate reliability estimate.*
  - 4. Likert scales contain multiple items and can be taken to be interval scales so descriptive statistics can be applied, as well as correlational analyses, factor analyses, analysis of variance procedures, etc. (if all other design conditions and assumptions are met).*
- (p. 13)

All three research questions utilized the following assumptions: 1) the measurement scales for the six indices are interval, 2) there is a single independent variable: (depending on the question) “generation” consisting of five sub-levels (Generation Y, Generation X, Baby Boomers, or one of two dual generation categories,

depending on the year) or year consisting of the years 2006 through 2013, and 3) there are six dependent variables (index scores).

Table 24 shows each answer choice within a given year (which shows the specific, or not, generation) for the primary analysis. The answer choices provide a basis for the four levels of the independent variable for this analysis, called “generation.” The three generations are represented in Table 24 along with two indistinguishable levels denoted by Y/X and X/BB to equal the five independent variables.

**Table 24: Independent Variable – Generation (Primary Analysis)**

Answer Choices	2013	2012	2011	2010
[A] 25 and under	Y	Y	Y	Y
[B] 26 – 29	Y	Y	Y/X	Y/X
[C] 30 – 39	Y/X	X	X	X
[D] 40 – 49	X/B B	X/B B	X/B B	X/B B
[E] 50 – 59	BB	BB	BB	BB
[F] 60 or older	BB	BB	BB	BB
<b>NOTES</b>				
	Dual generations (cannot decipher individual generation)			

Table 25 shows each answer choice within a given year (which shows the specific, or not, generation) for the first excursion analysis. The answer choices provide a basis for the four levels of the independent variable for this analysis, called “generation.” The three generations are represented in Table 25 along with two indistinguishable levels denoted by Y/X and X/BB to equal the five independent variables.

**Table 25: Independent Variable – Generation (First Excursion Analysis)**

Answer Choices	2013	2012	2011	2010	2008	2006
[A] 25 and under	Y	Y	Y	Y	Y	Y/X
[B] 26 – 29	Y	Y	Y/X	Y/X	X	X
[C] 30 – 39	Y/X	X	X	X	X	X
[D] 40 – 49	X/B B	X/B B	X/B B	X/B B	X/B B	X/B B
[E] 50 – 59	BB	BB	BB	BB	BB	BB
[F] 60 or older	BB	BB	BB	BB	BB	BB
<b>NOTES</b>						
	Dual generations (cannot decipher individual generation)					

Table 26 shows each answer choice within a given year (which shows the specific, or not, generation) for the second excursion analysis. This excursion utilized Generation Y's beginning birth year to 1977 (the opposite end of the literature review spectrum) and Generation X's ending birth year to 1976 (to match with Generation Y's beginning birth year). The three generations are represented in Table 26 along with two indistinguishable levels denoted by Y/X and X/BB to equal the five independent variables.

**Table 26: Independent Variable – Generation (Second Excursion Analysis)**

Answer Choices	2013	2012	2011	2010	2008	2006
[A] 25 and under	Y	Y	Y	Y	Y	Y
[B] 26 – 29	Y	Y	Y	Y	Y	Y
[C] 30 – 39	Y/X	Y/X	Y/X	Y/X	Y/X	X
[D] 40 – 49	X/B B	X/B B	X/B B	X/B B	X/B B	X/B B
[E] 50 – 59	BB	BB	BB	BB	BB	BB
[F] 60 or older	BB	BB	BB	BB	BB	BB
<b>NOTES</b>						
	Dual generations (cannot decipher individual generation)					

Stevens (1946) recommends using the mean and standard deviation when determining the measurement scale is interval. Therefore the statistical test chosen to answer research questions one, two, and three is a one-way ANOVA with the statistical significance alpha level set to 0.05<sup>5</sup>. Using ANOVA requires the data to pass the following assumptions: the “dependent variable is normally distributed, the groups are independent in their responses on the dependent variable, variances are equal (homogeneous) for all treatment groups, and examine the data for outliers” (Hair, Black, Babin, & Anderson, 2010, p. 364). Normal distribution of the dependent variable was assessed by visual inspection of normal (quantile) Q-Q plots. The groups within each research question are independent compared to the dependent variable. Research question one utilized the independent variable “year” and the dependent variable “index score.” Research questions two and three utilized the independent variable “age” consisting of five sub-levels where the respondent chose their age based on six answer choices (further binned to Generation Y, Generation X, Baby Boomers, or two dual generation categories, depending on the year) and the dependent variable called “index score.” Homogeneity of variances was assessed by Levene’s Test of Homogeneity. If there was not homogeneity of variances, post-hoc tests (pairwise comparisons) were run. Otherwise, a reporting of the descriptive statics without post-hoc tests was presented. Outliers are defined as “extreme responses ‘that’ may unduly influence the outcome of any multivariate analysis” (Ibid, p. 33). Because the responses were on a five point Likert scale and no data fell outside of this five point scale, no data was deemed extreme

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<sup>5</sup> “Due to confidentiality reasons individual id’s cannot be matched between years” (personal communication, March 27, 2014); therefore a longitudinal analysis cannot be undertaken.

and all data was kept and used in the analysis to not lose any useful information. As a result, the analysis did not include checking for outliers.

Analyzing very large sample sizes (as this study did) will result in “smaller effects will be found to be statistically significant” (Hair, Black, Babin, & Anderson, 2010, p. 11). Cohen (1988) proposed rules of thumb for interpreting effect sizes: a “small” effect size is around .20, a “medium” effect size is around .50, and a “large” effect size is around .80. This study used these rules of thumb (Cennamo & Gardner, 2008; Costanza, Badger, Fraser, Severt, & Gade, 2012; Hess & Jepsen, 2009) underpinned with Cohen’s (1988) recommendation:

*“There is a certain risk in offering conventional operational definitions for (small, medium, and large). The risk is nevertheless accepted in the belief that more is to be gained than lost by supplying a common conventional frame of reference which is recommended for use only when no better basis for estimating effect size index is available” (p. 25).*

The following descriptive statistics that were reported for each hypothesis are the sample size, mean, mean differences, standard deviation, standard error of the mean, lower and upper confidence interval bound of the mean, effect size, and index reliability.

Questions 1-3 hypotheses are extended mathematically for clarity. Question 1: Are there overall differences of all generations within the federal government utilizing OPM’s six workplace indices from the years 2010 through 2013?

$H_{01}(\text{Index \#}):$  All related group populations are combined within each year such that all yearly population means are equal (e.g. for Index 1:  $\mu_{2013} = \mu_{2012} = \mu_{2011} = \mu_{2010}$ )

$H_{11}(\text{Index \#})$ : All related group populations are combined within each year such that at least one yearly population mean is not equal

Question 2: Are there differences in any given year (from 2010 through 2013) between generations within the federal government utilizing OPM's six workplace indices?

$H_{02}(\text{Index \#})\text{-Year}$ : All related group population means are equal within a given year (e.g. for 2013:  $\mu_{Y(\text{Index } 1)} = \mu_{Y/X(\text{Index } 1)} = \mu_{X(\text{Index } 1)} = \mu_{X/BB(\text{Index } 1)} = \mu_{BB(\text{Index } 1)}$ )

$H_{12}(\text{Index \#})\text{-Year}$ : At least one related group population mean is different

Question 3: Are there overall differences between generations within the federal government utilizing OPM's six workplace indices from the years 2010 through 2013?

$H_{03}(\text{Index \#})\text{-(Generation)}$ : All related group population means are equal (e.g. for Index 1:  $\mu_{Y(2010-2013)} = \mu_{Y/X(2010-2013)} = \mu_{X(2010-2013)} = \mu_{X/BB(2010-2013)} = \mu_{BB(2010-2013)}$ )

$H_{13}(\text{Index \#})\text{-(Generation)}$ : At least one related group population mean is different

There are two distinct excursion analyses. The first excursion analysis expanded the three primary analysis questions to include data from 2006 and 2008. The notation used for these three questions is the lower case  $e_{\#}$ , where the “#” denotes first or second excursion.

Question 1e<sub>1</sub>: Are there overall differences of all generations within the federal government utilizing OPM's six workplace indices from the years 2006 through 2013?

$H_{01(\text{Index \#})}$ : All related group populations are combined within each year such that all yearly population means are equal (e.g. for Index 1:  $\mu_{2013} = \mu_{2012} = \mu_{2011} = \mu_{2010} = \mu_{2008} = \mu_{2006}$ )

$H_{11(\text{Index \#})}$ : All related group populations are combined within each year such that at least one yearly population mean is not equal

Question 2e<sub>1</sub>: Are there differences in any given year (from 2006 through 2008) between generations within the federal government utilizing OPM's six workplace indices?

$H_{02(\text{Index \#})-\text{Year(e)}}$ : All related group population means are equal within a given year (e.g. for 2008:  $\mu_{Y(\text{Index 1})} = \mu_{Y/X(\text{Index 1})} = \mu_{X(\text{Index 1})} = \mu_{X/BB(\text{Index 1})} = \mu_{BB(\text{Index 1})}$ )

$H_{12(\text{Index \#})-\text{Year(e)}}$ : At least one related group population mean is different

Question 3e<sub>1</sub>: Are there overall differences between generations within the federal government utilizing OPM's six workplace indices from the years 2006 through 2013?

$H_{03(\text{Index \#})-(\text{Generation})e}$ : All related group population means are equal (e.g. for Index 1:  $\mu_{Y(2006-2013)} = \mu_{Y/X(2006-2013)} = \mu_{X(2006-2013)} = \mu_{X/BB(2006-2013)} = \mu_{BB(2006-2013)}$ )

$H_{13(\text{Index \#})-(\text{Generation})e}$ : At least one related group population mean is different

The second excursion analysis repeated only question two and three in the primary and first excursion analysis, all using different birth year designations for Generation Y and Generation X. Question one was not repeated because it's a summation of all generations, regardless of birth year designation. The second excursion analysis used Generation Y's beginning birth year of 1977 (the opposite end of the literature review spectrum) and Generation X's ending birth year of 1976 (to match with Generation Y's beginning birth year).

Table 27 shows the number of hypotheses for the primary and excursion analyses. The primary analysis tested a total of 36 hypotheses, while the excursion analysis tested a total of 72 hypotheses for an overall total of 108 hypotheses tested.

**Table 27: Primary and Excursion Analysis Total Hypotheses**

Question	Gen X ending birth year (1982) Gen Y beginning birth year (1983)		Gen X ending birth year (1976) Gen Y beginning birth year (1977)	
	Primary Analysis	First Excursion Analysis	Second Excursion Analysis	Second Excursion Analysis
1	6	6	0	0
2	24	12	24	12
3	6	6	6	6

## ETHICAL CONSIDERATIONS

Survey respondents were sent an invitation by OPM to take the survey, as shown in Appendix F. Demographic data were collected, however; safeguards were put in place to maximize respondent anonymity.

*The FEVS collects demographic data from Federal employees. If someone has access to the full FEVS data file as well as secondary data sources on 2012 FEVS respondents, they might be able to cross the two sets of data and identify individual respondents. A public release data file that masks individually identifiable information was created to minimize that possibility. The overall strategy for ensuring confidentiality comprised four steps: (1) masking all agencies with fewer than 20 respondents and sub-agencies (1st – 3rd level sub-agencies for some agencies) with fewer than 20 respondents; (2) removing identifiers such as respondent's name, employee number, email address, and telephone number from the survey data file; (3) collapsing response groups; and (4) suppressing key demographic characteristics to prevent identification of individuals. The four steps were implemented for all participating FEVS agencies included in the public release data set. (OPM, 2011b, p. 34; OPM, 2012b, p. 33).*

The survey link was secure sockets layer encrypted via 128 bit (Federal Employee Viewpoint Survey Team, personal communication, January 2, 2014). This encryption is commonly used for online banking sites that transmit secured information.

*Respondents' records are in OPM's secure system, and available only to research staff dedicated to survey analysis. We use a randomly assigned code number "EmpID" on each data line to provide additional security. The public release data file has a combination of masking of small cells*

*and collapsing of key demographics to ensure an individual's responses cannot be identified* (OPM, 2011b, p. 34; OPM, 2012b, p. 33).

A privacy act statement (per 5 U.S.C. 301) was provided to each participant as an informed consent to taking the survey (Ibid). The following chapter will present the findings of the research questions and hypotheses via the systematic application of the proposed methodology.

## CHAPTER IV: RESULTS

### INTRODUCTION

The purpose of this chapter is to report the results of the primary and excursion research questions' hypotheses. All hypotheses in this study were evaluated using one-way ANOVA statistical tests with all p-values set to 0.05. Prior to running the one-way ANOVA, the following three<sup>6</sup> assumptions were tested: the "dependent variable is normally distributed, the groups are independent in their responses on the dependent variable, and the variances are equal (homogeneous) for all treatment groups" (Hair, Black, Babin, & Anderson, 2010, p. 364). If there was not homogeneity of variances, post-hoc tests were shown. The descriptive statistics that were reported for each hypothesis are the sample size, mean<sup>7</sup>, mean differences, standard deviation, standard error of the mean, lower and upper confidence interval bound of the mean, effect size, and index reliability.

This chapter has the following order:

#### *Primary Analysis (2010-2013)*

Q1 (6 hypotheses), Q2 (24 hypotheses), and Q3 (6 hypotheses)

#### *First Excursion Analysis (2006-2013)*

Q1e (6 hypotheses), Q2e (12 hypotheses), and Q3 (6 hypotheses)

#### *Second Excursion Analysis (2010-2013)*

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<sup>6</sup> As mentioned in Chapter 3, all responses were on a five point Likert scale and the analysis did not include checking for outliers.

<sup>7</sup> Mean and standard deviation are denoted as: Mean  $\pm$  Standard Deviation

Q1e<sub>1</sub> (0 hypotheses), Q2e<sub>1</sub> (24 hypotheses), and Q3e<sub>1</sub> (6 hypotheses)

*Second Excursion Analysis (2006-2013)*

Q1e<sub>2</sub> (0 hypotheses), Q2e<sub>2</sub> (12 hypotheses), and Q3e<sub>2</sub> (6 hypotheses)

The second excursion analysis did not test question one because it's a summation of all generations, regardless of birth year designation and was tested in the primary and first excursion analysis. The primary and first excursion analysis used Generation Y's beginning birth year of 1983 and Generation X's ending birth year of 1982. The second excursion analysis used Generation Y's beginning birth year of 1977 and Generation X's ending birth year of 1976.

One index, Job Satisfaction, has a sub-category called Stayers and Leavers. This sub-category's data will be presented at the end of the primary analysis only and is not associated with any hypothesis testing.

## **DATA CLEANING AND DEMOGRAPHICS**

OPM supplied survey results were delivered in a slightly different format than available to the general public. OPM survey data available on their website has safeguards in place to increase respondent anonymity. One such safeguard was to: "collapse response groups" (OPM, 2011b, p. 34; OPM, 2012b, p. 33) *A: 25 and under* and *B: 26-29* to the question: What is your age group? This age group collapsed into a single group of *29 and under* did not permit the level of fidelity needed to perform the analysis directed by the hypotheses. OPM separated the two collapsed age groups and removed all other demographic statement and question answers to maintain respondent

anonymity. Additionally, the supplied data file only contained respondent answers to the six indices, further increasing respondent anonymity.

The data set used in this analysis contained 2,037,977 data points; 10,160 more data points than cited in OPM's reports from 2006-2013 (shown in Table 11). The data set was "put together from an internal data source that still maintains a few historical records pertaining to sampled individuals later determined to be ineligible. These records have a positive weight but no data for any of the items, so they have no impact on estimates" (personal communication, May 28, 2014). There were 139,540 respondents who did not answer the question: What is your age group? Since this analysis was predicated upon binning respondents into a generation, these data points were subsequently removed. The final sample size decreased to 1,898,437 (2006 through 2013 data). In the next section, the results of the primary questions and hypotheses are presented in detail, along with reliability and effect size discussions. Following the primary section, the results of excursion questions and hypotheses are presented in high level with supporting data provided in Appendices H, I, and J.

### **PRIMARY ANALYSIS (2010-2013)**

The primary analysis focused on data from 2010-2013, omitting 2006 and 2008. 2006 and 2008 were excluded because both do not have the same questions set for the Employee Engagement Index. This analysis has three questions with the following number of hypotheses per question: Question 1 (6 hypotheses), Question 2 (24 hypotheses), and Question 3 (6 hypotheses).

## PRIMARY ANALYSIS (2010-2013) – QUESTION 1

Question 1: Are there overall differences of all generations within the federal government utilizing OPM's six workplace indices from the years 2010 through 2013?

$H_{01}(\text{Index \#}):$  All related group populations are combined within each year such that all yearly population means are equal (e.g. for Index 1:  $\mu_{2013} = \mu_{2012} = \mu_{2011} = \mu_{2010}$ )

$H_{11}(\text{Index \#}):$  All related group populations are combined within each year such that at least one yearly population mean is not equal

The sample size for question one is shown in Table 28.

**Table 28: Primary Analysis (2010-2013) – Question 1: Sample Size**

Year	Sample Size
2010	248,026
2011	245,208
2012	634,181
2013	344,839
TOTAL	1,472,254

The data were normally distributed for all six indices, as assessed by visual inspection of Normal Q-Q Plots. Homogeneity of variances was violated for all six indices, as assessed by Levene's Test of Homogeneity of Variances ( $p < .001$ ), shown in Appendix G.

Leadership and Knowledge Management index score was statistically significant between the years, Welch's  $F(3,641892.423) = 521.069$ ,  $p < .001$ . Leadership and Knowledge Management scores (shown in Figure 6) increased from 2010 ( $3.59 \pm 0.79$ ) to 2011 ( $3.61 \pm 0.78$ ) and then decreased in 2012 ( $3.56 \pm 0.81$ ) and again in 2013 ( $3.54 \pm 0.82$ ). The means, standard deviations, standard errors, and 95% confidence intervals for each year are shown in Appendix G. Games Howell post-hoc analysis revealed all mean difference scores were statistically significant ( $p < .001$ ). The mean differences, significance levels, standard errors, 95% mean difference confidence intervals, and Cohen's  $d$  for yearly comparisons are shown in Table 29. There was a statistically significant difference between means ( $p < .001$ ) and, therefore, the null hypothesis is rejected and the alternative hypothesis is accepted.

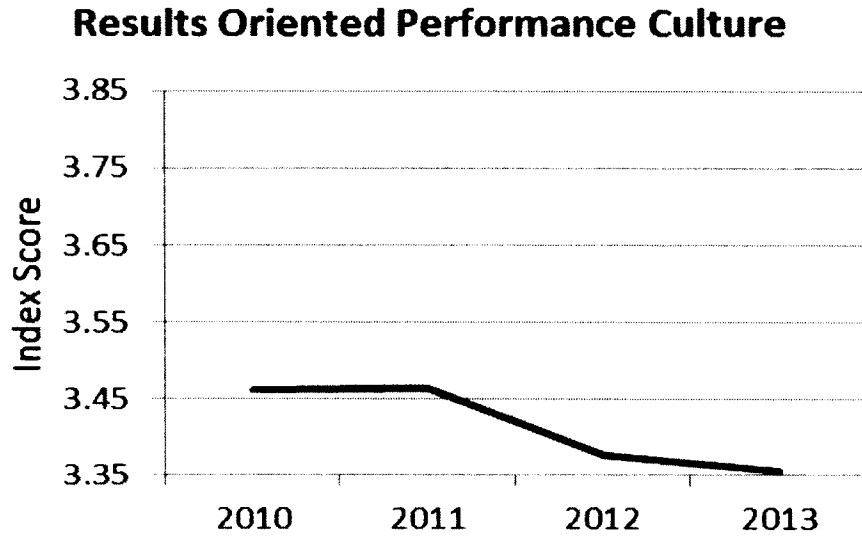


**Figure 6: Primary Analysis (2010-2013) – Question 1: Leadership and Knowledge Management Index Score**

**Table 29: Primary Analysis (2010-2013) – Question 1: Leadership and Knowledge Management Post-Hoc Analysis**

Comparison Years		Mean Difference	Standard Error	95% Confidence Interval		Cohen's d
				Lower Bound	Upper Bound	
2010	2011	-.02459***	.00225	-.0304	-.0188	-.031
	2012	.02888***	.00189	.0240	.0337	.036
	2013	.05241***	.00212	.0470	.0579	.065
2011	2012	.05347***	.00188	.0486	.0583	.067
	2013	.07700***	.00211	.0716	.0824	.095
2012	2013	.02353***	.00173	.0191	.0280	.029
***p < .001						

Results-Oriented Performance Culture index score was statistically significant between the years, Welch's  $F(3,641236.751) = 1630.569$ ,  $p < .001$ . Results-Oriented Performance Culture scores (shown in Figure 7) remained the same from 2010 ( $3.46 \pm 0.78$ ) to 2011 ( $3.46 \pm 0.78$ ) and then decreased in 2012 ( $3.38 \pm 0.8$ ) and again in 2013 ( $3.36 \pm 0.8$ ). The means, standard deviations, standard errors, and 95% confidence intervals for each year are shown in Appendix G. Games Howell post-hoc analysis revealed the scores from 2010 to 2011 were not statistically significant ( $p = .927$ ) and all other mean difference scores were statistically significant ( $p < .001$ ). The mean differences, significance levels, standard errors, 95% mean difference confidence intervals, and Cohen's d for yearly comparisons are shown in Table 30. There was a statistically significant difference between means ( $p < .001$ ) and, therefore, the null hypothesis is rejected and the alternative hypothesis is accepted.



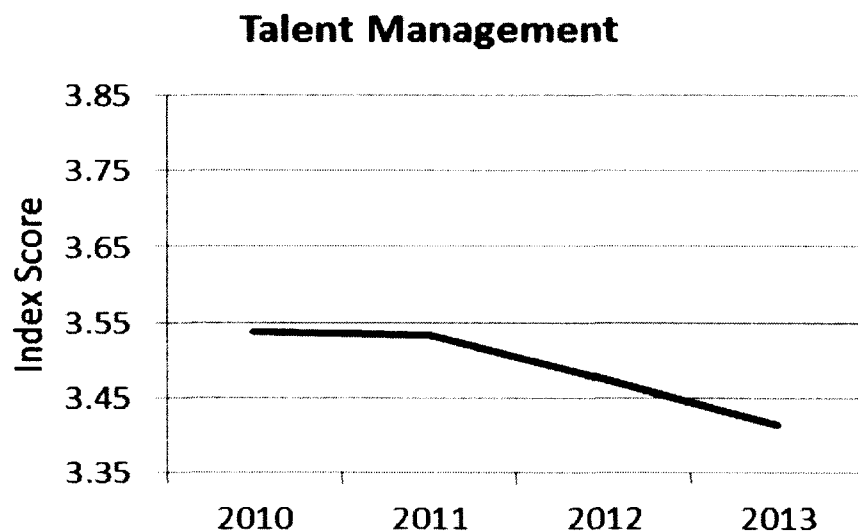
**Figure 7: Primary Analysis (2010-2013) – Question 1: Results-Oriented Performance Culture Index Score**

**Table 30: Primary Analysis (2010-2013) – Question 1: Results-Oriented Performance Culture Post-Hoc Analysis**

Comparison Years		Mean Difference	Standard Error	95% Confidence Interval		Cohen's d
				Lower Bound	Upper Bound	
2010	2011	-.00137 (p=.927)	.00222	-.0071	.0043	-.002
	2012	.08660***	.00186	.0818	.0914	.109
	2013	.10717***	.00208	.1018	.1125	.135
2011	2012	.08797***	.00186	.0832	.0927	.111
	2013	.10854***	.00208	.1032	.1139	.137
2012	2013	.02057***	.00169	.0162	.0249	.026
***p < .001						

Talent Management index score was statistically significant between the years, Welch's  $F(3,641035.192) = 1361.592$ ,  $p < .001$ . Talent Management scores (shown in

Figure 8) decreased from 2010 ( $3.54 \pm 0.84$ ), to 2011 ( $3.53 \pm 0.83$ ), to 2012 ( $3.48 \pm 0.85$ ), to 2013 ( $3.42 \pm 0.87$ ). The means, standard deviations, standard errors, and 95% confidence intervals for each year are shown in Appendix G. Games Howell post-hoc analysis revealed the scores from 2010 to 2011 were not statistically significant ( $p=.215$ ) and all other mean difference scores were statistically significant ( $p < .001$ ). The mean differences, significance levels, standard errors, 95% mean difference confidence intervals, and Cohen's d for yearly comparisons are shown in Table 31. There was a statistically significant difference between means ( $p < .001$ ) and, therefore, the null hypothesis is rejected and the alternative hypothesis is accepted.

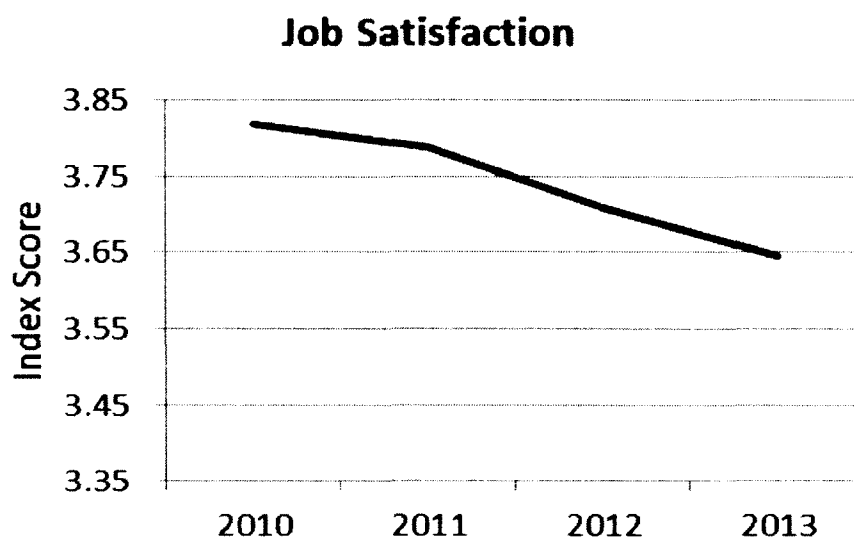


**Figure 8: Primary Analysis (2010-2013) – Question 1: Talent Management Index Score**

**Table 31: Primary Analysis (2010-2013) – Question 1: Talent Management Post-Hoc Analysis**

Comparison Years		Mean Difference	Standard Error	95% Confidence Interval		Cohen's d
				Lower Bound	Upper Bound	
2010	2011	.00458 (p=.215)	.00237	-.0015	.0107	.006
	2012	.06215***	.00199	.0570	.0673	.074
	2013	.12209***	.00224	.1163	.1278	.143
2011	2012	.05757***	.00199	.0525	.0627	.068
	2013	.11751***	.00223	.1118	.1232	.138
2012	2013	.05994***	.00182	.0553	.0646	.070
***p < .001						

Job Satisfaction index score was statistically significant between the years, Welch's  $F(3,642358.265) = 3189.777$ ,  $p < .001$ . Job Satisfaction scores (shown in Figure 9) decreased from 2010 ( $3.82 \pm 0.73$ ), to 2011 ( $3.79 \pm 0.73$ ), to 2012 ( $3.71 \pm 0.76$ ), to 2013 ( $3.65 \pm 0.78$ ). The means, standard deviations, standard errors, and 95% confidence intervals for each year are shown in Appendix G. Games Howell post-hoc analysis revealed all mean difference scores were statistically significant ( $p < .001$ ). The mean differences, significance levels, standard errors, 95% mean difference confidence intervals, and Cohen's d for yearly comparisons are shown in Table 32. There was a statistically significant difference between means ( $p < .001$ ) and, therefore, the null hypothesis is rejected and the alternative hypothesis is accepted.



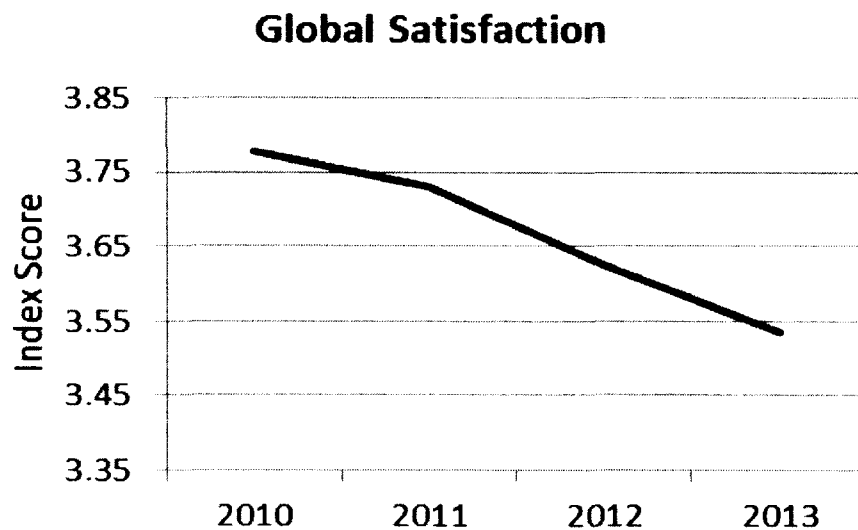
**Figure 9: Primary Analysis (2010-2013) – Question 1: Job Satisfaction Index Score**

**Table 32: Primary Analysis (2010-2013) – Question 1: Job Satisfaction Post-Hoc Analysis**

Comparison Years		Mean Difference	Standard Error	95% Confidence Interval		Cohen's d
				Lower Bound	Upper Bound	
2010	2011	.03060***	.00209	.0252	.0360	.042
	2012	.10899***	.00175	.1045	.1135	.145
	2013	.17218***	.00198	.1671	.1773	.226
2011	2012	.07840***	.00176	.0739	.0829	.105
	2013	.14158***	.00199	.1365	.1467	.186
2012	2013	.06319***	.00163	.0590	.0674	.083
***p < .001						

Global Satisfaction index score was statistically significant between the years, Welch's  $F(3,643018.993) = 4339.227$ ,  $p < .001$ . Global Satisfaction scores (shown in

Figure 10) decreased from 2010 ( $3.78 \pm 0.87$ ), to 2011 ( $3.73 \pm 0.87$ ), to 2012 ( $3.63 \pm 0.9$ ), to 2013 ( $3.54 \pm 0.93$ ). The means, standard deviations, standard errors, and 95% confidence intervals for each year are shown in Appendix G. Games Howell post-hoc analysis revealed all mean difference scores were statistically significant ( $p < .001$ ). The mean differences, significance levels, standard errors, 95% mean difference confidence intervals, and Cohen's d for yearly comparisons are shown in Table 33. There was a statistically significant difference between means ( $p < .001$ ) and, therefore, the null hypothesis is rejected and the alternative hypothesis is accepted.



**Figure 10: Primary Analysis (2010-2013) – Question 1: Global Satisfaction Index Score**

**Table 33: Primary Analysis (2010-2013) – Question 1: Global Satisfaction Post-Hoc Analysis**

Comparison Years		Mean Difference	Standard Error	95% Confidence Interval		Cohen's d
				Lower Bound	Upper Bound	
2010	2011	.04517***	.00247	.0388	.0515	.052
	2012	.15067***	.00208	.1453	.1560	.169
	2013	.24028***	.00236	.2342	.2463	.265
2011	2012	.10550***	.00208	.1001	.1109	.118
	2013	.19511***	.00236	.1890	.2012	.216
2012	2013	.08961***	.00194	.0846	.0946	.098
***p < .001						

Employee Engagement index score was statistically significant between the years, Welch's  $F(3,640759.448) = 502.451$ ,  $p < .001$ . Employee Engagement scores (shown in Figure 11) slightly increased from 2010 ( $3.75 \pm 0.83$ ) to 2011 ( $3.75 \pm 0.82$ ) and then decreased in 2012 ( $3.7 \pm 0.84$ ), and again in 2013 ( $3.68 \pm 0.85$ ). The means, standard deviations, standard errors, and 95% confidence intervals for each year are shown in Appendix G. Games Howell post-hoc analysis revealed all mean difference scores were statistically significant ( $p < .05$ ). The mean differences, significance levels, standard errors, 95% mean difference confidence intervals, and Cohen's d for yearly comparisons are shown in Table 34. There was a statistically significant difference between means ( $p < .001$ ) and, therefore, the null hypothesis is rejected and the alternative hypothesis is accepted. The full descriptive statistics table for all indices is shown in Appendix G.



In summation, all index scores from 2010 through 2013 showed a decline. The empirical findings are discussed in Chapter 5. There was a statistically significant difference between means ( $p < .001$ ) for all six hypotheses and, therefore, the null hypotheses are rejected and the alternative hypotheses are accepted for all six hypotheses. Therefore, there are overall differences of all generations within the federal government utilizing OPM's six workplace indices from the years 2010 through 2013.

## **PRIMARY ANALYSIS (2010-2013) – QUESTION 2**

Question 2: Are there differences in any given year (from 2010 through 2013) between generations within the federal government utilizing OPM's six workplace indices?

$H_{02(\text{Index \#})-\text{Year}}$ : All related group population means are equal within a given year (e.g. for 2013:  $\mu_{Y(\text{Index 1})} = \mu_{Y/X(\text{Index 1})} = \mu_{X(\text{Index 1})} = \mu_{X/BB(\text{Index 1})} = \mu_{BB(\text{Index 1})}$ )

$H_{12(\text{Index \#})-\text{Year}}$ : At least one related group population mean is different

The data were normally distributed for all years, as assessed by visual inspection of Normal Q-Q Plots. Homogeneity of variances was violated for all years, as assessed by Levene's Test of Homogeneity of Variances ( $p < .05$ ), shown in Appendix G.

The sample size for 2010 is shown in Table 35.

**Table 35: Primary Analysis (2010-2013) – Question 2: 2010 Sample Size**

<b>Year</b>	<b>Generation</b>	<b>Sample Size</b>
2010	Gen Y	3,217
	Y/X	8,839
	Gen X	35,699
	X/BB	74,101
	BB	126,170

Each generation's Leadership and Knowledge Management index score was statistically significant within the year, Welch's  $F(4,18497.021) = 196.501$ ,  $p < .001$ . Generational scores were: Gen Y ( $3.85 \pm 0.67$ ), Y/X ( $3.7 \pm 0.72$ ), Gen X ( $3.59 \pm 0.77$ ), X/BB ( $3.57 \pm 0.79$ ), and BB ( $3.58 \pm 0.8$ ). The means, standard deviations, standard errors, and 95% confidence intervals for each generation are shown in Appendix G. Games Howell post-hoc analysis revealed all mean difference scores were statistically significant ( $p < .001$ ) except for Y/X and X/BB ( $p = .177$ ). The mean differences, significance levels, standard errors, 95% mean difference confidence intervals, and Cohen's  $d$  for generational comparisons are shown in Table 36. There was a statistically significant difference between generational means ( $p < .001$ ) and, therefore, the null hypothesis is rejected and the alternative hypothesis is accepted.

**Table 36: Primary Analysis (2010-2013) – Question 2: 2010 Leadership and Knowledge Management Post-Hoc Analysis**

Generational Comparisons		Mean Difference	Standard Error	95% Confidence Interval		Cohen's d
				Lower Bound	Upper Bound	
Gen Y	Y/X	.15270***	.01411	.1142	.1912	.215
	Gen X	.26510***	.01252	.2309	.2993	.348
	X/BB	.28503***	.01220	.2517	.3183	.359
	BB	.27665***	.01205	.2438	.3095	.346
Gen X	Y/X	-.11240***	.00870	-.1361	-.0887	-.148
	X/BB	.01993***	.00502	.0062	.0336	.025
	BB	.01155 (p=.095)	.00466	-.0012	.0243	.015
BB	Y/X	-.12395***	.00801	-.1458	-.1021	-.156
	X/BB	.00838 (p=.157)	.00370	-.0017	.0185	.010
Y/X	X/BB	.13233***	.00823	.1099	.1548	.167
***p < .001						

Each generation's Results-Oriented Performance Culture index score was statistically significant within the year, Welch's  $F(4,18435.377) = 66.11$ ,  $p < .001$ . Generational scores were: Gen Y ( $3.63 \pm 0.69$ ), Y/X ( $3.51 \pm 0.73$ ), Gen X ( $3.44 \pm 0.76$ ), X/BB ( $3.45 \pm 0.78$ ), and BB ( $3.46 \pm 0.79$ ). The means, standard deviations, standard errors, and 95% confidence intervals for each generation are shown in Appendix G. Games Howell post-hoc analysis revealed all mean difference scores were statistically significant ( $p < .001$ ) except for Gen Y and BB ( $p = .975$ ). The mean differences, significance levels, standard errors, 95% mean difference confidence intervals, and Cohen's d for generational comparisons are shown in Table 37. There was a statistically significant difference between generational means ( $p < .001$ ) and, therefore, the null hypothesis is rejected and the alternative hypothesis is accepted.

**Table 37: Primary Analysis (2010-2013) – Question 2: 2010 Results-Oriented Performance Culture Post-Hoc Analysis**

Generational Comparisons		Mean Difference	Standard Error	95% Confidence Interval		Cohen's d
				Lower Bound	Upper Bound	
Gen Y	Y/X	.11465***	.01455	.0749	.1544	.159
	Gen X	.18522***	.01294	.1499	.2205	.245
	X/BB	.17832***	.01263	.1438	.2128	.228
	BB	.16806***	.01250	.1339	.2022	.213
Gen X	Y/X	-.07058***	.00876	-.0945	-.0467	-.093
	X/BB	-.00691 (p=.632)	.00496	-.0204	.0066	-.009
	BB	-.01717*	.00461	-.0297	-.0046	-.022
BB	Y/X	-.05341***	.00809	-.0755	-.0313	-.068
	X/BB	.01026*	.00364	.0003	.0202	.013
Y/X	X/BB	.06367***	.00829	.0410	.0863	.082
*p < .05, ***p < .001						

Each generation's Talent Management index score was statistically significant within the year, Welch's  $F(4,18432.96) = 116.964$ ,  $p < .001$ . Generational scores were: Gen Y ( $3.75 \pm 0.73$ ), Y/X ( $3.63 \pm 0.78$ ), Gen X ( $3.55 \pm 0.82$ ), X/BB ( $3.52 \pm 0.84$ ), and BB ( $3.52 \pm 0.84$ ). The means, standard deviations, standard errors, and 95% confidence intervals for each generation are shown in Appendix G. Games Howell post-hoc analysis revealed all mean difference scores were statistically significant ( $p < .05$ ). The mean differences, significance levels, standard errors, 95% mean difference confidence intervals, and Cohen's d for generational comparisons are shown in Table 38. There was a statistically significant difference between generational means ( $p < .001$ ) and, therefore, the null hypothesis is rejected and the alternative hypothesis is accepted.

**Table 38: Primary Analysis (2010-2013) – Question 2: 2010 Talent Management Post-Hoc Analysis**

Generational Comparisons		Mean Difference	Standard Error	95% Confidence Interval		Cohen's d
				Lower Bound	Upper Bound	
Gen Y	Y/X	.11581***	.01546	.0736	.1580	.149
	Gen X	.19843***	.01369	.1611	.2358	.243
	X/BB	.22317***	.01334	.1868	.2596	.266
	BB	.22851***	.01319	.1925	.2645	.273
Gen X	Y/X	-.08263***	.00946	-.1084	-.0568	-.101
	X/BB	.02474***	.00534	.0102	.0393	.030
	BB	.03008***	.00496	.0166	.0436	.036
BB	Y/X	-.11270***	.00872	-.1365	-.0889	-.135
	X/BB	-.00534 (p=.646)	.00390	-.0160	.0053	-.006
Y/X	X/BB	.10736***	.00895	.0830	.1318	.128
***p < .001						

Each generation's Job Satisfaction index score was statistically significant within the year, Welch's  $F(4,18317.479) = 31.665$ ,  $p < .001$ . Generational scores were: Gen Y ( $3.79 \pm 0.71$ ), Y/X ( $3.77 \pm 0.73$ ), Gen X ( $3.79 \pm 0.73$ ), X/BB ( $3.81 \pm 0.73$ ), and BB ( $3.83 \pm 0.73$ ). The means, standard deviations, standard errors, and 95% confidence intervals for each generation are shown in Appendix G. Games Howell post-hoc analysis revealed all mean difference scores were statistically significant ( $p < .001$ ) except for Gen Y and Y/X ( $p = .057$ ). The mean differences, significance levels, standard errors, 95% mean difference confidence intervals, and Cohen's d for generational comparisons are shown in Table 39. There was a statistically significant difference between generational means (p

< .001) and, therefore, the null hypothesis is rejected and the alternative hypothesis is accepted.

**Table 39: Primary Analysis (2010-2013) – Question 2: 2010 Job Satisfaction Post-Hoc Analysis**

Generational Comparisons		Mean Difference	Standard Error	95% Confidence Interval		Cohen's d
				Lower Bound	Upper Bound	
Gen Y	Y/X	.02741 (p=.348)	.01486	-.0131	.0679	.038
	Gen X	.00725 (p=.982)	.01323	-.0289	.0434	.010
	X/BB	-.02175 (p=.446)	.01294	-.0571	.0136	-.030
	BB	-.03270 (p=.080)	.01282	-.0677	.0023	-.044
Gen X	Y/X	.02016 (p=.139)	.00870	-.0036	.0439	.028
	X/BB	-.02900***	.00471	-.0419	-.0161	-.040
	BB	-.03995***	.00439	-.0519	-.0280	-.054
BB	Y/X	.06011***	.00806	.0381	.0821	.082
	X/BB	.01095*	.00340	.0017	.0202	.015
Y/X	X/BB	-.04916*	.00824	-.0716	-.0267	-.067
*p < .05, ***p < .001						

Each generation's Global Satisfaction index score was statistically significant within the year, Welch's  $F(4,18389.344) = 17.603$ ,  $p < .001$ . Generational scores were: Gen Y ( $3.88 \pm 0.79$ ), Y/X ( $3.8 \pm 0.83$ ), Gen X ( $3.77 \pm 0.85$ ), X/BB ( $3.77 \pm 0.86$ ), and BB ( $3.77 \pm 0.87$ ). The means, standard deviations, standard errors, and 95% confidence intervals for each generation are shown in Appendix G. Games Howell post-hoc analysis revealed all mean difference scores were statistically significant ( $p < .001$ ) except for Gen Y and X/BB ( $p = .074$ ) and Gen Y and BB ( $p = .567$ ). The mean differences,

significance levels, standard errors, 95% mean difference confidence intervals, and Cohen's d for generational comparisons are shown in Table 40. There was a statistically significant difference between generational means ( $p < .001$ ) and, therefore, the null hypothesis is rejected and the alternative hypothesis is accepted.

**Table 40: Primary Analysis (2010-2013) – Question 2: 2010 Global Satisfaction Post-Hoc Analysis**

Generational Comparisons		Mean Difference	Standard Error	95% Confidence Interval		Cohen's d
				Lower Bound	Upper Bound	
Gen Y	Y/X	.07441***	.01661	.0291	.1197	.090
	Gen X	.10791***	.01473	.0677	.1481	.127
	X/BB	.10911***	.01438	.0699	.1484	.126
	BB	.10679***	.01424	.0679	.1457	.122
Gen X	Y/X	-.03350*	.00999	-.0607	-.0063	-.039
	X/BB	.00120 ( $p=1.00$ )	.00553	-.0139	.0163	.001
	BB	-.00113 ( $p=.999$ )	.00515	-.0152	.0129	-.001
BB	Y/X	-.03237*	.00924	-.0576	-.0072	-.037
	X/BB	.00232 ( $p=.979$ )	.00404	-.0087	.0133	.003
Y/X	X/BB	.03470*	.00946	.0089	.0605	.040

\* $p < .05$ , \*\*\* $p < .001$

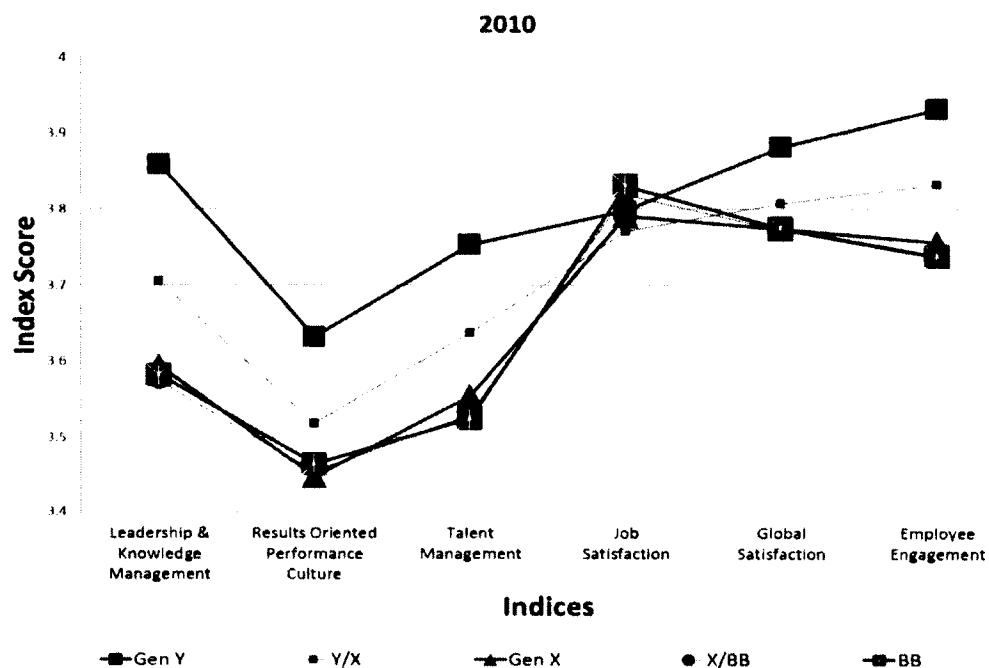
Each generation's Employee Engagement index score was statistically significant within the year, Welch's  $F(4,18511.713) = 93.707$ ,  $p < .001$ . Generational scores were: Gen Y ( $3.93 \pm 0.69$ ), Y/X ( $3.83 \pm 0.74$ ), Gen X ( $3.75 \pm 0.79$ ), X/BB ( $3.73 \pm 0.82$ ), and BB ( $3.73 \pm 0.83$ ). The means, standard deviations, standard errors, and 95% confidence intervals for each generation are shown in Appendix G. Games Howell post-hoc analysis

revealed all mean difference scores were statistically significant ( $p < .001$ ) except for Y/X and X/BB ( $p = .065$ ). The mean differences, significance levels, standard errors, 95% mean difference confidence intervals, and Cohen's  $d$  for generational comparisons are shown in Table 41. There was a statistically significant difference between generational means ( $p < .001$ ) and, therefore, the null hypothesis is rejected and the alternative hypothesis is accepted.

**Table 41: Primary Analysis (2010-2013) – Question 2: 2010 Employee Engagement Post-Hoc Analysis**

Generational Comparisons		Mean Difference	Standard Error	95% Confidence Interval		Cohen's $d$
				Lower Bound	Upper Bound	
Gen Y	Y/X	.09959***	.01463	.0597	.1395	.136
	Gen X	.17550***	.01300	.1400	.2110	.223
	X/BB	.19585***	.01267	.1613	.2304	.238
	BB	.19407***	.01253	.1599	.2283	.233
Gen X	Y/X	-.07591***	.00896	-.1004	-.0515	-.097
	X/BB	.02035***	.00520	.0062	.0345	.025
	BB	.01857***	.00483	.0054	.0317	.022
BB	Y/X	-.09448*	.00826	-.1170	-.0719	-.114
	X/BB	.00178 ( $p=.991$ )	.00385	-.0087	.0123	.002
Y/X	X/BB	.09626***	.00848	.0731	.1194	.117
*** $p < .001$						

All six index scores are plotted against each generation shown in Figure 12.



**Figure 12: Primary Analysis (2010-2013) – Question 2: 2010 Index Score per Generation**

The sample size for 2011 is shown in Table 42.

**Table 42: Primary Analysis (2010-2013) – Question 2: 2011 Sample Size**

Year	Generation	Sample Size
2011	Gen Y	3,763
	Y/X	9,862
	Gen X	38,379
	X/BB	71,708
	BB	121,496

Each generation's Leadership and Knowledge Management index score was statistically significant within the year, Welch's  $F(4,21363.223) = 226.019, p < .001$ . Generational scores were: Gen Y ( $3.88 \pm 0.67$ ), Y/X ( $3.72 \pm 0.71$ ), Gen X ( $3.61 \pm 0.76$ ), X/BB ( $3.6 \pm 0.79$ ), and BB ( $3.6 \pm 0.79$ ). The means, standard deviations, standard errors, and 95% confidence intervals for each generation are shown in Appendix G. Games Howell post-hoc analysis revealed all mean difference scores were statistically significant ( $p < .001$ ) except for BB and X/BB ( $p=.999$ ). The mean differences, significance levels, standard errors, 95% mean difference confidence intervals, and Cohen's d for generational comparisons are shown in Table 43. There was a statistically significant difference between generational means ( $p < .001$ ) and, therefore, the null hypothesis is rejected and the alternative hypothesis is accepted.

**Table 43: Primary Analysis (2010-2013) – Question 2: 2011 Leadership and Knowledge Management Post-Hoc Analysis**

Generational Comparisons		Mean Difference	Standard Error	95% Confidence Interval		Cohen's d
				Lower Bound	Upper Bound	
Gen Y	Y/X	.16398***	.01316	.1280	.1999	.233
	Gen X	.26896***	.01168	.2371	.3008	.356
	X/BB	.28772***	.01141	.2566	.3189	.365
	BB	.28666***	.01125	.2560	.3174	.364
Gen X	Y/X	-.10498***	.00819	-.1273	-.0826	-.139
	X/BB	.01876***	.00488	.0054	.0321	.024
	BB	.01770***	.00450	.0054	.0300	.023
BB	Y/X	-.12268***	.00755	-.1433	-.1021	-.156
	X/BB	.00105 (p=.999)	.00373	-.0091	.0112	.001
Y/X	X/BB	.12374***	.00779	.1025	.1450	.158

\*\*\*p < .001





Each generation's Job Satisfaction index score was statistically significant within the year, Welch's  $F(4,21124.032) = 45.054$ ,  $p < .001$ . Generational scores were: Gen Y ( $3.77 \pm 0.72$ ), Y/X ( $3.72 \pm 0.73$ ), Gen X ( $3.75 \pm 0.72$ ), X/BB ( $3.79 \pm 0.73$ ), and BB ( $3.8 \pm 0.72$ ). The means, standard deviations, standard errors, and 95% confidence intervals for each generation are shown in Appendix G. Games Howell post-hoc analysis revealed all mean difference scores were statistically significant ( $p < .05$ ) except for Gen Y and Gen X ( $p=.482$ ), Gen Y and X/BB ( $p=.732$ ), Gen Y and BB ( $p=.281$ ), and BB and X/BB ( $p=.086$ ). The mean differences, significance levels, standard errors, 95% mean difference confidence intervals, and Cohen's  $d$  for generational comparisons are shown in Table 46. There was a statistically significant difference between generational means ( $p < .001$ ) and, therefore, the null hypothesis is rejected and the alternative hypothesis is accepted.

**Table 46: Primary Analysis (2010-2013) – Question 2: 2011 Job Satisfaction Post-Hoc Analysis**

Generational Comparisons		Mean Difference	Standard Error	95% Confidence Interval		Cohen's d
				Lower Bound	Upper Bound	
Gen Y	Y/X	.05059*	.01399	.0124	.0888	.069
	Gen X	.02021 (p=.482)	.01245	-.0138	.0542	.028
	X/BB	-.015046 (p=.732)	.01219	-.0483	.0182	-.020
	BB	-.023762 (p=.281)	.01206	-.0567	.0092	-.033
Gen X	Y/X	.03038*	.00826	.0078	.0529	.042
	X/BB	-.03526***	.00462	-.0479	-.0226	-.048
	BB	-.04398***	.00426	-.0556	-.0323	-.060
BB	Y/X	.07436***	.00767	.0534	.0953	.102
	X/BB	.00872 (p=.086)	.00345	-.0007	.0181	.012
Y/X	X/BB	-.06564***	.00788	-.0871	-.0441	-.089
*p < .05, ***p < .001						

Each generation's Global Satisfaction index score was statistically significant within the year, Welch's  $F(4,21211.605) = 26.192$ ,  $p < .001$ . Generational scores were: Gen Y ( $3.85 \pm 0.81$ ), Y/X ( $3.75 \pm 0.83$ ), Gen X ( $3.73 \pm 0.85$ ), X/BB ( $3.72 \pm 0.87$ ), and BB ( $3.72 \pm 0.87$ ). The means, standard deviations, standard errors, and 95% confidence intervals for each generation are shown in Appendix G. Games Howell post-hoc analysis revealed all mean difference scores were statistically significant ( $p < .05$ ) except for Gen X and X/BB ( $p=.998$ ), Gen X and BB ( $p=.812$ ), and BB and X/BB ( $p=.888$ ). The mean differences, significance levels, standard errors, 95% mean difference confidence intervals, and Cohen's d for generational comparisons are shown in Table 47. There was

a statistically significant difference between generational means ( $p < .001$ ) and, therefore, the null hypothesis is rejected and the alternative hypothesis is accepted.

**Table 47: Primary Analysis (2010-2013) – Question 2: 2011 Global Satisfaction Post-Hoc Analysis**

Generational Comparisons		Mean Difference	Standard Error	95% Confidence Interval		Cohen's d
				Lower Bound	Upper Bound	
Gen Y	Y/X	.09919***	.01566	.0564	.1419	.120
	Gen X	.12546***	.01392	.0875	.1635	.148
	X/BB	.12713***	.01362	.0900	.1643	.146
	BB	.13093***	.01346	.0942	.1677	.150
Gen X	Y/X	-.02626*	.00945	-.0521	-.0005	-.031
	X/BB	.00167 ( $p=.998$ )	.00543	-.0131	.0165	.002
	BB	.00547 ( $p=.812$ )	.00502	-.0082	.0192	.006
BB	Y/X	-.03174*	.00876	-.0557	-.0078	-.037
	X/BB	-.00380 ( $p=.888$ )	.00411	-.0150	.0074	-.004
Y/X	X/BB	.02794*	.00901	.0034	.0525	.032

\* $p < .05$ , \*\*\* $p < .001$

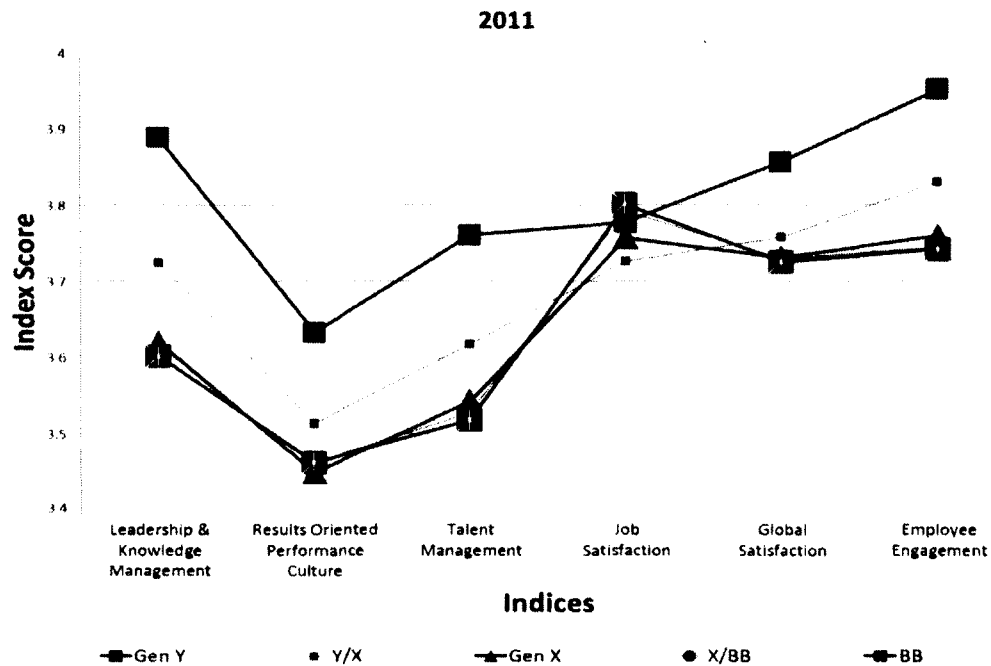
Each generation's Employee Engagement index score was statistically significant within the year, Welch's  $F(4,21381.626) = 110.144$ ,  $p < .001$ . Generational scores were: Gen Y ( $3.95 \pm 0.7$ ), Y/X ( $3.83 \pm 0.74$ ), Gen X ( $3.75 \pm 0.79$ ), X/BB ( $3.74 \pm 0.82$ ), and BB ( $3.74 \pm 0.83$ ). The means, standard deviations, standard errors, and 95% confidence intervals for each generation are shown in Appendix G. Games Howell post-hoc analysis revealed all mean difference scores were statistically significant ( $p < .05$ ) except for BB and X/BB ( $p=.941$ ). The mean differences, significance levels, standard errors, 95%

mean difference confidence intervals, and Cohen's d for generational comparisons are shown in Table 48. There was a statistically significant difference between generational means ( $p < .001$ ) and, therefore, the null hypothesis is rejected and the alternative hypothesis is accepted.

**Table 48: Primary Analysis (2010-2013) – Question 2: 2011 Employee Engagement Post-Hoc Analysis**

Generational Comparisons		Mean Difference	Standard Error	95% Confidence Interval		Cohen's d
				Lower Bound	Upper Bound	
Gen Y	Y/X	.12192***	.01367	.0846	.1592	.166
	Gen X	.19250***	.01213	.1594	.2256	.245
	X/BB	.20740***	.01185	.1751	.2397	.252
	BB	.21039***	.01168	.1785	.2423	.254
Gen X	Y/X	-.07058***	.00852	-.0938	-.0473	-.009
	X/BB	.01490*	.00510	.0010	.0288	.018
	BB	.01789***	.00470	.0051	.0307	.022
BB	Y/X	-.08847***	.00786	-.1099	-.0670	-.107
	X/BB	-.00299 ( $p=.941$ )	.00390	-.0136	.0077	-.004
Y/X	X/BB	.08548***	.00811	.0634	.1076	.104
* $p < .05$ , *** $p < .001$						

All six index scores are plotted against each generation shown in Figure 13.



**Figure 13: Primary Analysis (2010-2013) – Question 2: 2011 Index Score per Generation**

The sample sizes for 2012 are shown in Table 49.

**Table 49: Primary Analysis (2010-2013) – Question 2: 2012 Sample Size**

Year	Generation	Sample Size
2012	Gen Y	37,894
	Y/X	0
	Gen X	109,123
	X/BB	183,137
	BB	304,027

Each generation's Leadership and Knowledge Management index score was statistically significant within the year, Welch's  $F(3,151020.013) = 216.499$ ,  $p < .001$ .

Generational scores were: Gen Y ( $3.64 \pm 0.78$ ), Gen X ( $3.53 \pm 0.8$ ), X/BB ( $3.55 \pm 0.81$ ), and BB ( $3.56 \pm 0.8$ ). The means, standard deviations, standard errors, and 95% confidence intervals for each generation are shown in Appendix G. Games Howell post-hoc analysis revealed all mean difference scores were statistically significant ( $p < .001$ ). The mean differences, significance levels, standard errors, 95% mean difference confidence intervals, and Cohen's d for generational comparisons are shown in Table 50. There was a statistically significant difference between generational means ( $p < .001$ ) and, therefore, the null hypothesis is rejected and the alternative hypothesis is accepted.

**Table 50: Primary Analysis (2010-2013) – Question 2: 2012 Leadership and Knowledge Management Post-Hoc Analysis**

Generational Comparisons		Mean Difference	Standard Error	95% Confidence Interval		Cohen's d
				Lower Bound	Upper Bound	
Gen Y	Gen X	.11641***	.00470	.1043	.1285	.145
	X/BB	.09570***	.00445	.0843	.1071	.118
	BB	.08108***	.00427	.0701	.0921	.101
Gen X	X/BB	-.02072***	.00310	-.0287	-.0128	-.025
	BB	-.03533***	.00284	-.0426	-.0280	-.044
BB	X/BB	.01461***	.00240	.0084	.0208	.018
*** $p < .001$						

Each generation's Results-Oriented Performance Culture index score was statistically significant within the year, Welch's  $F(3,150669.603) = 207.682$ ,  $p < .001$ . Generational scores were: Gen Y ( $3.39 \pm 0.78$ ), Gen X ( $3.32 \pm 0.79$ ), X/BB ( $3.37 \pm 0.8$ ), and BB ( $3.39 \pm 0.79$ ). The means, standard deviations, standard errors, and 95% confidence intervals for each generation are shown in Appendix G. Games Howell post-

hoc analysis revealed all mean difference scores were statistically significant ( $p < .05$ ) except for Gen Y and BB ( $p = .943$ ). The mean differences, significance levels, standard errors, 95% mean difference confidence intervals, and Cohen's  $d$  for generational comparisons are shown in Table 51. There was a statistically significant difference between generational means ( $p < .001$ ) and, therefore, the null hypothesis is rejected and the alternative hypothesis is accepted.

**Table 51: Primary Analysis (2010-2013) – Question 2: 2012 Results-Oriented Performance Culture Post-Hoc Analysis**

Generational Comparisons		Mean Difference	Standard Error	95% Confidence Interval		Cohen's $d$
				Lower Bound	Upper Bound	
Gen Y	Gen X	.06655***	.00468	.0545	.0786	.084
	X/BB	.01201*	.00443	.0006	.0234	.015
	BB	-.00239 ( $p = .943$ )	.00427	-.0134	.0086	-.003
Gen X	X/BB	-.05454***	.00304	-.0624	-.0467	-.068
	BB	-.06895***	.00279	-.0761	-.0618	-.087
BB	X/BB	.01441***	.00235	.0083	.0205	.018
* $p < .05$ , *** $p < .001$						

Each generation's Talent Management index score was statistically significant within the year, Welch's  $F(3,150848.535) = 108.279$ ,  $p < .001$ . Generational scores were: Gen Y ( $3.53 \pm 0.82$ ), Gen X ( $3.45 \pm 0.85$ ), X/BB ( $3.47 \pm 0.85$ ), and BB ( $3.47 \pm 0.84$ ). The means, standard deviations, standard errors, and 95% confidence intervals for each generation are shown in Appendix G. Games Howell post-hoc analysis revealed all mean difference scores were statistically significant ( $p < .001$ ) except for BB and X/BB

( $p=.883$ ). The mean differences, significance levels, standard errors, 95% mean difference confidence intervals, and Cohen's  $d$  for generational comparisons are shown in Table 52. There was a statistically significant difference between generational means ( $p < .001$ ) and, therefore, the null hypothesis is rejected and the alternative hypothesis is accepted.

**Table 52: Primary Analysis (2010-2013) – Question 2: 2012 Talent Management Post-Hoc Analysis**

Generational Comparisons		Mean Difference	Standard Error	95% Confidence Interval		Cohen's $d$
				Lower Bound	Upper Bound	
Gen Y	Gen X	.08936***	.00496	.0766	.1021	.106
	X/BB	.06541***	.00468	.0534	.0775	.077
	BB	.06356***	.00450	.0520	.0751	.075
Gen X	X/BB	-.02395***	.00327	-.0324	-.0155	-.028
	BB	-.02580***	.00300	-.0335	-.0181	-.030
BB	X/BB	.00185 ( $p=.883$ )	.00252	-.0046	.0083	.002
*** $p < .001$						

Each generation's Job Satisfaction index score was statistically significant within the year, Welch's  $F(3,149099.481) = 448.661$ ,  $p < .001$ . Generational scores were: Gen Y ( $3.63 \pm 0.78$ ), Gen X ( $3.65 \pm 0.76$ ), X/BB ( $3.71 \pm 0.75$ ), and BB ( $3.73 \pm 0.74$ ). The means, standard deviations, standard errors, and 95% confidence intervals for each generation are shown in Appendix G. Games Howell post-hoc analysis revealed all mean difference scores were statistically significant ( $p < .001$ ). The mean differences, significance levels, standard errors, 95% mean difference confidence intervals, and Cohen's  $d$  for generational comparisons are shown in Table 53. There was a statistically

significant difference between generational means ( $p < .001$ ) and, therefore, the null hypothesis is rejected and the alternative hypothesis is accepted.

**Table 53: Primary Analysis (2010-2013) – Question 2: 2012 Job Satisfaction Post-Hoc Analysis**

Generational Comparisons		Mean Difference	Standard Error	95% Confidence Interval		Cohen's d
				Lower Bound	Upper Bound	
Gen Y	Gen X	-.02253***	.00463	-.0344	-.0106	-.029
	X/BB	-.08718***	.00438	-.0984	-.0759	-.115
	BB	-.10427***	.00422	-.1151	-.0934	-.139
Gen X	X/BB	-.06466***	.00292	-.0722	-.0571	-.085
	BB	-.08174***	.00269	-.0887	-.0748	-.109
BB	X/BB	.01708***	.00222	.0114	.0228	.023
*** $p < .001$						

Each generation's Global Satisfaction index score was statistically significant within the year, Welch's  $F(3,150028.578) = 49.121$ ,  $p < .001$ . Generational scores were: Gen Y ( $3.62 \pm 0.9$ ), Gen X ( $3.59 \pm 0.9$ ), X/BB ( $3.62 \pm 0.9$ ), and BB ( $3.63 \pm 0.89$ ). The means, standard deviations, standard errors, and 95% confidence intervals for each generation are shown in Appendix G. Games Howell post-hoc analysis revealed all mean difference scores were statistically significant ( $p < .001$ ) except for Gen Y and X/BB ( $p=.892$ ), Gen Y and BB ( $p=.359$ ), and BB and X/BB ( $p=.347$ ). The mean differences, significance levels, standard errors, 95% mean difference confidence intervals, and Cohen's d for generational comparisons are shown in Table 54. There was a statistically significant difference between generational means ( $p < .001$ ) and, therefore, the null hypothesis is rejected and the alternative hypothesis is accepted.

**Table 54: Primary Analysis (2010-2013) – Question 2: 2012 Global Satisfaction Post-Hoc Analysis**

Generational Comparisons		Mean Difference	Standard Error	95% Confidence Interval		Cohen's d
				Lower Bound	Upper Bound	
Gen Y	Gen X	.03003***	.00539	.0162	.0439	.033
	X/BB	-.00362 (p=.892)	.00509	-.0167	.0095	-.004
	BB	-.00804 (p=.359)	.00491	-.0207	.0046	-.009
Gen X	X/BB	-.03366***	.00345	-.0426	-.0248	-.037
	BB	-.03807***	.00318	-.0463	-.0299	-.042
BB	X/BB	.00441 (p=.347)	.00266	-.0024	.0112	.005
***p < .001						

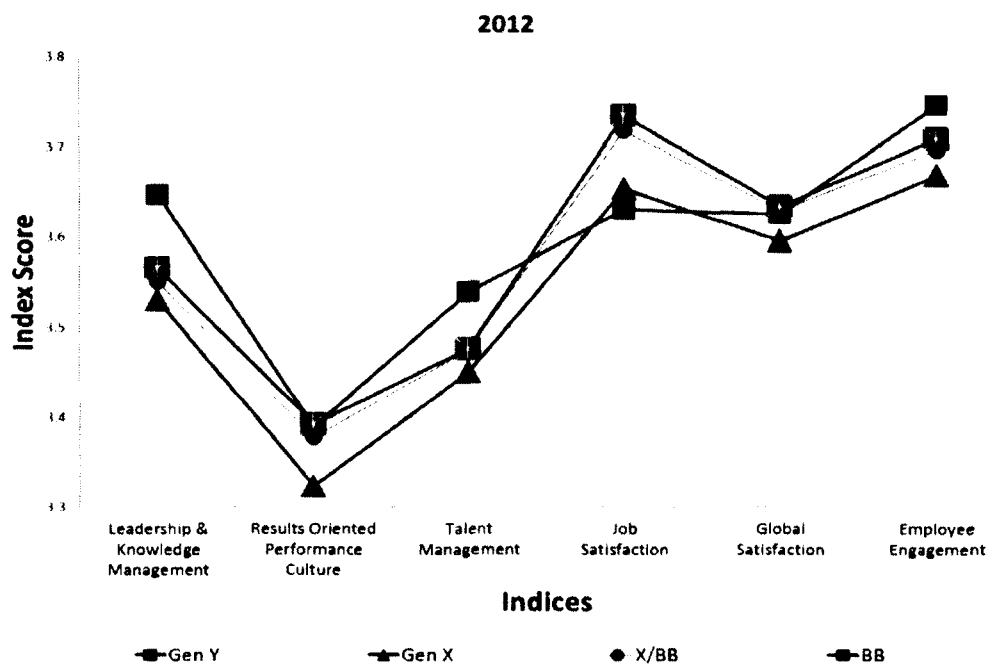
Each generation's Employee Engagement index score was statistically significant within the year, Welch's  $F(3,151480.279) = 107.868$ ,  $p < .001$ . Generational scores were: Gen Y ( $3.74 \pm 0.79$ ), Gen X ( $3.66 \pm 0.83$ ), X/BB ( $3.69 \pm 0.84$ ), and BB ( $3.7 \pm 0.83$ ). The means, standard deviations, standard errors, and 95% confidence intervals for each generation are shown in Appendix G. Games Howell post-hoc analysis revealed all mean difference scores were statistically significant ( $p < .001$ ). The mean differences, significance levels, standard errors, 95% mean difference confidence intervals, and Cohen's d for generational comparisons are shown in Table 55. There was a statistically significant difference between generational means ( $p < .001$ ) and, therefore, the null hypothesis is rejected and the alternative hypothesis is accepted.

**Table 55: Primary Analysis (2010-2013) – Question 2: 2012 Employee Engagement Post-Hoc Analysis**

Generational Comparisons		Mean Difference	Standard Error	95% Confidence Interval		Cohen's d
				Lower Bound	Upper Bound	
Gen Y	Gen X	.07755***	.00481	.0652	.0899	.094
	X/BB	.05003***	.00455	.0383	.0617	.060
	BB	.03666***	.00437	.0254	.0479	.044
Gen X	X/BB	-.02752***	.00320	-.0358	-.0193	-.033
	BB	-.04090***	.00294	-.0485	-.0333	-.049
BB	X/BB	.01337***	.00249	.0070	.0198	.016

\*\*\*p < .001

All six index scores are plotted against each generation shown in Figure 14.



**Figure 14: Primary Analysis (2010-2013) – Question 2: 2012 Index Score per Generation**

The sample sizes for 2013 are shown in Table 56.

**Table 56: Primary Analysis (2010-2013) – Question 2: 2013 Sample Size**

<b>Year</b>	<b>Generation</b>	<b>Sample Size</b>
2013	Gen Y	16,441
	Y/X	58,747
	Gen X	0
	X/BB	96,646
	BB	173,005

Each generation's Leadership and Knowledge Management index score was statistically significant within the year, Welch's  $F(3,68243.862) = 137.283$ ,  $p < .001$ . Generational scores were: Gen Y ( $3.62 \pm 0.78$ ), Y/X ( $3.5 \pm 0.81$ ), X/BB ( $3.51 \pm 0.83$ ), and BB ( $3.55 \pm 0.81$ ). The means, standard deviations, standard errors, and 95% confidence intervals for each generation are shown in Appendix G. Games Howell post-hoc analysis revealed all mean difference scores were statistically significant ( $p < .001$ ) except for Y/X and X/BB ( $p=.177$ ). The mean differences, significance levels, standard errors, 95% mean difference confidence intervals, and Cohen's  $d$  for generational comparisons are shown in Table 57. There was a statistically significant difference between generational means ( $p < .001$ ) and, therefore, the null hypothesis is rejected and the alternative hypothesis is accepted.

**Table 57: Primary Analysis (2010-2013) – Question 2: 2013 Leadership and Knowledge Management Post-Hoc Analysis**

Generational Comparisons		Mean Difference	Standard Error	95% Confidence Interval		Cohen's d
				Lower Bound	Upper Bound	
Gen Y	Y/X	.11748***	.00699	.0995	.1354	.145
	X/BB	.10871***	.00668	.0915	.1259	.131
	BB	.07121***	.00642	.0547	.0877	.087
Y/X	X/BB	-.00877 (p=.177)	.00432	-.0199	.0023	-.011
	BB	-.04627***	.00391	-.0563	-.0362	-.057
BB	X/BB	.03750***	.00333	.0289	.0461	.046
***p < .001						

Each generation's Results-Oriented Performance Culture index score was statistically significant within the year, Welch's  $F(3,68018.92) = 108.925$ ,  $p < .001$ . Generational scores were: Gen Y ( $3.37 \pm 0.78$ ), Y/X ( $3.3 \pm 0.8$ ), X/BB ( $3.34 \pm 0.81$ ), and BB ( $3.37 \pm 0.79$ ). The means, standard deviations, standard errors, and 95% confidence intervals for each generation are shown in Appendix G. Games Howell post-hoc analysis revealed all mean difference scores were statistically significant ( $p < .001$ ) except for Gen Y and BB ( $p=.975$ ). The mean differences, significance levels, standard errors, 95% mean difference confidence intervals, and Cohen's d for generational comparisons are shown in Table 58. There was a statistically significant difference between generational means ( $p < .001$ ) and, therefore, the null hypothesis is rejected and the alternative hypothesis is accepted.

**Table 58: Primary Analysis (2010-2013) – Question 2: 2013 Results-Oriented Performance Culture Post-Hoc Analysis**

Generational Comparisons		Mean Difference	Standard Error	95% Confidence Interval		Cohen's d
				Lower Bound	Upper Bound	
Gen Y	Y/X	.06957***	.00695	.0517	.0874	.087
	X/BB	.02821***	.00665	.0111	.0453	.035
	BB	.00270 (p=.975)	.00641	-.0138	.0192	.003
Y/X	X/BB	-.04136***	.00420	-.0522	-.0305	-.051
	BB	-.06686***	.00381	-.0767	-.0571	-.084
BB	X/BB	.02550***	.00323	.0172	.0338	.032
***p < .001						

Each generation's Talent Management index score was statistically significant within the year, Welch's  $F(3,68045.414) = 63.46$ ,  $p < .001$ . Generational scores were: Gen Y ( $3.48 \pm 0.84$ ), Y/X ( $3.38 \pm 0.87$ ), X/BB ( $3.4 \pm 0.88$ ), and BB ( $3.42 \pm 0.86$ ). The means, standard deviations, standard errors, and 95% confidence intervals for each generation are shown in Appendix G. Games Howell post-hoc analysis revealed all mean difference scores were statistically significant ( $p < .05$ ). The mean differences, significance levels, standard errors, 95% mean difference confidence intervals, and Cohen's d for generational comparisons are shown in Table 59. There was a statistically significant difference between generational means ( $p < .001$ ) and, therefore, the null hypothesis is rejected and the alternative hypothesis is accepted.

**Table 59: Primary Analysis (2010-2013) – Question 2: 2013 Talent Management Post-Hoc Analysis**

Generational Comparisons		Mean Difference	Standard Error	95% Confidence Interval		Cohen's d
				Lower Bound	Upper Bound	
Gen Y	Y/X	.09150***	.00748	.0723	.1107	.106
	X/BB	.07669***	.00714	.0583	.0951	.088
	BB	.05547***	.00688	.0378	.0731	.065
Y/X	X/BB	-.01481*	.00458	-.0266	-.0030	-.017
	BB	-.03604***	.00415	-.0467	-.0254	-.042
BB	X/BB	.02123***	.00350	.0122	.0302	.024
***p < .001						

Each generation's Job Satisfaction index score was statistically significant within the year, Welch's  $F(3,67431.956) = 299.754$ ,  $p < .001$ . Generational scores were: Gen Y ( $3.56 \pm 0.79$ ), Y/X ( $3.58 \pm 0.79$ ), X/BB ( $3.64 \pm 0.78$ ), and BB ( $3.67 \pm 0.76$ ). The means, standard deviations, standard errors, and 95% confidence intervals for each generation are shown in Appendix G. Games Howell post-hoc analysis revealed all mean difference scores were statistically significant ( $p < .001$ ) except for Gen Y and Y/X ( $p = .057$ ). The mean differences, significance levels, standard errors, 95% mean difference confidence intervals, and Cohen's d for generational comparisons are shown in Table 60. There was a statistically significant difference between generational means ( $p < .001$ ) and, therefore, the null hypothesis is rejected and the alternative hypothesis is accepted.

**Table 60: Primary Analysis (2010-2013) – Question 2: 2013 Job Satisfaction Post-Hoc Analysis**

Generational Comparisons		Mean Difference	Standard Error	95% Confidence Interval		Cohen's d
				Lower Bound	Upper Bound	
Gen Y	Y/X	-.01769 (p=.057)	.00702	-.0357	.0004	-.022
	X/BB	-.07942***	.00671	-.0967	-.0622	-.101
	BB	-.11612***	.00648	-.1328	-.0995	-.151
Y/X	X/BB	-.06173***	.00414	-.0724	-.0511	-.078
	BB	-.09843***	.00375	-.1081	-.0888	-.127
BB	X/BB	.03670***	.00313	.0287	.0447	.047
***p < .001						

Each generation's Global Satisfaction index score was statistically significant within the year, Welch's  $F(3,67887.64) = 56.84$ ,  $p < .001$ . Generational scores were: Gen Y ( $3.54 \pm 0.91$ ), Y/X ( $3.49 \pm 0.93$ ), X/BB ( $3.52 \pm 0.93$ ), and BB ( $3.55 \pm 0.92$ ). The means, standard deviations, standard errors, and 95% confidence intervals for each generation are shown in Appendix G. Games Howell post-hoc analysis revealed all mean difference scores were statistically significant ( $p < .001$ ) except for Gen Y and X/BB ( $p=.074$ ) and Gen Y and BB ( $p=.567$ ). The mean differences, significance levels, standard errors, 95% mean difference confidence intervals, and Cohen's d for generational comparisons are shown in Table 61. There was a statistically significant difference between generational means ( $p < .001$ ) and, therefore, the null hypothesis is rejected and the alternative hypothesis is accepted.

**Table 61: Primary Analysis (2010-2013) – Question 2: 2013 Global Satisfaction Post-Hoc Analysis**

Generational Comparisons		Mean Difference	Standard Error	95% Confidence Interval		Cohen's d
				Lower Bound	Upper Bound	
Gen Y	Y/X	.04523***	.00812	.0243	.0661	.049
	X/BB	.01875 (p=.074)	.00776	-.0012	.0387	.020
	BB	-.00968 (p=.567)	.00749	-.0289	.0096	-.011
Y/X	X/BB	-.02648***	.00490	-.0391	-.0139	-.028
	BB	-.05492***	.00445	-.0664	-.0435	-.059
BB	X/BB	.02844***	.00374	.0188	.0381	.031
***p < .001						

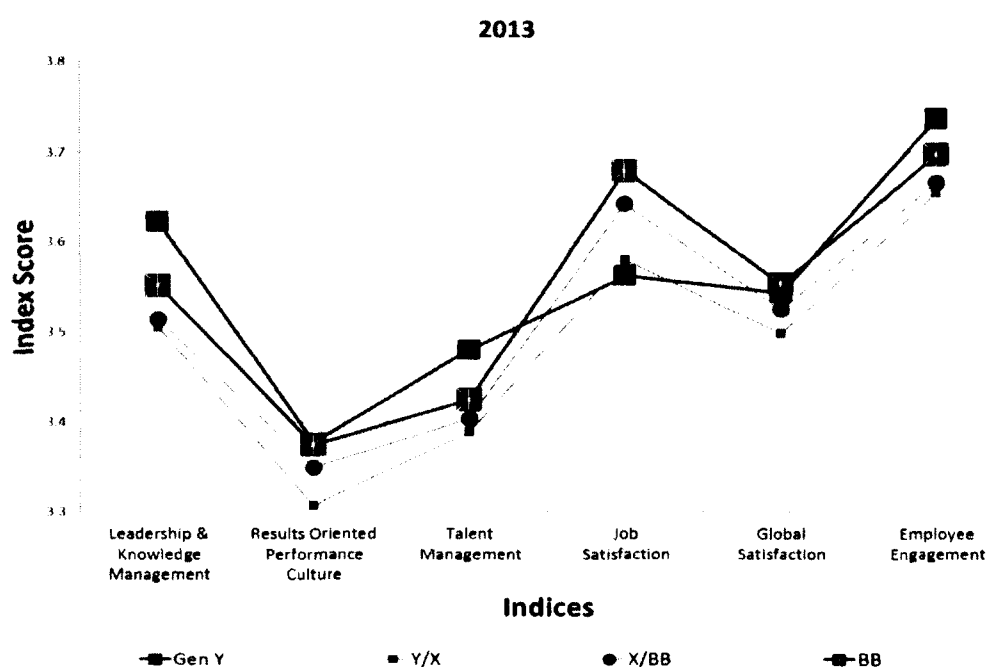
Each generation's Employee Engagement index score was statistically significant within the year, Welch's  $F(3,68394.023) = 74.907$ ,  $p < .001$ . Generational scores were: Gen Y ( $3.73 \pm 0.8$ ), Y/X ( $3.65 \pm 0.84$ ), X/BB ( $3.66 \pm 0.86$ ), and BB ( $3.69 \pm 0.84$ ). The means, standard deviations, standard errors, and 95% confidence intervals for each generation are shown in Appendix G. Games Howell post-hoc analysis revealed all mean difference scores were statistically significant ( $p < .001$ ) except for Y/X and X/BB ( $p=.065$ ). The mean differences, significance levels, standard errors, 95% mean difference confidence intervals, and Cohen's d for generational comparisons are shown in Table 62. There was a statistically significant difference between generational means ( $p < .001$ ) and, therefore, the null hypothesis is rejected and the alternative hypothesis is accepted.

**Table 62: Primary Analysis (2010-2013) – Question 2: 2013 Employee Engagement Post-Hoc Analysis**

Generational Comparisons		Mean Difference	Standard Error	95% Confidence Interval		Cohen's d
				Lower Bound	Upper Bound	
Gen Y	Y/X	.08237***	.00717	.0639	.1008	.098
	X/BB	.07131***	.00685	.0537	.0889	.083
	BB	.04011***	.00658	.0232	.0570	.047
Y/X	X/BB	-.01106 (p=.065)	.00448	-.0226	.0004	-.013
	BB	-.04227***	.00405	-.0527	-.0319	-.050
BB	X/BB	.03121***	.00345	.0223	.0401	.036

\*\*\*p < .001

All six index scores are plotted against each generation shown in Figure 15.



**Figure 15: Primary Analysis (2010-2013) – Question 2: 2013 Index Score per Generation**

In summation, all Generation Y's index scores (except Job Satisfaction) were higher than Generation X and Baby Boomers in 2010 and 2011. In 2012 and 2013 the index scores of all generations were much closer together as all declined. The empirical findings are discussed in Chapter 5. There was a statistically significant difference between means ( $p < .001$ ) for all 24 hypotheses and, therefore, the null hypotheses are rejected and the alternative hypotheses are accepted for all 24 hypotheses. Therefore, there are differences in any given year (from 2010 through 2013) between generations within the federal government utilizing OPM's six workplace indices.

### **PRIMARY ANALYSIS (2010-2013) – QUESTION 3**

Question 3: Are there overall differences between generations within the federal government utilizing OPM's six workplace indices from the years 2010 through 2013?

$H_{03(\text{Index \#})-(\text{Generation})}$ : All related group population means are equal (e.g. for

Index 1:  $\mu_{Y(2010-2013)} = \mu_{Y/X(2010-2013)} = \mu_{X(2010-2013)} =$

$\mu_{X/BB(2010-2013)} = \mu_{BB(2010-2013)}$ )

$H_{13(\text{Index \#})-(\text{Generation})}$ : At least one related group population mean is different

The data were normally distributed for all generations, as assessed by visual inspection of Normal Q-Q Plots. Homogeneity of variances was violated for all

generations, as assessed by Levene's Test of Homogeneity of Variances ( $p < .001$ ), shown in Appendix G.

The sample size for each generation is shown in Table 63.

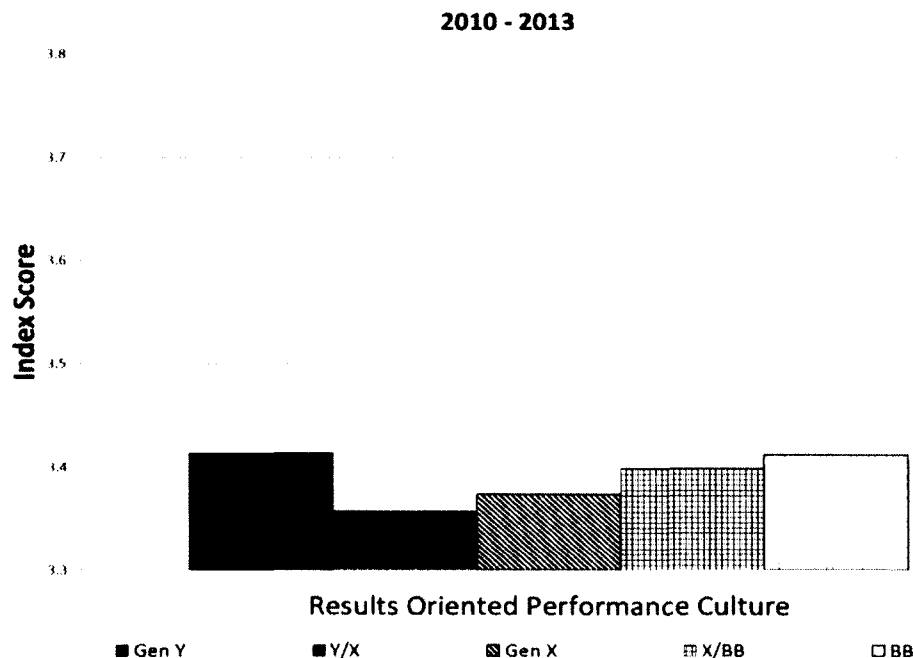
**Table 63: Primary Analysis (2010-2013) – Question 3: Total Generation Sample Size**

Year	Generation	Sample Size
2010 - 2013	Gen Y	61,315
	Y/X	77,448
	Gen X	183,201
	X/BB	425,592
	BB	724,698

Leadership and Knowledge Management index score (shown in Figure 16) was statistically significant between the generations, Welch's  $F(4,248685.924) = 283.437$ ,  $p < .001$ . Generational scores were: Gen Y ( $3.66 \pm 0.77$ ), Y/X ( $3.55 \pm 0.8$ ), Gen X ( $3.56 \pm 0.79$ ), X/BB ( $3.55 \pm 0.81$ ), and BB ( $3.57 \pm 0.8$ ). The means, standard deviations, standard errors, and 95% confidence intervals for each generation are shown in Appendix G. Games Howell post-hoc analysis revealed all mean difference scores were statistically significant ( $p < .05$ ) except for Gen X and Y/X ( $p = .561$ ) and Y/X and X/BB ( $p = .995$ ). The mean differences, significance levels, standard errors, 95% mean difference confidence intervals, and Cohen's  $d$  for generational comparisons are shown in Table 64. There was a statistically significant difference between generational means ( $p < .001$ ) and, therefore, the null hypothesis is rejected and the alternative hypothesis is accepted.



Results-Oriented Performance Culture index score (shown in Figure 17) was statistically significant between the generations, Welch's  $F(4,248287.128) = 155.905$ ,  $p < .001$ . Generational scores were: Gen Y ( $3.41 \pm 0.77$ ), Y/X ( $3.35 \pm 0.78$ ), Gen X ( $3.37 \pm 0.78$ ), X/BB ( $3.39 \pm 0.79$ ), and BB ( $3.41 \pm 0.79$ ). The means, standard deviations, standard errors, and 95% confidence intervals for each generation are shown in Appendix G. Games Howell post-hoc analysis revealed all mean difference scores were statistically significant ( $p < .001$ ) except for Gen Y and BB ( $p=.978$ ). The mean differences, significance levels, standard errors, 95% mean difference confidence intervals, and Cohen's d for generational comparisons are shown in Table 65. There was a statistically significant difference between generational means ( $p < .001$ ) and, therefore, the null hypothesis is rejected and the alternative hypothesis is accepted.

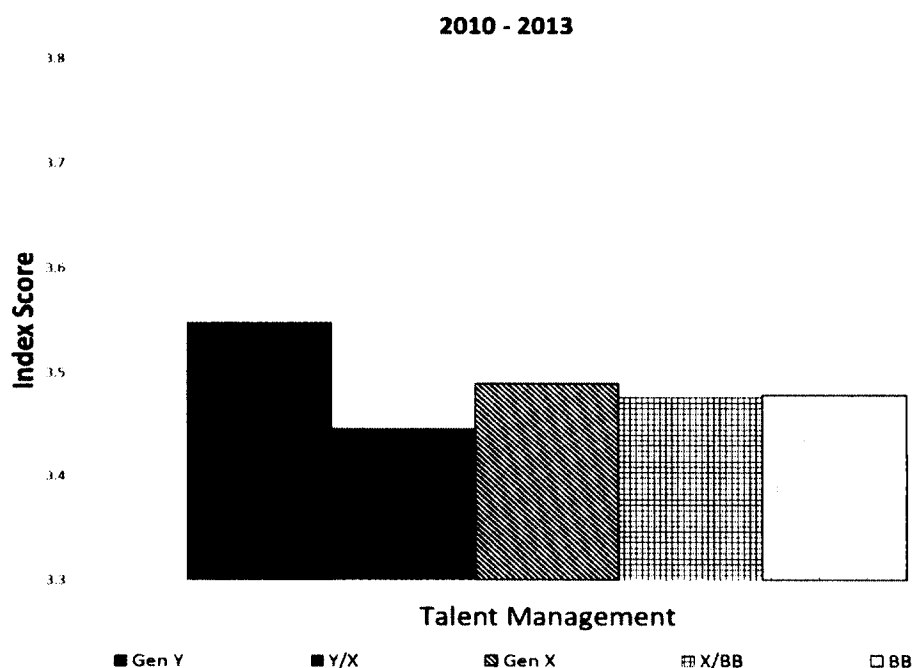


**Figure 17: Primary Analysis (2010-2013) – Question 3: Results-Oriented Performance Culture Index Score per Generation**

**Table 65: Primary Analysis (2010-2013) – Question 3: Results-Oriented Performance Culture Post-Hoc Analysis**

Generational Comparisons		Mean Difference	Standard Error	95% Confidence Interval		Cohen's d
				Lower Bound	Upper Bound	
Gen Y	Y/X	.05662***	.00423	.0451	.0682	.072
	Gen X	.04040***	.00363	.0305	.0503	.052
	X/BB	.01552***	.00337	.0063	.0247	.019
	BB	.00191 (p=.978)	.00327	-.0070	.0109	.002
Gen X	Y/X	.01622***	.00337	.0070	.0254	.021
	X/BB	-.02487***	.00219	-.0309	-.0189	-.031
	BB	-.03848***	.00205	-.0441	-.0329	-.049
BB	Y/X	.05471***	.00298	.0466	.0628	.069
	X/BB	.01361***	.00153	.0094	.0178	.017
Y/X	X/BB	-.04110***	.00308	-.0495	-.0327	-.052
***p < .001						

Talent Management index score (shown in Figure 18) was statistically significant between the generations, Welch's  $F(4,248182.055) = 143.541$ ,  $p < .001$ . Generational scores were: Gen Y ( $3.54 \pm 0.82$ ), Y/X ( $3.44 \pm 0.85$ ), Gen X ( $3.49 \pm 0.84$ ), X/BB ( $3.47 \pm 0.85$ ), and BB ( $3.47 \pm 0.84$ ). The means, standard deviations, standard errors, and 95% confidence intervals for each generation are shown in Appendix G. Games Howell post-hoc analysis revealed all mean difference scores were statistically significant ( $p < .001$ ) except for BB and X/BB ( $p=.618$ ). The mean differences, significance levels, standard errors, 95% mean difference confidence intervals, and Cohen's d for generational comparisons are shown in Table 66. There was a statistically significant difference between generational means ( $p < .001$ ) and, therefore, the null hypothesis is rejected and the alternative hypothesis is accepted.



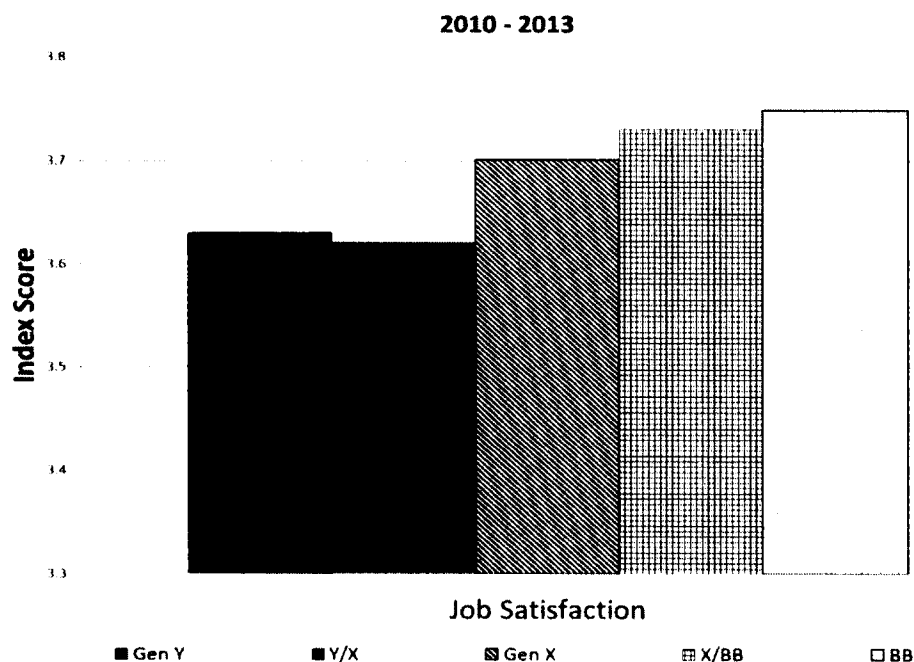
**Figure 18: Primary Analysis (2010-2013) – Question 3: Talent Management Index Score per Generation**

**Table 66: Primary Analysis (2010-2013) – Question 3: Talent Management Post-Hoc Analysis**

Generational Comparisons		Mean Difference	Standard Error	95% Confidence Interval		Cohen's d
				Lower Bound	Upper Bound	
Gen Y	Y/X	.10240***	.00453	.0900	.1148	.122
	Gen X	.05841***	.00386	.0479	.0690	.070
	X/BB	.07156***	.00357	.0618	.0813	.084
	BB	.06922***	.00347	.0598	.0787	.082
Gen X	Y/X	.04399***	.00365	.0340	.0540	.052
	X/BB	.01314***	.00236	.0067	.0196	.015
	BB	.01081***	.00220	.0048	.0168	.013
BB	Y/X	.03318***	.00323	.0243	.0420	.039
	X/BB	.00233 (p=.618)	.00164	-.0022	.0068	.003
Y/X	X/BB	-.03084***	.00335	-.0400	-.0217	-.036

\*\*\*p < .001

Job Satisfaction index score (shown in Figure 19) was statistically significant between the generations, Welch's  $F(4,246371.355) = 805.267$ ,  $p < .001$ . Generational scores were: Gen Y ( $3.63 \pm 0.78$ ), Y/X ( $3.62 \pm 0.78$ ), Gen X ( $3.7 \pm 0.75$ ), X/BB ( $3.73 \pm 0.75$ ), and BB ( $3.74 \pm 0.74$ ). The means, standard deviations, standard errors, and 95% confidence intervals for each generation are shown in Appendix G. Games Howell post-hoc analysis revealed all mean difference scores were statistically significant ( $p < .001$ ) except for Gen Y and Y/X ( $p=.172$ ). The mean differences, significance levels, standard errors, 95% mean difference confidence intervals, and Cohen's d for generational comparisons are shown in Table 67. There was a statistically significant difference between generational means ( $p < .001$ ) and, therefore, the null hypothesis is rejected and the alternative hypothesis is accepted.

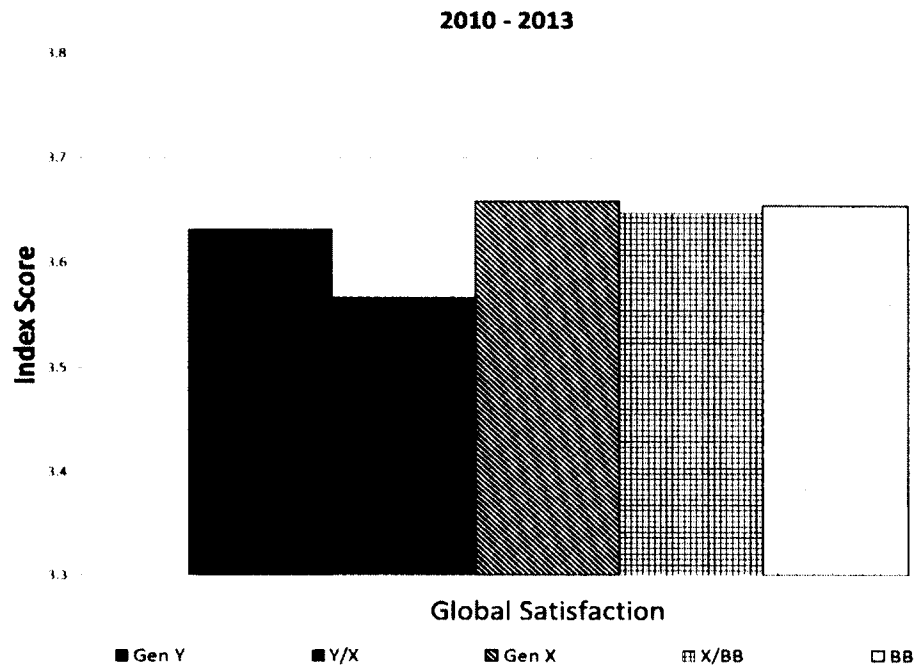


**Figure 19: Primary Analysis (2010-2013) – Question 3: Job Satisfaction Index Score per Generation**

**Table 67: Primary Analysis (2010-2013) – Question 3: Job Satisfaction Post-Hoc Analysis**

Generational Comparisons		Mean Difference	Standard Error	95% Confidence Interval		Cohen's d
				Lower Bound	Upper Bound	
Gen Y	Y/X	.00938 (p=.172)	.00422	-.0021	.0209	.012
	Gen X	-.07138***	.00361	-.0812	-.0615	-.094
	X/BB	-.10065***	.00336	-.1098	-.0915	-.132
	BB	-.11900***	.00327	-.1279	-.1101	-.159
Gen X	Y/X	.08077***	.00332	.0717	.0898	.106
	X/BB	-.02926***	.00211	-.0350	-.0235	-.039
	BB	-.04762***	.00197	-.0530	-.0422	-.064
BB	Y/X	.12839***	.00294	.1203	.1364	.171
	X/BB	.01835***	.00145	.0144	.0223	.024
Y/X	X/BB	-.11004***	.00304	-.1183	-.1017	-.144
***p < .001						

Global Satisfaction index score (shown in Figure 20) was statistically significant between the generations, Welch's  $F(4,247419.288) = 172.098$ ,  $p < .001$ . Generational scores were: Gen Y ( $3.63 \pm 0.9$ ), Y/X ( $3.56 \pm 0.92$ ), Gen X ( $3.65 \pm 0.88$ ), X/BB ( $3.64 \pm 0.9$ ), and BB ( $3.65 \pm 0.89$ ). The means, standard deviations, standard errors, and 95% confidence intervals for each generation are shown in Appendix G. Games Howell post-hoc analysis revealed all mean difference scores were statistically significant ( $p < .001$ ) except for Gen X and BB ( $p=.385$ ). The mean differences, significance levels, standard errors, 95% mean difference confidence intervals, and Cohen's d for generational comparisons are shown in Table 68. There was a statistically significant difference between generational means ( $p < .001$ ) and, therefore, the null hypothesis is rejected and the alternative hypothesis is accepted.

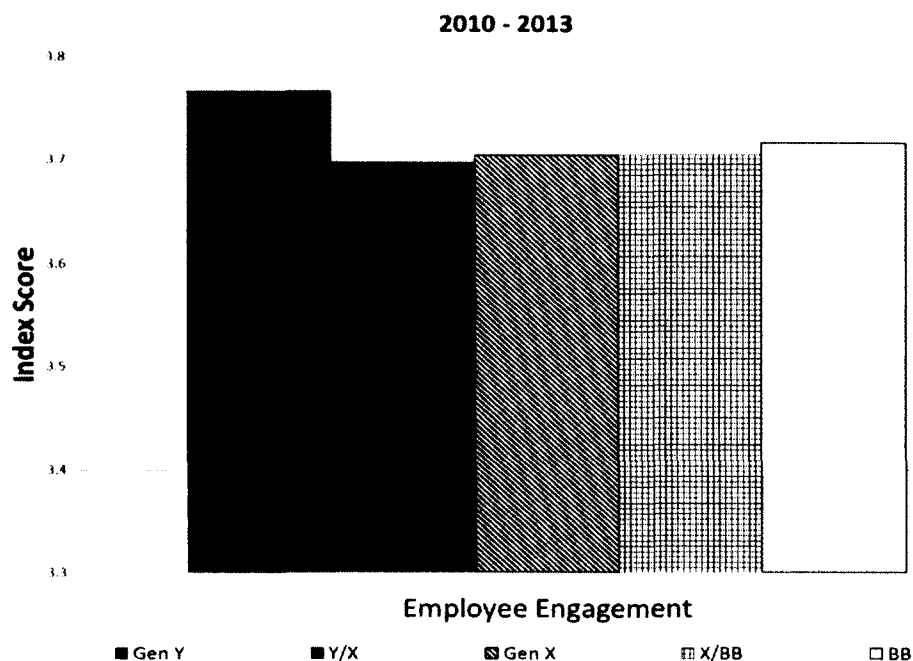


**Figure 20: Primary Analysis (2010-2013) – Question 3: Global Satisfaction Index Score per Generation**

**Table 68: Primary Analysis (2010-2013) – Question 3: Global Satisfaction Post-Hoc Analysis**

Generational Comparisons		Mean Difference	Standard Error	95% Confidence Interval		Cohen's d
				Lower Bound	Upper Bound	
Gen Y	Y/X	.06456***	.00491	.0511	.0780	.071
	Gen X	-.02732***	.00418	-.0388	-.0159	-.031
	X/BB	-.01607***	.00389	-.0267	-.0054	-.018
	BB	-.02318***	.00378	-.0335	-.0128	-.026
Gen X	Y/X	.09189***	.00390	.0812	.1025	.102
	X/BB	.01125***	.00249	.0044	.0181	.013
	BB	.00415 (p=.385)	.00232	-.0022	.0105	.005
BB	Y/X	.08774***	.00347	.0783	.0972	.097
	X/BB	.00711***	.00174	.0024	.0119	.008
Y/X	X/BB	-.08064***	.00358	-.0904	-.0709	-.089
***p < .001						

Employee Engagement index score (shown in Figure 21) was statistically significant between the generations, Welch's  $F(4,249182.388) = 95.344$ ,  $p < .001$ . Generational scores were: Gen Y ( $3.76 \pm 0.79$ ), Y/X ( $3.69 \pm 0.82$ ), Gen X ( $3.7 \pm 0.81$ ), X/BB ( $3.7 \pm 0.84$ ), and BB ( $3.71 \pm 0.83$ ). The means, standard deviations, standard errors, and 95% confidence intervals for each generation are shown in Appendix G. Games Howell post-hoc analysis revealed all mean difference scores were statistically significant ( $p < .001$ ) except for Gen X and Y/X ( $p=.272$ ), Gen X and X/BB ( $p=.1.00$ ), and Y/X and X/BB ( $p=.230$ ). The mean differences, significance levels, standard errors, 95% mean difference confidence intervals, and Cohen's d for generational comparisons are shown in Table 69. There was a statistically significant difference between generational means ( $p < .001$ ) and, therefore, the null hypothesis is rejected and the alternative hypothesis is accepted.



**Figure 21: Primary Analysis (2010-2013) – Question 3: Employee Engagement Index Score per Generation**

**Table 69: Primary Analysis (2010-2013) – Question 3: Employee Engagement Post-Hoc Analysis**

Generational Comparisons		Mean Difference	Standard Error	95% Confidence Interval		Cohen's d
				Lower Bound	Upper Bound	
Gen Y	Y/X	.06848***	.00436	.0566	.0804	.084
	Gen X	.06145***	.00372	.0513	.0716	.076
	X/BB	.06174***	.00344	.0523	.0711	.073
	BB	.04926***	.00334	.0401	.0584	.059
Gen X	Y/X	.00703 (p=.272)	.00354	-.0026	.0167	.009
	X/BB	.00029 (p=1.00)	.00231	-.0060	.0066	.000
	BB	-.01219***	.00215	-.0181	-.0063	-.015
BB	Y/X	.01923***	.00313	.0107	.0278	.023
	X/BB	.01248***	.00162	.0080	.0169	.015
Y/X	X/BB	-.00675 (p=.230)	.00324	-.0156	.0021	-.008
***p < .001						

In summation, Generation Y had the highest index scores for all indices from 2010 through 2013, except Job Satisfaction and Global Satisfaction, where those scores were the lowest. The empirical findings are discussed in Chapter 5. There was a statistically significant difference between means ( $p < .001$ ) for all six hypotheses and, therefore, the null hypotheses are rejected and the alternative hypotheses are accepted for all 24 hypotheses. Therefore, there are overall differences between generations within the federal government utilizing OPM's six workplace indices from the years 2010 through 2013.

There was a statistically significant difference between means ( $p < .001$ ) for all 36 hypotheses in the primary analysis and, therefore, the null hypotheses are rejected and the alternative hypotheses are accepted for all 36 hypotheses.

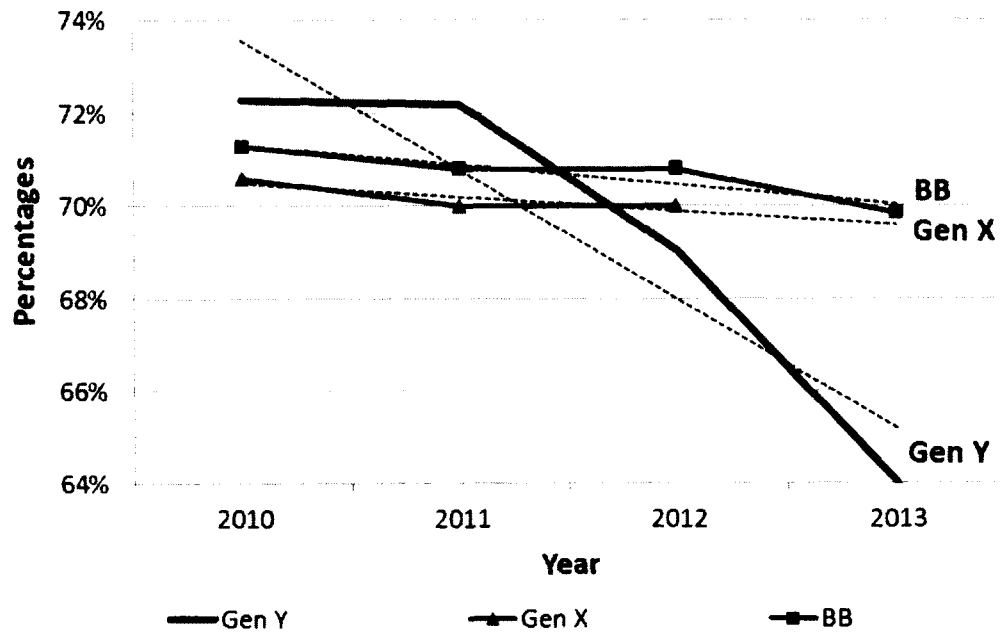
## **STAYERS AND LEAVERS**

Within the Global Satisfaction index there is sub-category called Stayers and Leavers. This category was not included in any statistical testing. It was analyzed using data from a single question: Are you considering leaving your organization within the next year, and if so, why? Respondent answer choices for this question were: A) No, B) Yes, to retire, C) Yes, to take another job within the federal government, D) Yes, to take another job outside the federal government, and E) Yes, other. Figure 22 shows the generational percentages and trendlines<sup>8</sup> for those that answered “no”. Figures 23-26 shows the generational percentages and trendlines for those that are going to leave within the next year<sup>9</sup>. The calculated percentages are shown in Appendix G.

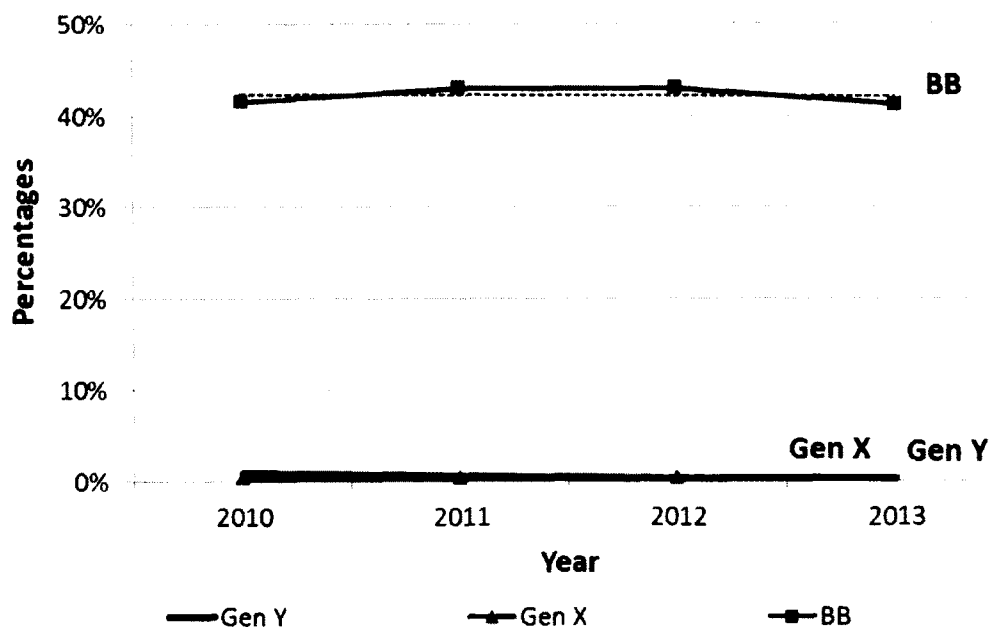
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<sup>8</sup> Trendlines within figures 22-26 are for graphical representation and not for predicting outcomes; therefore, the coefficients of determination are not shown.

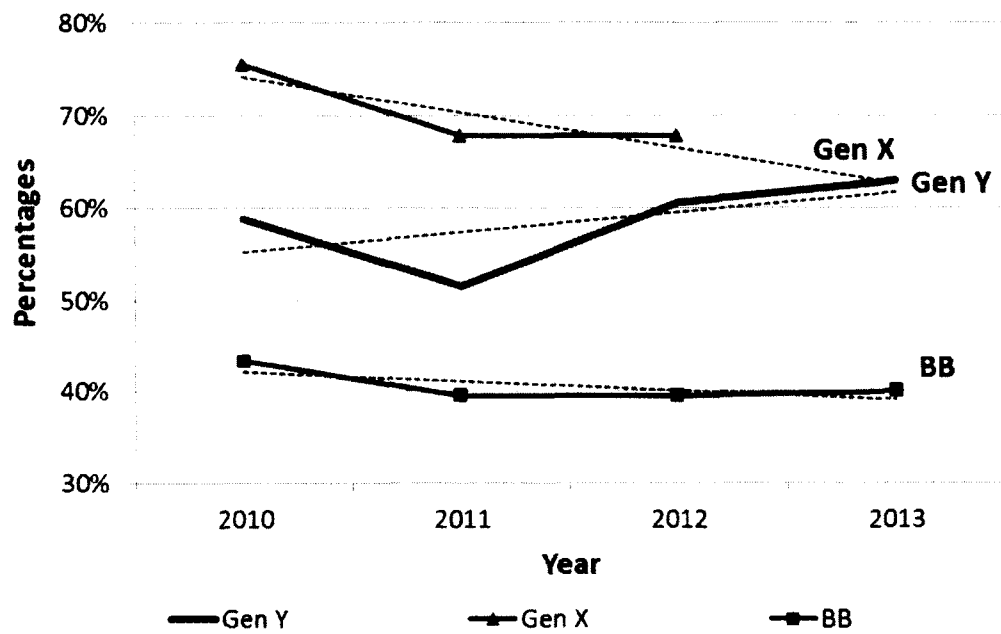
<sup>9</sup> The denominators of these calculations are the sum of answer choices B through E.



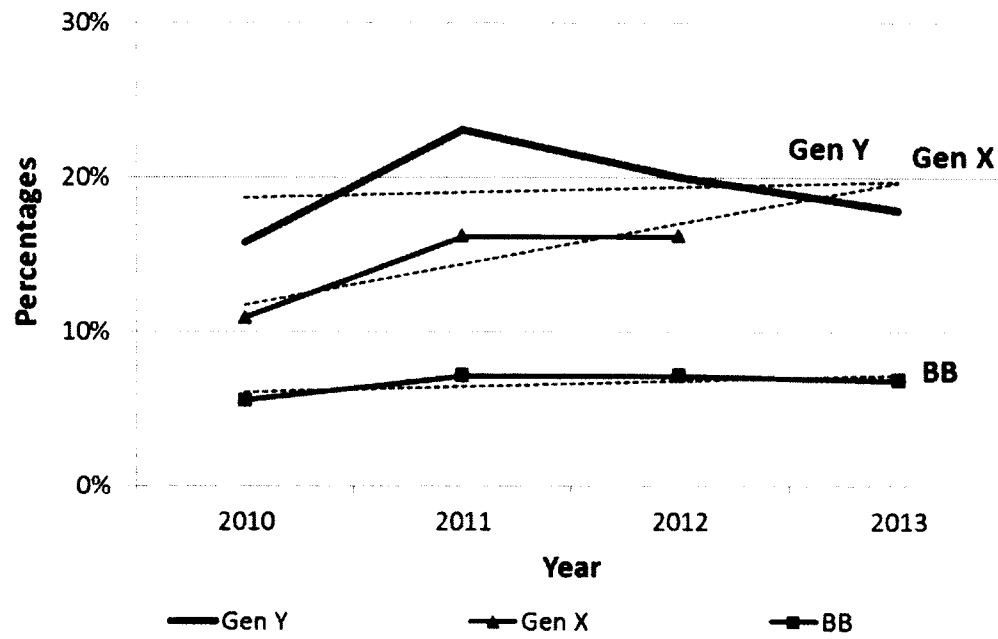
**Figure 22: Primary Analysis (2010-2013) – Stayers and Leavers “No” Answer choice**



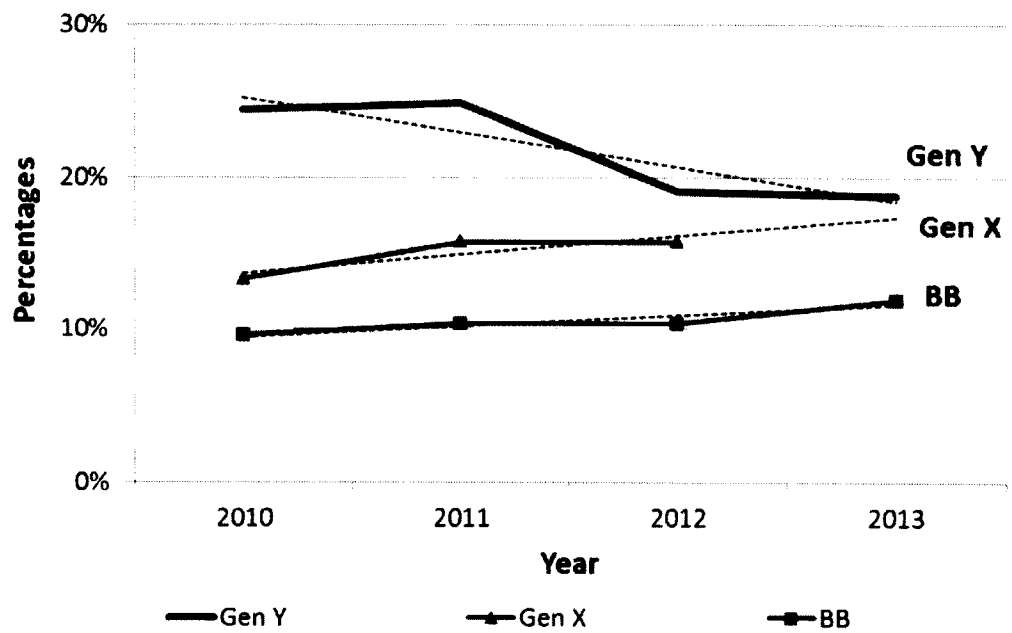
**Figure 23: Primary Analysis (2010-2013) – Stayers and Leavers “Retire” Answer choice**



**Figure 24: Primary Analysis (2010-2013) – Stayers and Leavers “Within Government” Answer choice**



**Figure 25: Primary Analysis (2010-2013) – Stayers and Leavers “Outside Government” Answer choice**



**Figure 26: Primary Analysis (2010-2013) – Stayers and Leavers “Other” Answer choice**

All employees not leaving their organization within the next year increased from 2006-2010 and then decreased from 2010 on. Generation Y decreased the most and is the only generation to have a negative trend line. The empirical findings are discussed in Chapter 5.

### **FIRST EXCURSION ANALYSIS (2006-2013)**

The first excursion analysis focused on data from 2006-2013. This analysis has three questions with the following number of hypotheses per question: Question 1e (6 hypotheses), Question 2e (12 hypotheses), and Question 3e (6 hypotheses). Question 2 will only report results from 2006 and 2008 since 2010-2013 was reported in the primary analysis.

The data were normally distributed for all indices, as assessed by visual inspection of Normal Q-Q Plots. Homogeneity of variances was violated for all indices in all three questions, as assessed by Levene's Test of Homogeneity of Variances ( $p < .001$ ), shown in Appendix H.

### **FIRST EXCURSION ANALYSIS (2006-2013) – QUESTION 1e**

Question 1e<sub>1</sub>: Are there overall differences of all generations within the federal government utilizing OPM's six workplace indices from the years 2006 through 2013?

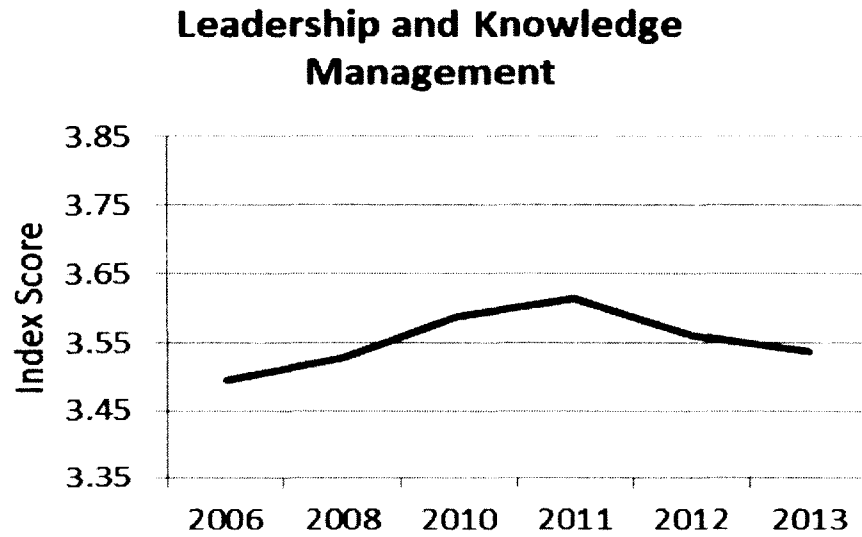
- $H_{01}(\text{Index \#}):$  All related group populations are combined within each year such that all yearly population means are equal (e.g. for Index 1:  $\mu_{2013} = \mu_{2012} = \mu_{2011} = \mu_{2010} = \mu_{2008} = \mu_{2006}$ )
- $H_{11}(\text{Index \#}):$  All related group populations are combined within each year such that at least one yearly population mean is not equal

The sample size for question one is shown in Table 70.

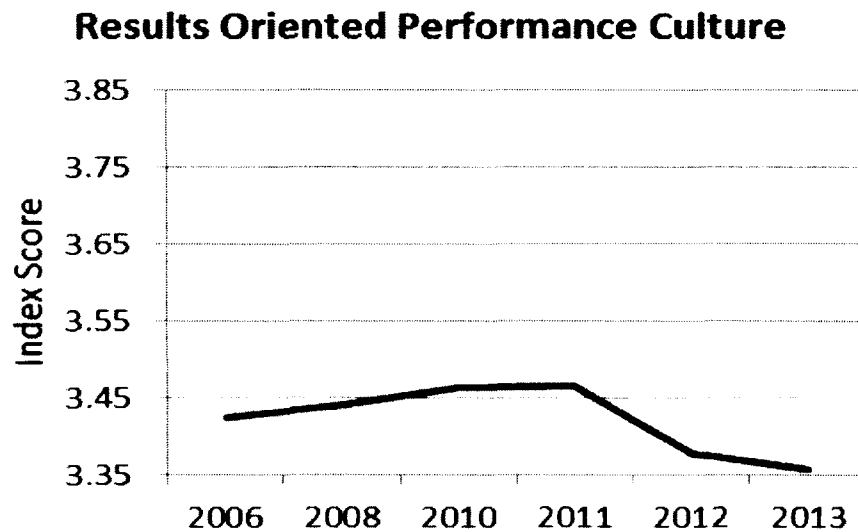
**Table 70: First Excursion Analysis (2006-2013) – Question 1e: Sample Size**

<b>Year</b>	<b>Sample Size</b>
2006	217,235
2008	208,948
2010	248,026
2011	245,208
2012	634,181
2013	344,839
<b>TOTAL</b>	<b>1,898,437</b>

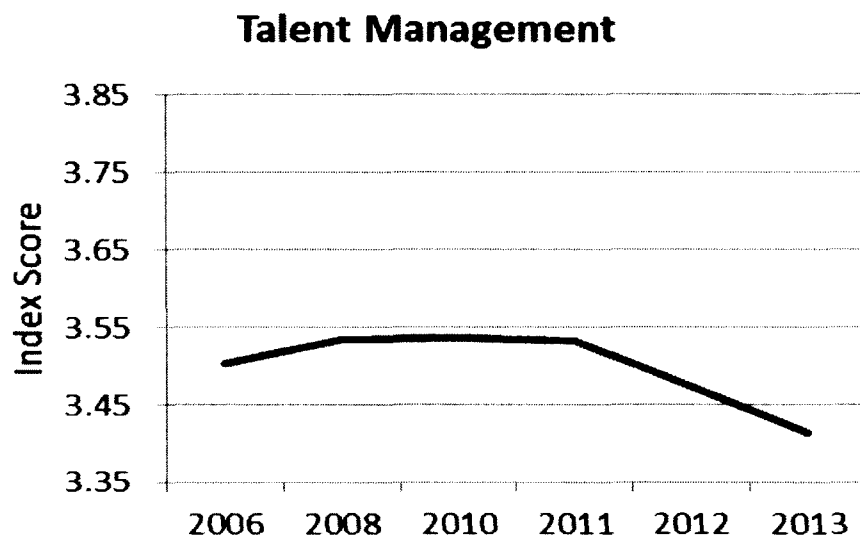
Each of the six index scores are shown in Figures 27-32.



**Figure 27: First Excursion Analysis (2006-2013) – Question 1e: Leadership and Knowledge Management Index Score**



**Figure 28: First Excursion Analysis (2006-2013) – Question 1e: Results-Oriented Performance Culture Index Score**



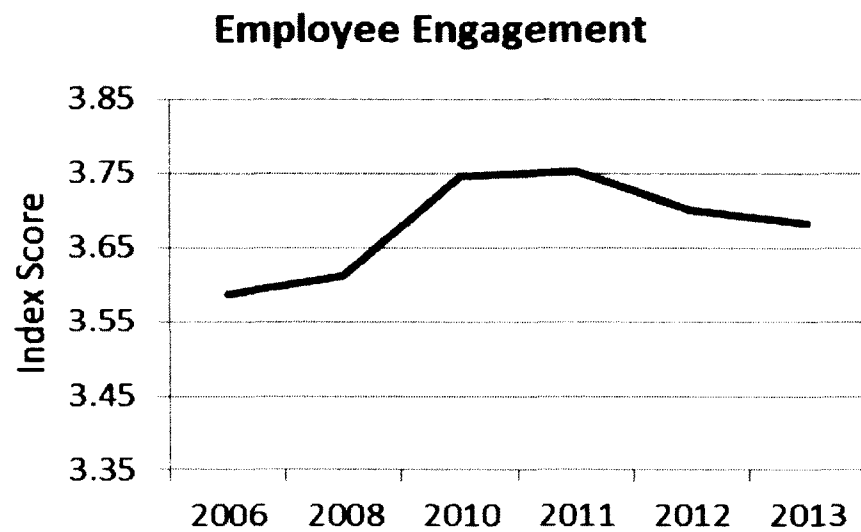
**Figure 29: First Excursion Analysis (2006-2013) – Question 1e: Talent Management Index Score**



**Figure 30: First Excursion Analysis (2006-2013) – Question 1e: Job Satisfaction Index Score**



**Figure 31: First Excursion Analysis (2006-2013) – Question 1e: Global Satisfaction Index Score**



**Figure 32: First Excursion Analysis (2006-2013) – Question 1e: Employee Engagement Index Score**

The means, standard deviations, standard errors, and 95% confidence intervals for each year are shown in Appendix H. The mean differences, significance levels, standard errors, 95% mean difference confidence intervals, and Cohen's d for yearly comparisons are shown in Appendix H.

In summation, all index scores increased from 2006 through 2010 and then decreased from 2010 through 2013. The empirical findings are discussed in Chapter 5. There was a statistically significant difference between means ( $p < .001$ ) for all six hypotheses and, therefore, the null hypotheses are rejected and the alternative hypotheses are accepted for all six hypotheses. Therefore, there are overall differences of all generations within the federal government utilizing OPM's six workplace indices from the years 2006 through 2013.

### **FIRST EXCURSION ANALYSIS (2006-2013) – QUESTION 2e**

Question 2e<sub>1</sub>: Are there differences in any given year (from 2006 through 2013) between generations within the federal government utilizing OPM's six workplace indices?

$H_{02(\text{Index \#})-\text{Year}}$ : All related group population means are equal within a given year (e.g. for 2013:  $\mu_{Y(\text{Index 1})} = \mu_{Y/X(\text{Index 1})} = \mu_{X(\text{Index 1})} = \mu_{X/BB(\text{Index 1})} = \mu_{BB(\text{Index 1})}$ )

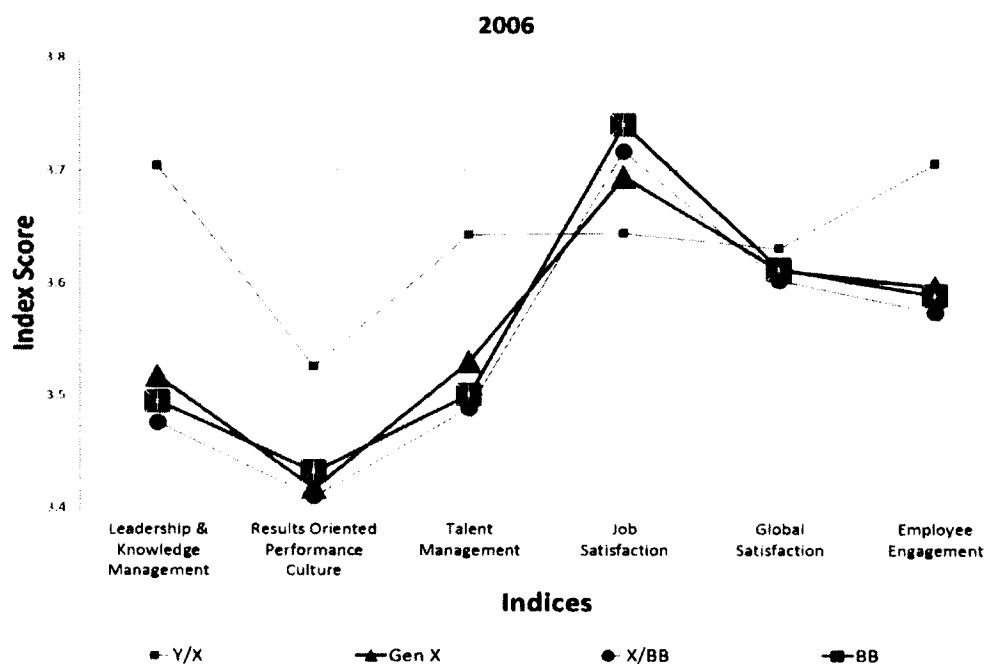
$H_{12(\text{Index \#})-\text{Year}}$ : At least one related group population mean is different

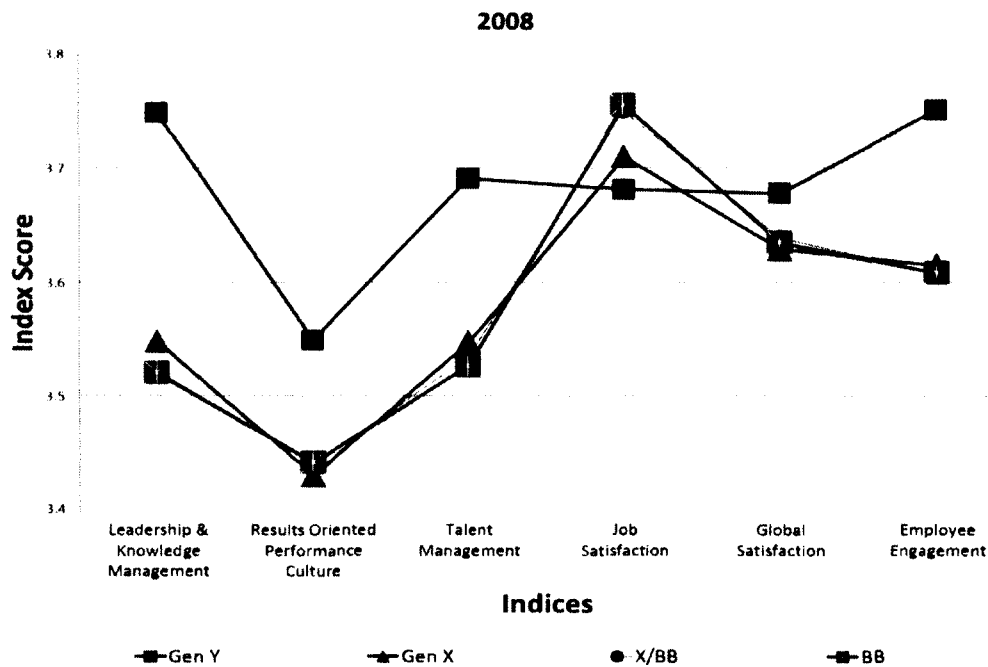
The sample size for question two is shown in Table 71.

**Table 71: First Excursion Analysis (2006-2013) – Question 2e: Sample Size**

Year	Generation	Sample Size
2006	Gen Y	0
	Y/X	2,473
	Gen X	37,597
	X/BB	70,058
	BB	107,107
2008	Gen Y	2,298
	Y/X	0
	Gen X	35,943
	X/BB	64,123
	BB	106,584

All six index scores are plotted against each generation shown in Figures 33-34.

**Figure 33: First Excursion Analysis (2006-2013) – Question 2e: 2006 Index Score per Generation**



**Figure 34: First Excursion Analysis (2006-2013) – Question 2e: 2008 Index Score per Generation**

The means, standard deviations, standard errors, and 95% confidence intervals for each generation are shown in Appendix H. The mean differences, significance levels, standard errors, 95% mean difference confidence intervals, and Cohen's d for generational comparisons are shown in Appendix H.

In summation, all Generation Y's index scores were higher (except Job Satisfaction where this index score was the lowest) than Generation X and Baby Boomers in 2008. The empirical findings are discussed in Chapter 5. There was a statistically significant difference between means ( $p < .001$ ) for 11 of 12 hypotheses (Global Satisfaction in 2006 ( $p = .068$ )) and, therefore, the null hypothesis is rejected for 11 of 12

hypotheses and the alternative hypothesis is accepted for 11 of 12 hypotheses. There was not a statistically significant difference between means ( $p=.068$ ) for Global Satisfaction in 2006 and, therefore, the null hypothesis is accepted. Therefore, there are differences in any given year (from 2006 through 2013) between generations (with the exception Global Satisfaction in 2006) within the federal government utilizing OPM's six workplace indices.

### **FIRST EXCURSION ANALYSIS (2006-2013) – QUESTION 3e**

Question 3e<sub>1</sub>: Are there overall differences between generations within the federal government utilizing OPM's six workplace indices from the years 2006 through 2013?

$H_{03(\text{Index \#})-(\text{Generation})}$ : All related group population means are equal (e.g. for

Index 1:  $\mu_{Y(2006-2013)} = \mu_{Y/X(2006-2013)} = \mu_{X(2006-2013)} =$

$\mu_{X/BB(2006-2013)} = \mu_{BB(2006-2013)}$ )

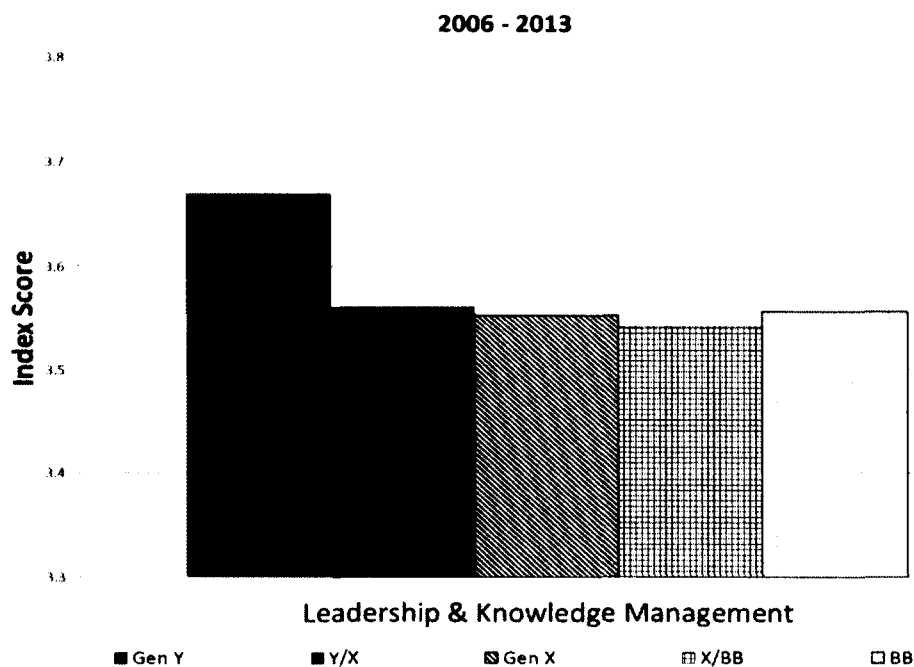
$H_{13(\text{Index \#})-(\text{Generation})}$ : At least one related group population mean is different

The sample size for each generation is shown in Table 72.

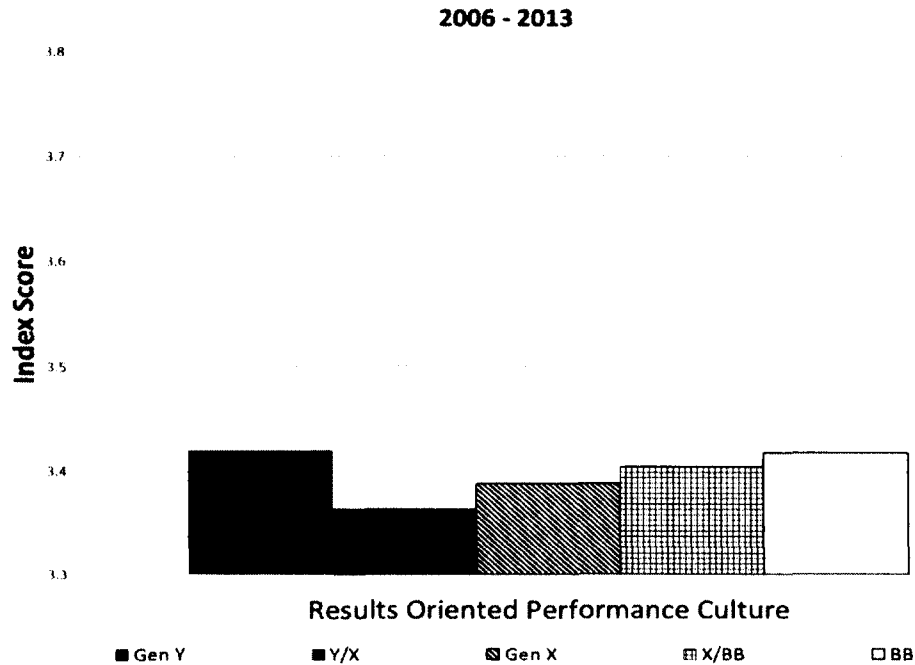
**Table 72: First Excursion Analysis (2006-2013) – Question 3e: Total Generation Sample Size**

<b>Year</b>	<b>Generation</b>	<b>Sample Size</b>
2006 - 2013	Gen Y	63,613
	Y/X	79,921
	Gen X	256,741
	X/BB	559,773
	BB	938,389

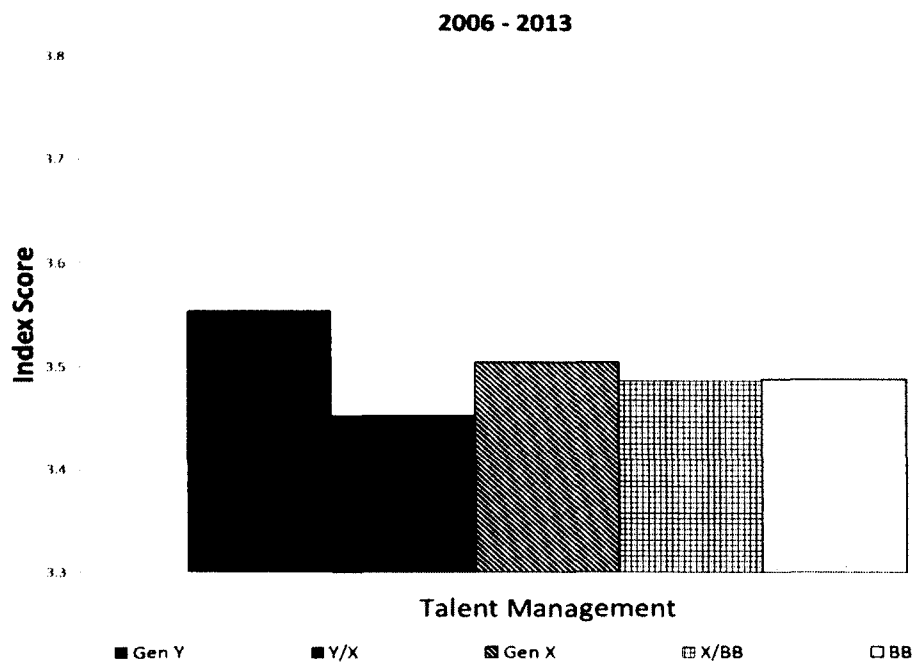
Individual index scores are plotted against each generation are shown in Figures 35-40.



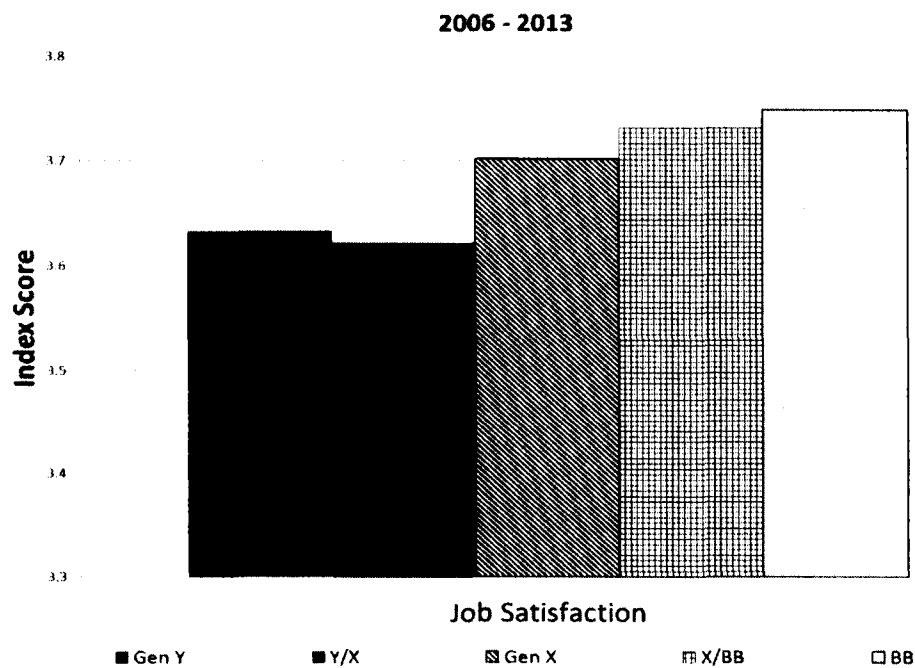
**Figure 35: First Excursion Analysis (2006-2013) – Question 3e: Leadership and Knowledge Management Index Score per Generation**



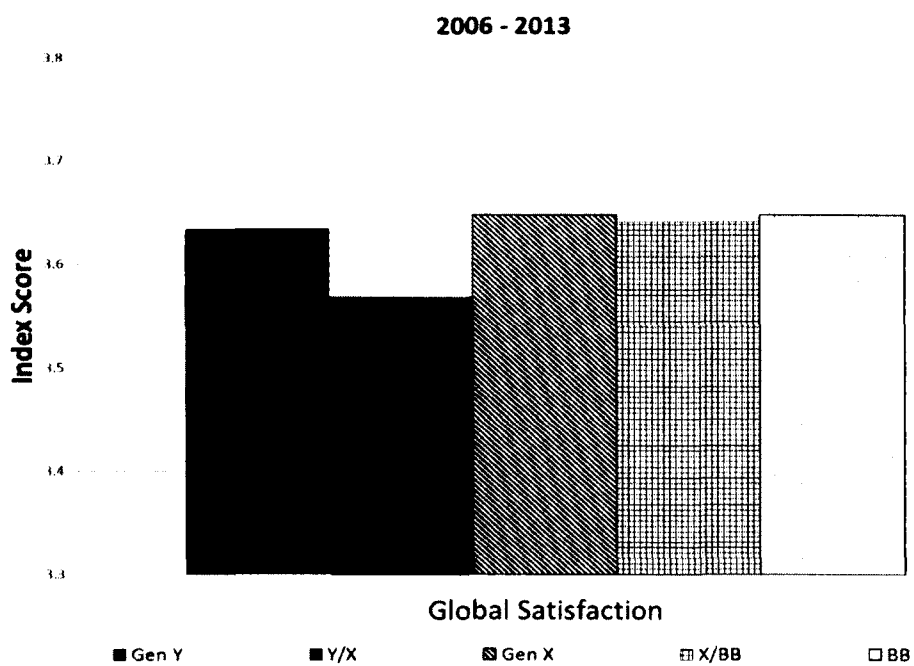
**Figure 36: First Excursion Analysis (2006-2013) – Question 3e: Results-Oriented Performance Culture Index Score per Generation**



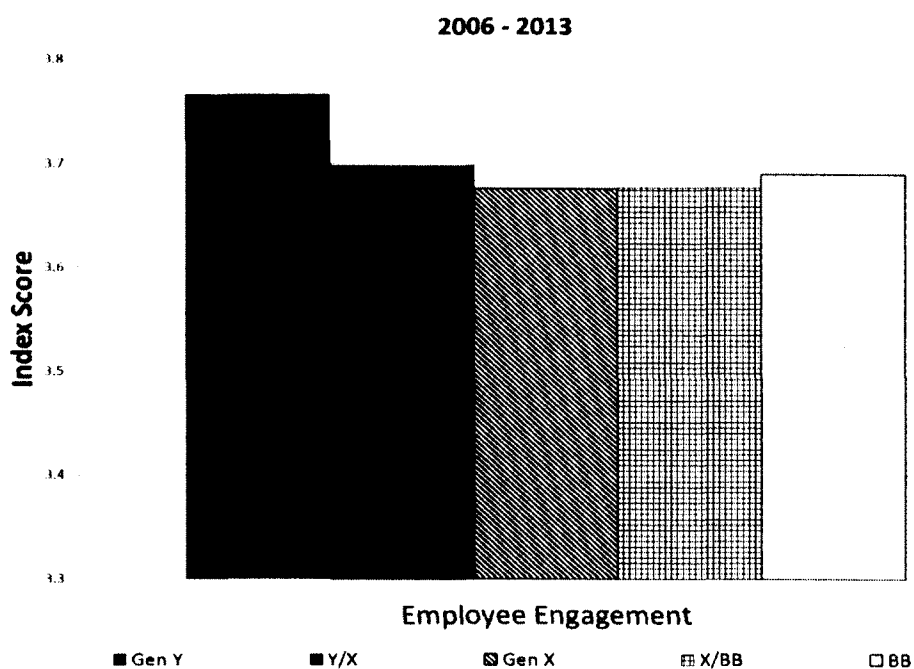
**Figure 37: First Excursion Analysis (2006-2013) – Question 3e: Talent Management Index Score per Generation**



**Figure 38: First Excursion Analysis (2006-2013) – Question 3e: Job Satisfaction Index Score per Generation**



**Figure 39: First Excursion Analysis (2006-2013) – Question 3e: Global Satisfaction Index Score per Generation**



**Figure 40: First Excursion Analysis (2006-2013) – Question 3e: Employee Engagement Index Score per Generation**

The means, standard deviations, standard errors, and 95% confidence intervals for each generation are shown in Appendix H. The mean differences, significance levels, standard errors, 95% mean difference confidence intervals, and Cohen's d for generational comparisons are shown in Appendix H.

In summation, Generation Y had the highest index scores for all indices from 2006 through 2013, except Job Satisfaction and Global Satisfaction, where those scores were the lowest. The empirical findings are discussed in Chapter 5. There was a

statistically significant difference between means ( $p < .001$ ) for all six hypotheses, therefore, the null hypotheses are rejected and the alternative hypotheses are accepted for all six hypotheses. Therefore, there are overall differences between generations within the federal government utilizing OPM's six workplace indices from the years 2006 through 2013.

There was a statistically significant difference between means ( $p < .001$ ) for 23 of 24 hypotheses in the first excursion analysis and, therefore, the null hypotheses are rejected and the alternative hypotheses are accepted for 23 of 24 hypotheses (with the exception of 2006 Global Satisfaction in question 2e).

## **SECOND EXCURSION ANALYSIS (2010-2013)**

The second excursion analysis used Generation Y's beginning birth year of 1977 and Generation X's ending birth year of 1976. This analysis focused on data from 2010-2013, omitting 2006 and 2008. This is consistent with the primary analysis for comparison purposes. This analysis has three questions with the following number of hypotheses per question: Question 1 (0 hypotheses), Question 2 (24 hypotheses), and Question 3 (6 hypotheses). Question one was not tested because it's a summation of all generations, regardless of birth year designation and was tested in the primary and first excursion analysis.

For questions two and three, the data were normally distributed for all indices, as assessed by visual inspection of Normal Q-Q Plots. Homogeneity of variances was

violated for all indices in both questions, as assessed by Levene's Test of Homogeneity of Variances ( $p < .001$ ), shown in Appendix I.

## SECOND EXCURSION ANALYSIS (2010-2013) – QUESTION 2e<sub>1</sub>

Question 2e<sub>1</sub>: Are there differences in any given year (from 2010 through 2013) between generations within the federal government utilizing OPM's six workplace indices?

$H_{02(\text{Index \#})-\text{Year}}$ : All related group population means are equal within a given year (e.g. for 2013:  $\mu_{Y(\text{Index 1})} = \mu_{Y/X(\text{Index 1})} = \mu_{X(\text{Index 1})} = \mu_{X/BB(\text{Index 1})} = \mu_{BB(\text{Index 1})}$ )

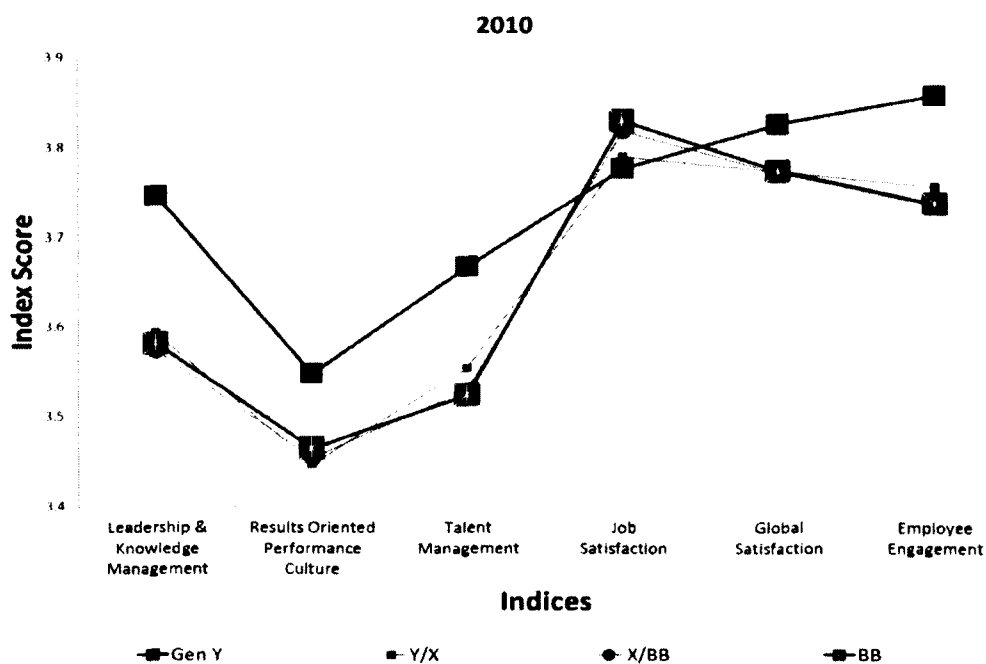
$H_{12(\text{Index \#})-\text{Year}}$ : At least one related group population mean is different

The sample size for question two is shown in Table 73. The combination of changing Generation Y's birth year to 1977 with the survey answer choices did not produce any Generation X samples (refer to Table 26 for the full second excursion generation breakout).

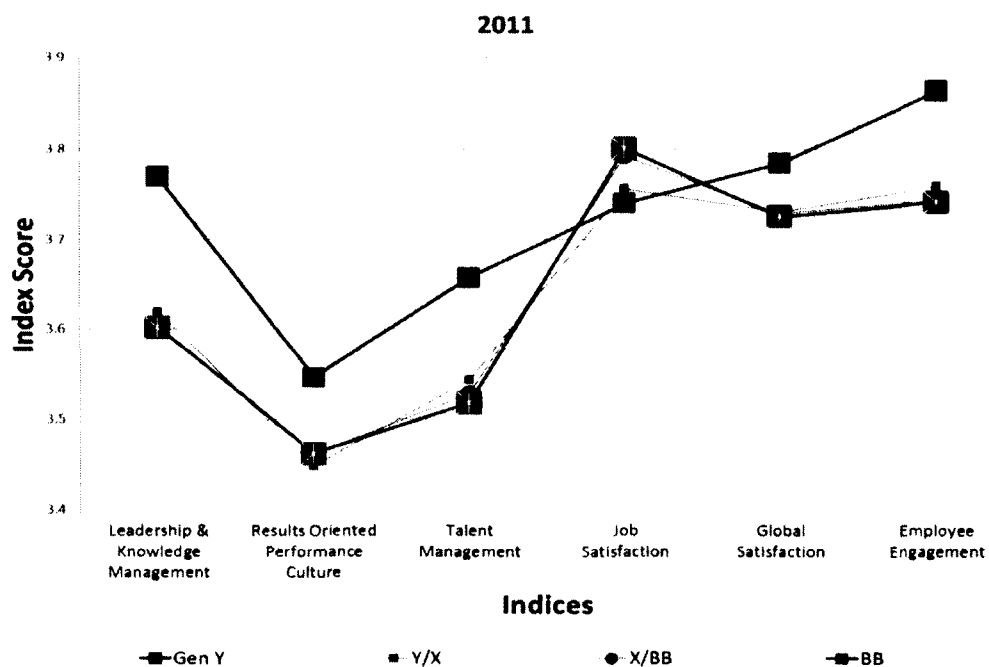
**Table 73: Second Excursion Analysis (2010-2013) – Question 2e1: Sample Size**

Year	Generation	Sample Size
2010	Gen Y	12,056
	Y/X	35,699
	Gen X	0
	X/BB	74,101
	BB	126,170
2011	Gen Y	13,625
	Y/X	38,379
	Gen X	0
	X/BB	71,708
	BB	121,496
2012	Gen Y	37,894
	Y/X	109,123
	Gen X	0
	X/BB	183,137
	BB	304,027
2013	Gen Y	16,441
	Y/X	58,747
	Gen X	0
	X/BB	96,646
	BB	173,005

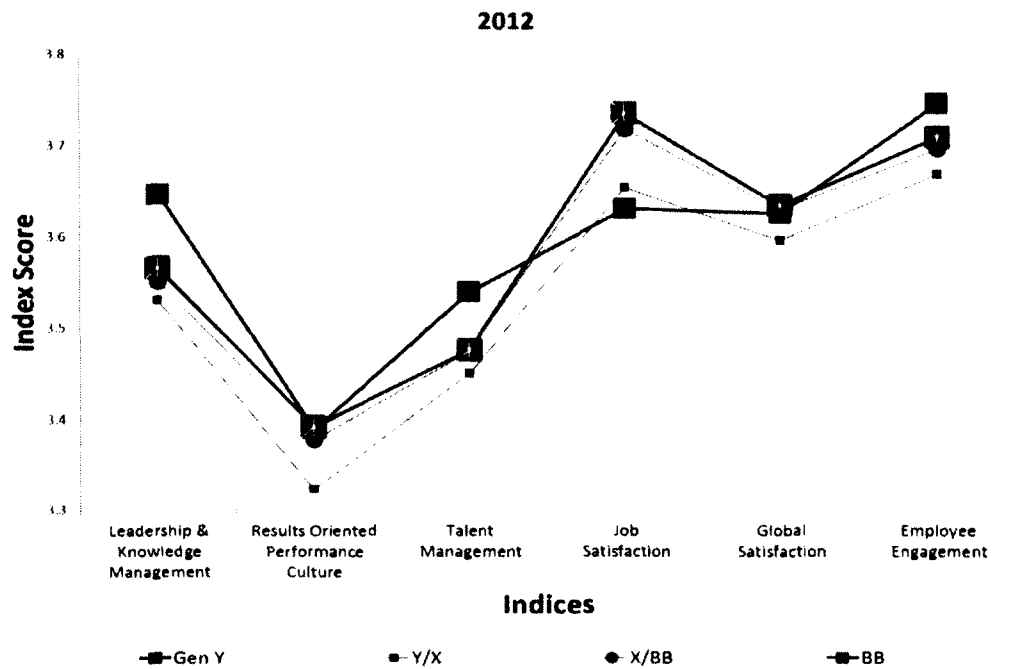
All six index scores are plotted against each generation shown in Figures 41-44.



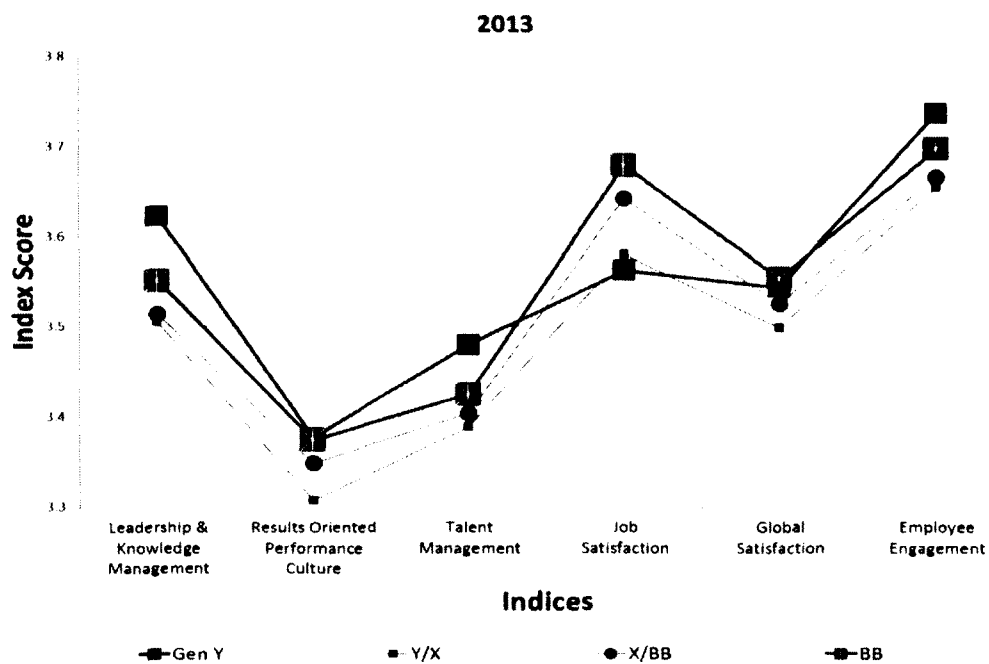
**Figure 41: Second Excursion Analysis (2010-2013) – Question 2e<sub>1</sub>: 2010 Index Score per Generation**



**Figure 42: Second Excursion Analysis (2010-2013) – Question 2e<sub>1</sub>: 2011 Index Score per Generation**



**Figure 43: Second Excursion Analysis (2010-2013) – Question 2e<sub>1</sub>: 2012 Index Score per Generation**



**Figure 44: Second Excursion Analysis (2010-2013) – Question 2e<sub>1</sub>: 2013 Index Score per Generation**

The means, standard deviations, standard errors, and 95% confidence intervals for each generation are shown in Appendix I. The mean differences, significance levels, standard errors, 95% mean difference confidence intervals, and Cohen's d for generational comparisons are shown in Appendix I.

In summation, all Generation Y's index scores from 2010 through 2013 were higher (except Job Satisfaction where this index score was the lowest) than Baby Boomers. The empirical findings are discussed in Chapter 5. There was a statistically significant difference between means ( $p < .001$ ) for all 24 hypotheses, therefore, the null hypotheses are rejected and the alternative hypotheses are accepted for all 24 hypotheses. Therefore, there are differences in any given year (from 2010 through 2013) between generations within the federal government utilizing OPM's six workplace indices.

## **SECOND EXCURSION ANALYSIS (2010-2013) – QUESTION 3e<sub>1</sub>**

Question 3e<sub>2</sub>: Are there overall differences between generations within the federal government utilizing OPM's six workplace indices from the years 2010 through 2013?

$H_{03(\text{Index \#})-(\text{Generation})}$ : All related group population means are equal (e.g. for  
 Index 1:  $\mu_{Y(2010-2013)} = \mu_{Y/X(2010-2013)} = \mu_{X(2010-2013)} =$   
 $\mu_{X/BB(2010-2013)} = \mu_{BB(2010-2013)}$ )

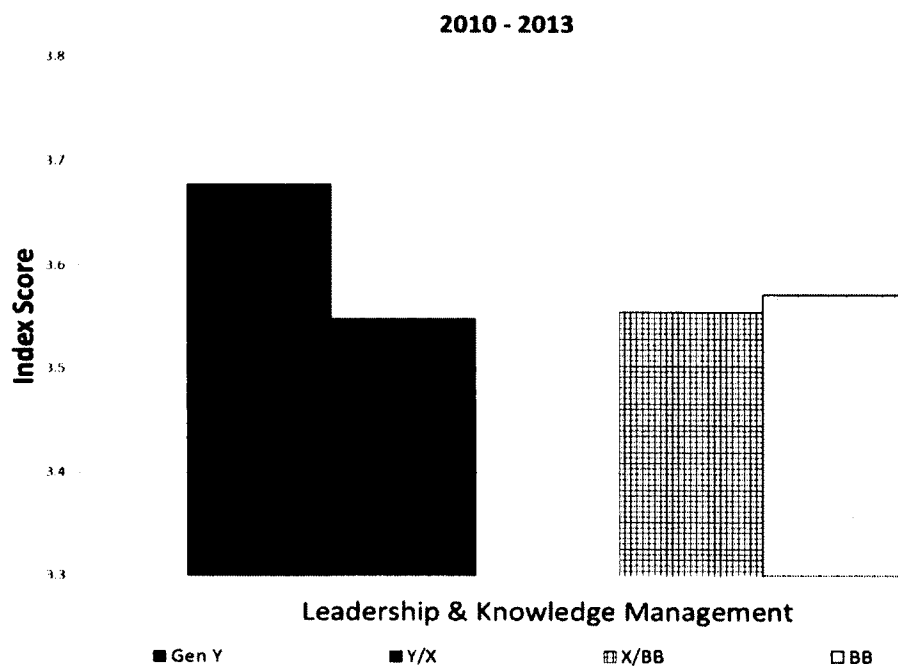
$H_{13(\text{Index \#})-(\text{Generation})}$ : At least one related group population mean is different

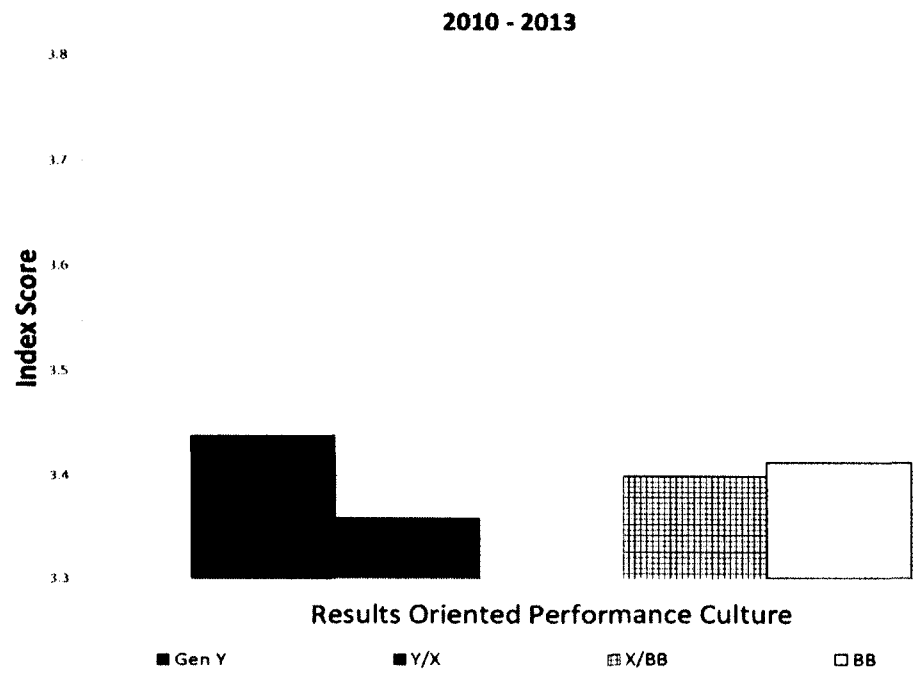
The sample size for question three is shown in Table 74.

**Table 74: Second Excursion Analysis (2010-2013) – Question 3e<sub>1</sub>: Sample Size**

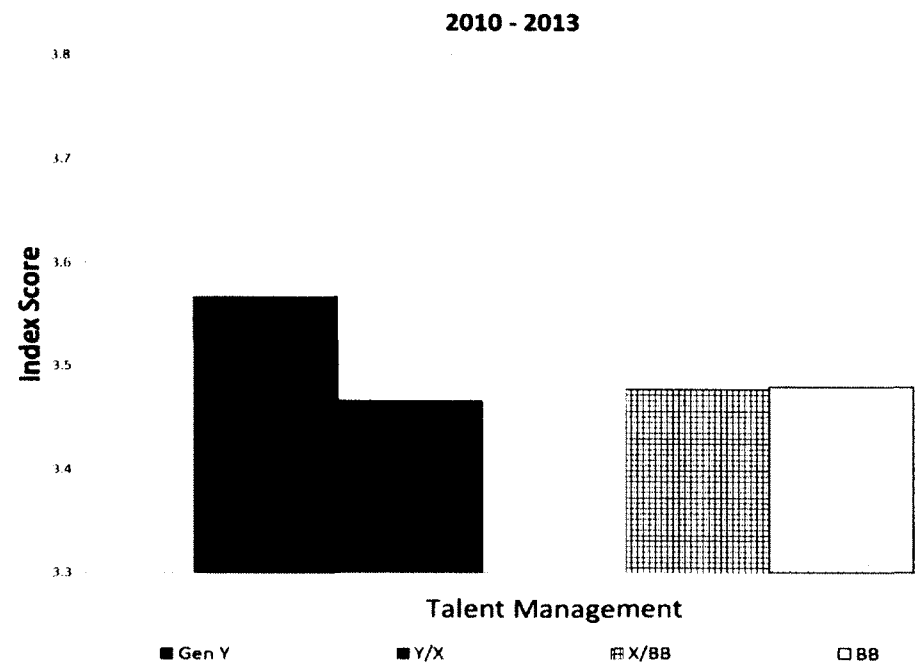
Year	Generation	Sample Size
2010-2013	Gen Y	80,016
	Y/X	241,948
	Gen X	0
	X/BB	425,592
	BB	724,698

Individual index scores are plotted against each generation are shown in Figures 45-50.

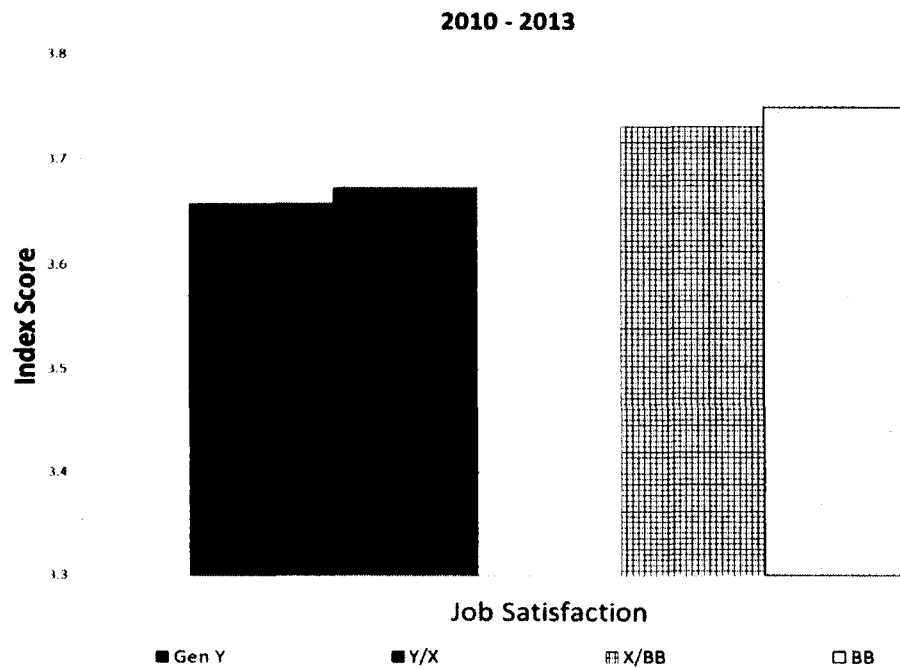
**Figure 45: Second Excursion Analysis (2010-2013) – Question 3e<sub>1</sub>: Leadership and Knowledge Management Index Score per Generation**



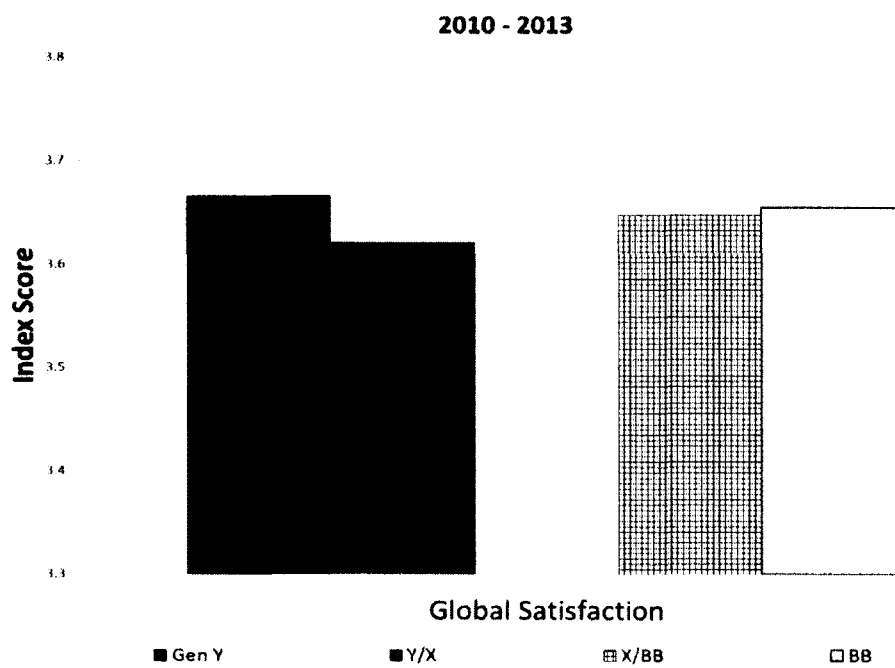
**Figure 46: Second Excursion Analysis (2010-2013) – Question 3e<sub>1</sub>: Results-Oriented Performance Culture Index Score per Generation**



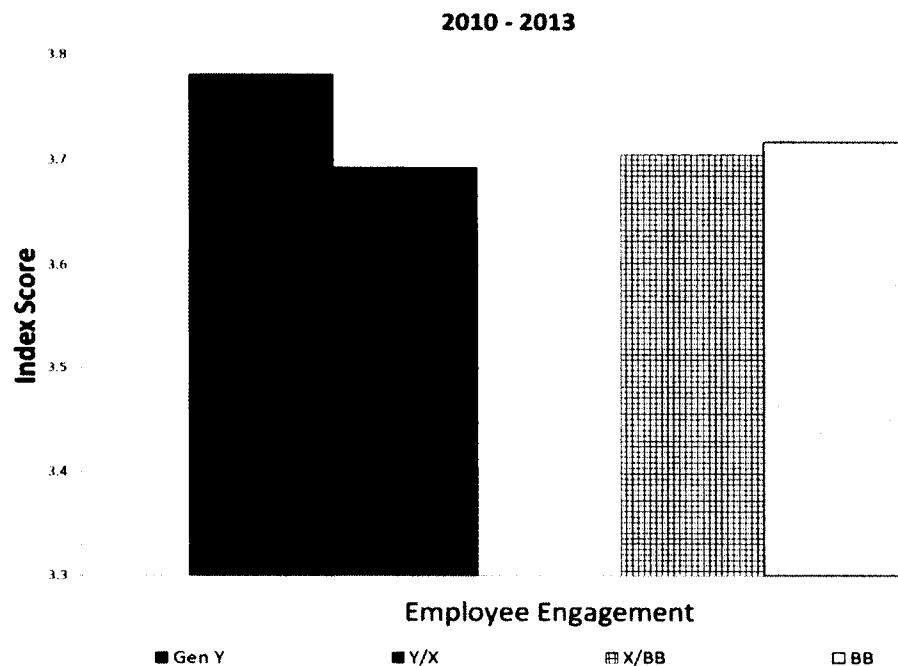
**Figure 47: Second Excursion Analysis (2010-2013) – Question 3e<sub>1</sub>: Talent Management Index Score per Generation**



**Figure 48: Second Excursion Analysis (2010-2013) – Question 3e<sub>1</sub>: Job Satisfaction Index Score per Generation**



**Figure 49: Second Excursion Analysis (2010-2013) – Question 3e<sub>1</sub>: Global Satisfaction Index Score per Generation**



**Figure 50: Second Excursion Analysis (2010-2013) – Question 3e<sub>1</sub>: Employee Engagement Index Score per Generation**

The means, standard deviations, standard errors, and 95% confidence intervals for each generation are shown in Appendix I. The mean differences, significance levels, standard errors, 95% mean difference confidence intervals, and Cohen's *d* for generational comparisons are shown in Appendix I.

In summation, Generation Y had the highest index scores for all indices from 2010 through 2013, except Job Satisfaction, where that score was the lowest. The empirical findings are discussed in Chapter 5. There was a statistically significant difference between means ( $p < .001$ ) for all six hypotheses, therefore, the null hypotheses

are rejected and the alternative hypotheses are accepted for all six hypotheses. Therefore, there are overall differences between generations within the federal government utilizing OPM's six workplace indices from the years 2010 through 2013.

There was a statistically significant difference between means ( $p < .001$ ) for all 30 hypotheses in the second excursion analysis (2010-2013) and, therefore, the null hypotheses are rejected and the alternative hypotheses are accepted for all 30 hypotheses.

## **SECOND EXCURSION ANALYSIS (2006-2013)**

The second excursion analysis also used Generation Y's beginning birth year of 1977 and Generation X's ending birth year of 1976. This excursion analysis focused on data from 2006-2013 in order to make a comparison with the first excursion analysis.

This analysis has three questions with the following number of hypotheses per question:

Question 1 (0 hypotheses), Question 2 (2 hypotheses), and Question 3 (6 hypotheses).

Question one was not tested because it's a summation of all generations, regardless of birth year designation and was tested in the primary and first excursion analysis.

Question two will only report results from 2006 and 2008 since 2010-2013 was reported in the second excursion analysis (2010-2013).

For questions two and three, the data were normally distributed for all indices, as assessed by visual inspection of Normal Q-Q Plots. Homogeneity of variances was violated for all indices in both questions, as assessed by Levene's Test of Homogeneity of Variances ( $p < .001$ ), shown in Appendix J.

## SECOND EXCURSION ANALYSIS (2006-2013) – QUESTION 2e<sub>2</sub>

Question 2e<sub>2</sub>: Are there differences in any given year (from 2006 through 2013) between generations within the federal government utilizing OPM's six workplace indices?

$H_{02(\text{Index \#})-\text{Year}}$ : All related group population means are equal within a given year (e.g. for 2013:  $\mu_{Y(\text{Index 1})} = \mu_{Y/X(\text{Index 1})} = \mu_{X(\text{Index 1})} = \mu_{X/BB(\text{Index 1})} = \mu_{BB(\text{Index 1})}$ )

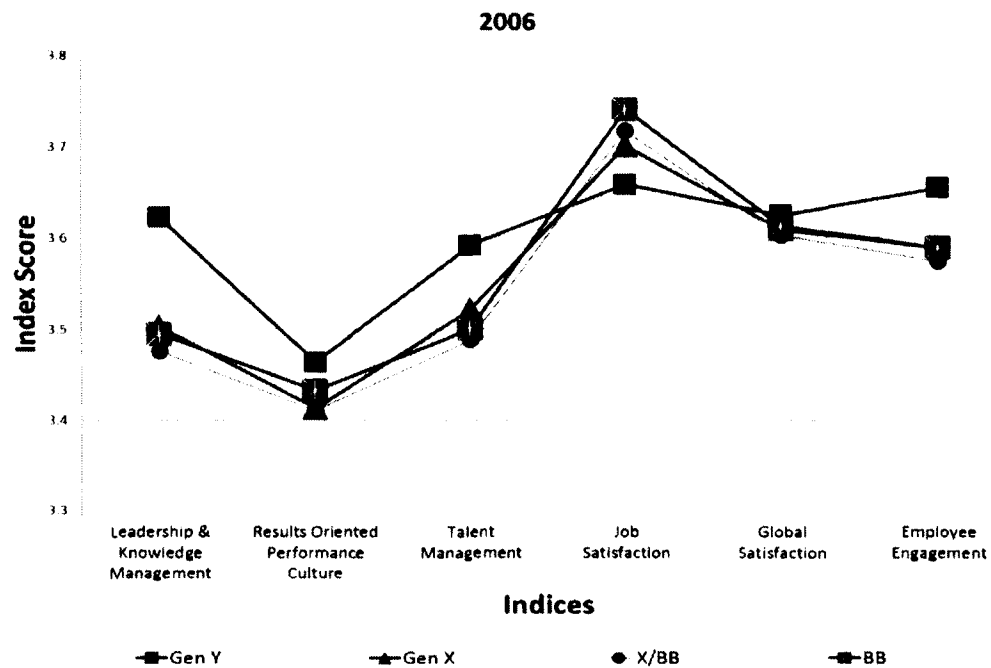
$H_{12(\text{Index \#})-\text{Year}}$ : At least one related group population mean is different

The sample size for question two is shown in Table 75.

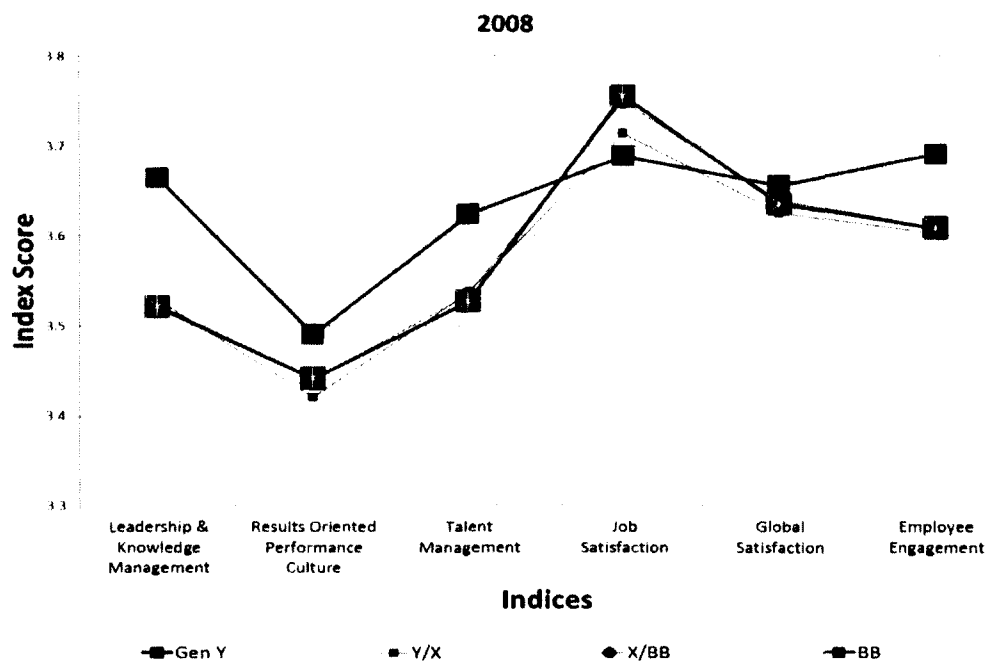
**Table 75: Second Excursion Analysis (2006-2013) – Question 2e<sub>2</sub>: Sample Size**

Year	Generation	Sample Size
2006	Gen Y	8,764
	Y/X	0
	Gen X	31,306
	X/BB	70,058
	BB	107,107
2008	Gen Y	8,858
	Y/X	29,383
	Gen X	0
	X/BB	64,123
	BB	106,584

All six index scores are plotted against each generation shown in Figures 51-52.



**Figure 51: Second Excursion Analysis (2006-2013) – Question 2e<sub>2</sub>: 2006 Index Score per Generation**



**Figure 52: Second Excursion Analysis (2006-2013) – Question 2e<sub>2</sub>: 2008 Index Score per Generation**

The means, standard deviations, standard errors, and 95% confidence intervals for each generation are shown in Appendix J. The mean differences, significance levels, standard errors, 95% mean difference confidence intervals, and Cohen's d for generational comparisons are shown in Appendix J.

In summation, all Generation Y's index scores from 2006 and 2008 were higher (except Job Satisfaction where this index score was the lowest) than Generation X (in 2006 only) and Baby Boomers. The empirical findings are discussed in Chapter 5. There was a statistically significant difference between means ( $p < .05$ ) for all 12 hypotheses, therefore, the null hypothesis is rejected for all 12 hypotheses and the alternative hypothesis is accepted for all 12 hypotheses. Therefore, there are differences in any given year (from 2006 through 2013) between generations within the federal government utilizing OPM's six workplace indices.

## **SECOND EXCURSION ANALYSIS (2006-2013) – QUESTION 3e<sub>2</sub>**

Question 3e<sub>2</sub>: Are there overall differences between generations within the federal government utilizing OPM's six workplace indices from the years 2006 through 2013?

H<sub>03(Index #)-(Generation)</sub>: All related group population means are equal (e.g. for

Index 1:  $\mu_{Y(2006-2013)} = \mu_{Y/X(2006-2013)} = \mu_{X(2006-2013)} =$

$\mu_{X/BB(2006-2013)} = \mu_{BB(2006-2013)}$ )

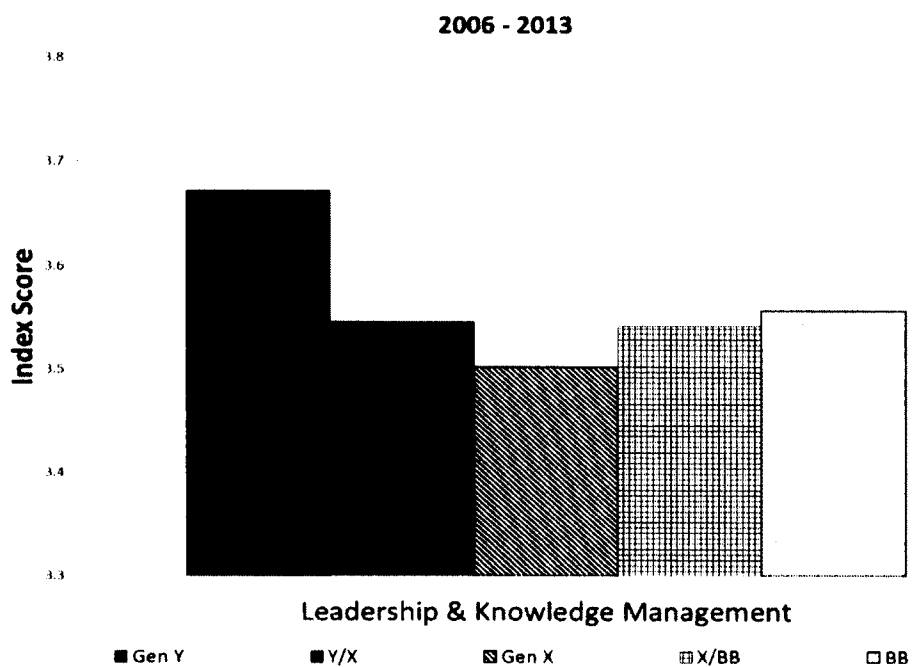
H<sub>13(Index #)-(Generation)</sub>: At least one related group population mean is different

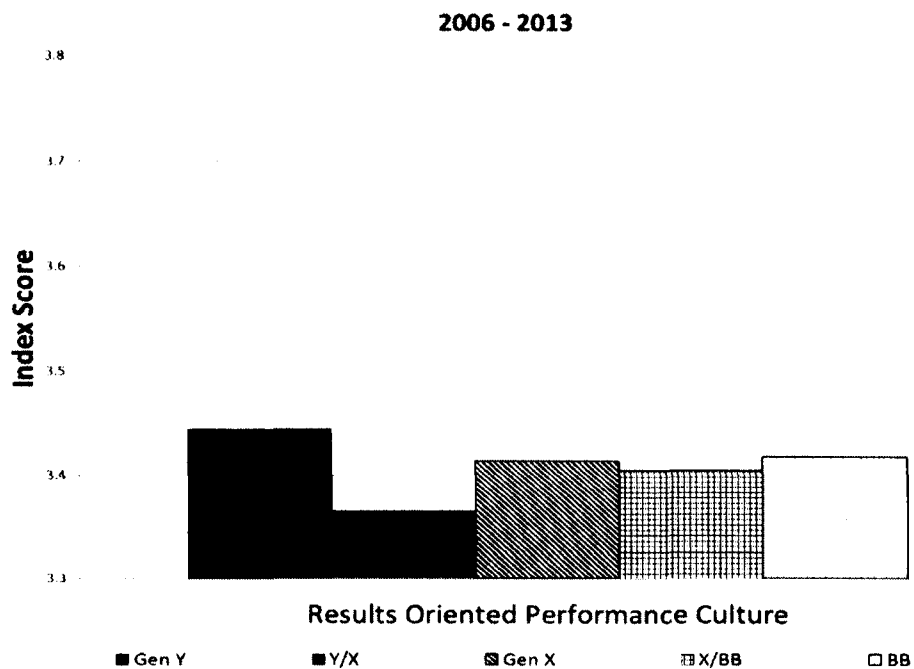
The sample size for question three is shown in Table 76.

**Table 76: Second Excursion Analysis (2006-2013) – Question 3e<sub>2</sub>: Sample Size**

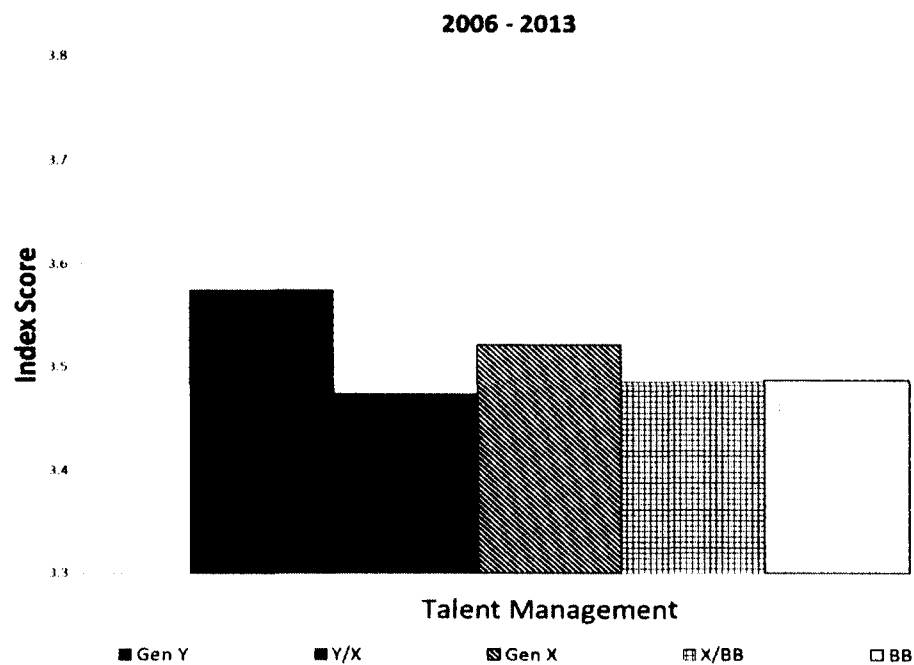
Year	Generation	Sample Size
2006-2013	Gen Y	97,638
	Y/X	271,331
	Gen X	31,306
	X/BB	559,773
	BB	938,389

Individual index scores are plotted against each generation are shown in Figures 53-58.

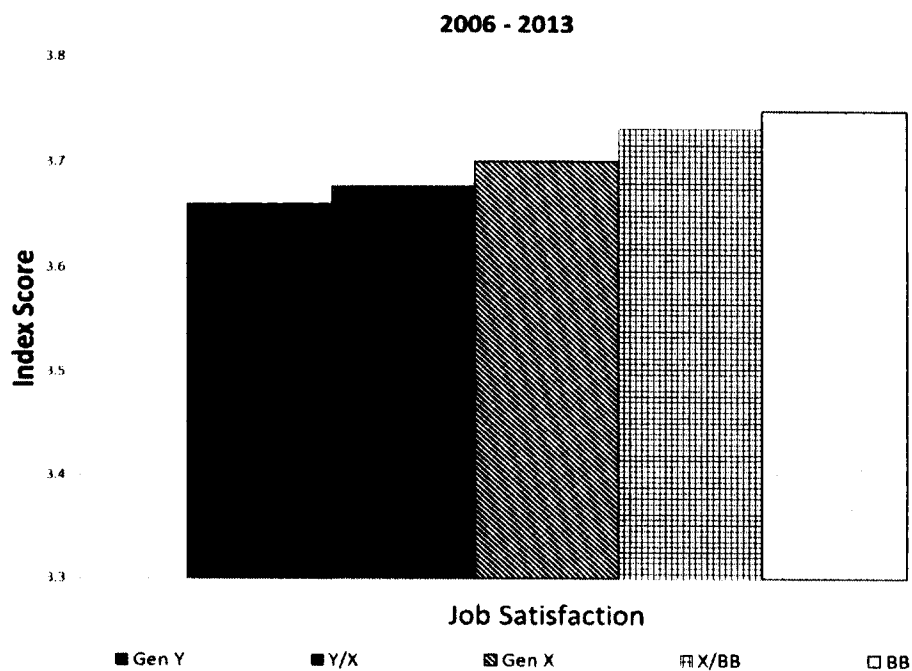
**Figure 53: Second Excursion Analysis (2006-2013) – Question 3e<sub>2</sub>: Leadership and Knowledge Management Index Score per Generation**



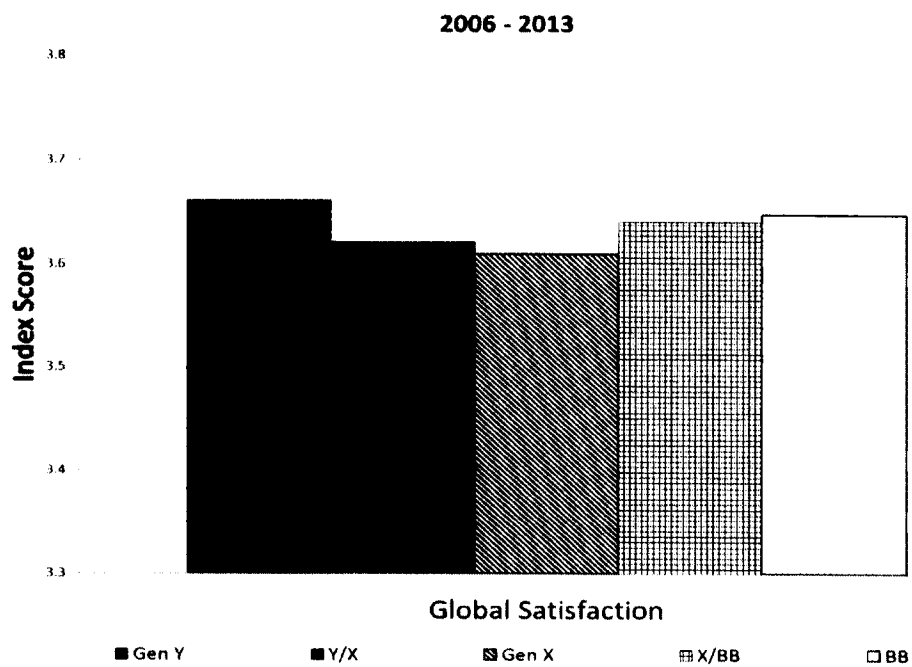
**Figure 54: Second Excursion Analysis (2006-2013) – Question 3e<sub>2</sub>: Results-Oriented Performance Culture Index Score per Generation**



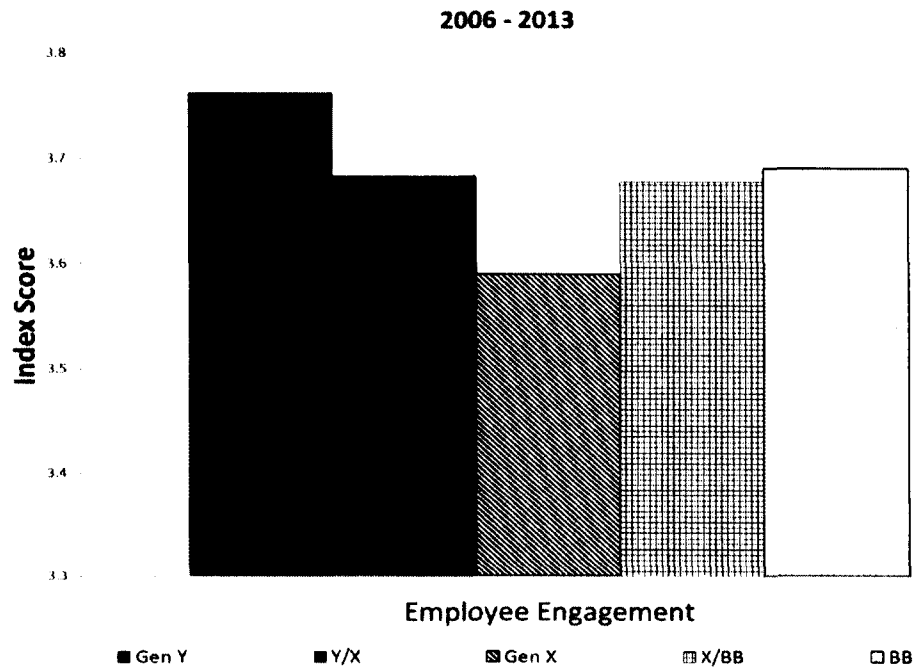
**Figure 55: Second Excursion Analysis (2006-2013) – Question 3e<sub>2</sub>: Talent Management Index Score per Generation**



**Figure 56: Second Excursion Analysis (2006-2013) – Question 3e<sub>2</sub>: Job Satisfaction Index Score per Generation**



**Figure 57: Second Excursion Analysis (2006-2013) – Question 3e<sub>2</sub>: Global Satisfaction Index Score per Generation**



**Figure 58: Second Excursion Analysis (2006-2013) – Question 3e<sub>2</sub>: Employee Engagement Index Score per Generation**

The means, standard deviations, standard errors, and 95% confidence intervals for each generation are shown in Appendix J. The mean differences, significance levels, standard errors, 95% mean difference confidence intervals, and Cohen's *d* for generational comparisons are shown in Appendix J.

In summation, Generation Y had the highest index scores for all indices from 2006 through 2013, except Job Satisfaction, where this score was the lowest. The empirical findings are discussed in Chapter 5. There was a statistically significant difference between means ( $p < .001$ ) for all six hypotheses, therefore, the null hypotheses are rejected and the alternative hypotheses are accepted for all six hypotheses. Therefore,

there are overall differences between generations within the federal government utilizing OPM's six workplace indices from the years 2006 through 2013.

There was a statistically significant difference between means ( $p < .05$ ) for all 18 hypotheses in the second excursion analysis (2006-2013) and, therefore, the null hypotheses are rejected and the alternative hypotheses are accepted for all 18 hypotheses.

## RELIABILITY

Table 77 presents the reliability values (Cronbach's alpha) for each index using the primary analysis data from 2010-2013. All reliability values are much higher than 0.7 and are considered good using the criteria established by Hair, Black, Babin, & Anderson (2010). However, the high reliability values (and subsequent characterization of good) may be misleading.

**Table 77: Reliability Values for Each Index**

Index	Valid Cases	Excluded Cases	Cronbach's Alpha	Items
Leadership and Knowledge Management	1,651,853	246,599	.923	12
Results-Oriented Performance Culture	1,524,454	373,998	.917	13
Talent Management	1,731,983	166,469	.878	7
Job Satisfaction	1,841,518	56,934	.848	7
Global Satisfaction	1,875,484	22,968	.841	4
Employee Engagement	1,256,911	641,541	.946	15

As the number of items within each index increases, the reliability also increases (and the scale should increase) especially when the number of items reach and surpasses ten (Ibid). Because the six indices were not constructed using exploratory or confirmatory factor analysis, rather a psychometric approach (Federal Employee Viewpoint Survey Team, personal communication, January 2, 2014), caution is given to the assessment of good for all six indices.

## **EFFECT SIZES**

Table 78 summarizes the comparison effect sizes for all research questions in both the primary and excursion analyses which are greater than 0.20 (classified as small (Cohen, 1988)) for all workplace indices. Table 78 consists of only small effect sizes with the largest in this study being .364. Those comparisons left off this table were less than 0.2. Due to the majority of the small effect sizes in this study, there is still no conclusive evidence as to whether generational differences exist.



## SUMMARY

The variables in the survey were analyzed via one-way ANOVA tests showing the means, standard deviations, standard errors of the means, lower and upper confidence interval bounds of the means, and effect sizes. The 36 primary hypotheses and 72 excursion hypotheses were tested to answer the three high level questions. The results of the analyses are:

Primary Analysis (2010-2013): There was a statistically significant difference between means ( $p < .001$ ) for all 36 hypotheses in the primary analysis and, therefore, the null hypotheses are rejected and the alternative hypotheses are accepted for all 36 hypotheses.

First Excursion Analysis (2006-2013): There was a statistically significant difference between means ( $p < .001$ ) for 23 of 24 hypotheses in the first excursion analysis and, therefore, the null hypotheses are rejected and the alternative hypotheses are accepted for 23 of 24 hypotheses (with the exception of 2006 Global Satisfaction in question 2e).

Second Excursion Analysis (2010-2013): There was a statistically significant difference between means ( $p < .001$ ) for all 30 hypotheses in the second excursion analysis (2010-2013) and, therefore, the null hypotheses are rejected and the alternative hypotheses are accepted for all 30 hypotheses.

Second Excursion Analysis (2006-2013): There was a statistically significant difference between means ( $p < .05$ ) for all 18 hypotheses in the second excursion analysis

(2006-2013) and, therefore, the null hypotheses are rejected and the alternative hypotheses are accepted for all 18 hypotheses.

The overall results are statistically significant showing there are differences between all generations within each year and between all generations over time regardless of whether Generation Y's birth years begins in 1977 or 1983 or regardless of whether Generation X's birth year ends in 1976 or 1982. The following chapter summarizes the dissertation, provides empirical findings, discusses theoretical implications, and recommendations for future research.

## **CHAPTER V: FINDINGS, IMPLICATIONS, AND RECOMMENDATIONS**

### **SUMMARY**

The purpose of the study was to fill a current knowledge gap within the federal government's strategic human capital management focus by understanding the workplace differences between Generation Y, Generation X, and Baby Boomer federal government employees. The study used literature on private industry theory that generational differences do exist (synthesized with federal government literature) as a foundation for addressing the research questions within the federal government domain. The results of the study presented the data needed to begin a foundation for understanding what those differences are and can enable federal government human capital management leaders to formulate strategic human capital management plans. This study sought to answer the following three research questions:

1. Are there overall differences of all generations within the federal government utilizing OPM's six workplace indices from the years 2010 through 2013?
2. Are there differences in any given year (from 2010 through 2013) between generations within the federal government utilizing OPM's six workplace indices?
3. Are there overall differences between generations within the federal government utilizing OPM's six workplace indices from the years 2010 through 2013?

Additionally, there were excursion analyses that amplified the above three research questions. The first excursion (2006-2008) answered the same three research questions and expanded the primary data set to include 2006 and 2008 data. The second excursion (2010-2013) answered the same three research questions but changed Generation Y's beginning birth year from 1982 to 1977 and Generation X's ending birth year from 1982 to 1976. The second excursion (2006-2013) answered the same three research questions, expanded the data set to include 2006 and 2008 data, changed Generation Y's beginning birth year from 1982 to 1977, and changed Generation X's ending birth year from 1982 to 1976 (i.e., combined the first two excursion analyses).

This study analyzed the six indices within OPM's multi-year study of the federal workforce via their Federal Employee Viewpoint Survey. The results are statistically significant answering yes to all three research questions. There are overall differences of all generations within the federal government utilizing OPM's six workplace indices from the years 2010 through 2013; there are differences in any given year (from 2010 through 2013) between generations within the federal government utilizing OPM's six workplace indices; and there are overall differences between generations within the federal government utilizing OPM's six workplace indices from the years 2010 through 2013. The results of the excursion analyses are also statistically significant (with the exception of 2006 Global Satisfaction in question 2e) and answer yes to the three research questions using and expanded data set and different birth year cutoffs for Generation Y and Generation X. This chapter will discuss the empirical findings of the three research questions, provide the theoretical implications, and outline the recommendations for future research.

## EMPIRICAL FINDINGS

The empirical findings of chapter four's data analysis are synthesized to answer the study's three research questions. Question one sought to find if there are there overall differences of all generations within the federal government utilizing OPM's six workplace indices from the years 2010 through 2013. The results from the primary research show all six indices in a decline over the years of 2010 through 2013. The results from the excursion research show all six indices increasing from 2006 to 2010, and then dropping thereafter through 2013. These declines suggest that overall attitudes are dropping within the federal government in recent years (i.e., 2010 through 2013). Job Satisfaction, the only inward focused index, was the highest or second highest rated index in every year (when mean values were compared across indices). The Results-Oriented Performance Culture and Talent Management indices had the lowest scores and second lowest scores, respectfully.

The overall declines in federal government employee attitudes, from 2010 through 2013, paired with the small calculated effect sizes provide statistical evidence for only the Job Satisfaction and Global Satisfaction indices. Both are declining enough to warrant attention from federal government human capital managers. The results from question one provides a frame of reference for questions two and three.

Question two sought to find if there are differences in any given year (from 2010 through 2013) between generations within the federal government utilizing OPM's six workplace indices. The results from both the primary and excursion research show an overwhelming trend of Generation Y having the highest index levels for all indices (except for Job Satisfaction). When Generation Y's highest index levels are compared

with calculated effect sizes, the results suggest there are real differences between Generation Y and Generation X and between Generation Y and Baby Boomers. Of all the effect sizes that are greater than 0.2, and classified as small (Cohen, 1988), most reside within question two's generational comparisons.

As noted, Generation Y's Job Satisfaction index scores were not the highest (compared to Generation X and Baby Boomers) within the primary or the excursion analyses. In 2010 and 2011, Generation X had the lowest Job Satisfaction index scores (Generation Y had the second lowest), in 2012 and 2013 Generation Y had the lowest, and in the excursion analysis, Generation Y had the lowest Job Satisfaction index scores. Comparing the low Job Satisfaction index scores of Generation Y to Generation X and Baby Boomers yielded no effect sizes great than 0.2.

Question three sought to find if there are overall differences between generations within the federal government utilizing OPM's six workplace indices from the years 2010 through 2013. The results from the primary and first excursion research show Generation Y had the highest index scores for all indices, except Job Satisfaction and Global Satisfaction, where those scores were the lowest. The results from the second excursions show Generation Y again had the highest index scores for all indices except Job Satisfaction, where those index scores are once again the lowest.

Generation Y's index scores for Job Satisfaction were consistently the lowest throughout this study. The variability of results between the five indices and the Job Satisfaction index may be due to not testing for construct validity; where three of the seven Job Satisfaction questions were used within two other indices' question sets. When comparing all the index scores to the effect sizes, there was only one comparison in the

2006-2013 excursion analysis that had a small effect. No effect sizes in Job Satisfaction or Global Satisfaction had any effects greater than 0.2.

In the Global Satisfaction index (Stayers and Leavers sub-category) this single question was analyzed over the years of 2006-2013: Are you considering leaving your organization within the next year and if so, why? Respondent answer choices for this question were: A) No, B) Yes, to retire, C) Yes, to take another job within the federal government, D) Yes, to take another job outside the federal government, and E) Yes, other.

All employees not leaving their organization within the next year increased from 2006-2010 and then decreased from 2010 on. Generation Y decreased the most and is the only generation to have a negative trend line. All employees leaving their organization but staying within the federal government increased from 2006-2010 and then decreased from 2010-2011 with Generation Y having the largest positive slope for leaving. All employees leaving their organization and going outside the federal government decreased from 2006-2010 and increased from 2010-2011 with Generation Y having the only positive trend line. The next section will synthesize the aforementioned conclusions and provide implications for human capital management leaders.

## **THEORETICAL IMPLICATIONS**

The empirical findings to the three research questions incorporated with the literature form the basis for the theoretical implications. The increase in federal government employee attitudes from 2006 to 2010, as measured by the six index levels in

this study, confirms OPM (2006a) and OPM (2008)'s results. Additionally, the continued decline in federal government employee attitudes since 2010 also confirms OPM (2010), OPM (2011a), OPM (2012a), and OPM (2013a) results, even though there were only two small effects calculated with Job Satisfaction and Global Satisfaction.

The ranking of the Job Satisfaction as the highest or second highest index over time is somewhat consistent to OPM (2006a), OPM (2008), OPM (2010), OPM (2011a), OPM (2012a), and OPM (2013a)'s ranking as the definitive highest over time. The ranking of Results-Oriented Performance Culture and Talent Management being the lowest and second lowest indices, respectfully, is mostly consistent to OPM (2006a), OPM (2008), OPM (2010), OPM (2011a), OPM (2012a), and OPM (2013a)'s results where Talent Management was the second lowest for two years.

The theoretical implications for understanding the Generational Y federal workforce when compared to Generation X and Baby Boomers are discussed in detail. Generation Y's workplace attitudes (except for Job Satisfaction) are the highest among working generations within the years in this study and over time, regardless of Generation Y's birth years. The largest number of small effect sizes calculated in this study was found when comparing Generation Y to Generation X and Baby Boomers within each year, not over time. These modest differences between generations are consistent with D'Amato and Herzfeldt (2008), De Meuse & Mlodzik (2010), and Dries et al. (2008). Additionally, the pattern of generational differences coupled with small effect sizes are also consistent with Cennamo and Gardner (2008), Hess and Jespen (2009), and the meta-analysis of Costanza et al. (2012). With the small effect sizes reported, there is still no conclusive evidence as to whether generational differences exist.

The overall workforce ranked Job Satisfaction the highest or second highest each year, whereas Generation Y ranked Job Satisfaction consistently the lowest within each year and decreased over time. The low Job Satisfaction results within years and over time indicates the longer Generation Y works for the federal government the less job satisfaction they have. OPM (2010) states that “Job Satisfaction is a critical factor in the retention of employees” (p. 16). Job Satisfaction, the only inward employee perception index within the study, aligns with the literature review in private industry outlining Generation Y’s workplace attributes being focused on inward perceptions.

Generation Y’s steep separation trend line and the only positive quitting trend line (OPM, 2013d), coupled with this study’s steep trend line of inter-organizational movement and the only positive trend line for leaving the federal government, affirms that Generation Y is separating from their organizations and quitting the federal government at a higher rate compared to Generation X and Baby Boomers. The reported effect sizes for the Job Satisfaction index provide some empirical evidence that associates Generation Y’s low Job Satisfaction scores to leaving their organizations and quitting the federal government. If this downward trend in Generation Y job satisfaction continues, the effect sizes will inevitably increase and the link between the Job Satisfaction index and Generation Y leaving will become very apparent. The next section will provide future research recommendations based on the empirical findings and theoretical implications.

## RECOMMENDATIONS FOR FUTURE RESEARCH

The recommendations for future research are underpinned by the empirical findings and theoretical implications. The debate whether generational differences actually do exist in the federal government is multifaceted and requires further investigation. Exploring the following as future research can facilitate this examination.

1) Generation Y ranked five of the six indices (except for Job Satisfaction) the highest consistently throughout this study. Further investigation is recommended to understand the connection between this study's low Generation Y Job Satisfaction index scores, their steep inter-organizational movement trend line, their positive trend line of quitting the federal government, and their high separation/ high quitting trend line (OPM, 2013d). The effort should explore if the Job Satisfaction index is being measured correctly, if those items are valued more than the other five indices, and if a low score with the Job Satisfaction index warrants separation from their agencies.

2) The results of this study may not be indicative of all agencies that participated in the OPM surveys. Each agency should perform an identical analysis using their organizationally-specific data and compare those results to this study. The interpretation of the results can aid organizational leaders to develop or improve current retention initiatives.

3) There was a recurring negative trend throughout this study where all index levels began their decline, organizational separation increased, and quitting the federal government increased around the years of 2010 and 2011. Research into the factors that started this negative effect would be prudent to understand in order to counteract in the future. The OPM (2011a) outlined factors "shutdowns, pay freezes, furloughs, benefit

reductions, budget cuts, and negative public perceptions” (p. 9) would be a logical place to begin the research.

## **CONCLUSION**

This dissertation filled a knowledge gap within the federal government’s strategic human capital management focus by understanding the workplace differences between Generation Y, Generation X, and Baby Boomer federal government employees. Empirical evidence suggests there are differences and that Generation Y is separating from their agencies and quitting the federal government for unknown reasons. Other factors, known or unknown may be present that are influencing the data.

If future federal government research is not continued, specifically on Generation Y, two options may come to fruition. At best, if employees from Generation Y stay within the federal government, it’s safe to assume (compared to the rest of the federal workforce) they are least likely: 1) to have a feeling of personal accomplishment, 2) to like their work, 3) feel their work is important, 4) to be satisfied with the involvement of decisions that affect their work, 5) to be satisfied with their opportunity to get a better job in their organization, 6) to be satisfied with their job, and 7) to be satisfied with their pay. At worst, Generation Y is going to continue to separate from their organizations and quit working for the federal government.

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## APPENDIX A: GENERATIONAL COMPOSITION

**Table A1: Generational Composition**

Age	2006		2008		2010	2011	2012	2013
18	<i>1988</i>	<i>1989</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>
19	<i>1987</i>	<i>1988</i>	<i>1989</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>
20	<i>1986</i>	<i>1987</i>	<i>1988</i>	<i>1989</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>
21	<i>1985</i>	<i>1986</i>	<i>1987</i>	<i>1988</i>	<i>1989</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>
22	<i>1984</i>	<i>1985</i>	<i>1986</i>	<i>1987</i>	<i>1988</i>	<i>1989</i>	<i>1990</i>	<i>1991</i>
23	<i>1983</i>	<i>1984</i>	<i>1985</i>	<i>1986</i>	<i>1987</i>	<i>1988</i>	<i>1989</i>	<i>1990</i>
24	<b>1982</b>	<i>1983</i>	<i>1984</i>	<i>1985</i>	<i>1986</i>	<i>1987</i>	<i>1988</i>	<i>1989</i>
25	<b>1981</b>	<b>1982</b>	<i>1983</i>	<i>1984</i>	<i>1985</i>	<i>1986</i>	<i>1987</i>	<i>1988</i>
26	<b>1980</b>	<b>1981</b>	<b>1982</b>	<i>1983</i>	<i>1984</i>	<i>1985</i>	<i>1986</i>	<i>1987</i>
27	<b>1979</b>	<b>1980</b>	<b>1981</b>	<b>1982</b>	<i>1983</i>	<i>1984</i>	<i>1985</i>	<i>1986</i>
28	<b>1978</b>	<b>1979</b>	<b>1980</b>	<b>1981</b>	<b>1982</b>	<i>1983</i>	<i>1984</i>	<i>1985</i>
29	<b>1977</b>	<b>1978</b>	<b>1979</b>	<b>1980</b>	<b>1981</b>	<b>1982</b>	<i>1983</i>	<i>1984</i>
30	<b>1976</b>	<b>1977</b>	<b>1978</b>	<b>1979</b>	<b>1980</b>	<b>1981</b>	<b>1982</b>	<i>1983</i>
31	<b>1975</b>	<b>1976</b>	<b>1977</b>	<b>1978</b>	<b>1979</b>	<b>1980</b>	<b>1981</b>	<b>1982</b>
32	<b>1974</b>	<b>1975</b>	<b>1976</b>	<b>1977</b>	<b>1978</b>	<b>1979</b>	<b>1980</b>	<b>1981</b>
33	<b>1973</b>	<b>1974</b>	<b>1975</b>	<b>1976</b>	<b>1977</b>	<b>1978</b>	<b>1979</b>	<b>1980</b>
34	<b>1972</b>	<b>1973</b>	<b>1974</b>	<b>1975</b>	<b>1976</b>	<b>1977</b>	<b>1978</b>	<b>1979</b>
35	<b>1971</b>	<b>1972</b>	<b>1973</b>	<b>1974</b>	<b>1975</b>	<b>1976</b>	<b>1977</b>	<b>1978</b>
36	<b>1970</b>	<b>1971</b>	<b>1972</b>	<b>1973</b>	<b>1974</b>	<b>1975</b>	<b>1976</b>	<b>1977</b>
37	<b>1969</b>	<b>1970</b>	<b>1971</b>	<b>1972</b>	<b>1973</b>	<b>1974</b>	<b>1975</b>	<b>1976</b>
38	<b>1968</b>	<b>1969</b>	<b>1970</b>	<b>1971</b>	<b>1972</b>	<b>1973</b>	<b>1974</b>	<b>1975</b>
39	<b>1967</b>	<b>1968</b>	<b>1969</b>	<b>1970</b>	<b>1971</b>	<b>1972</b>	<b>1973</b>	<b>1974</b>
40	<b>1966</b>	<b>1967</b>	<b>1968</b>	<b>1969</b>	<b>1970</b>	<b>1971</b>	<b>1972</b>	<b>1973</b>
41	<b>1965</b>	<b>1966</b>	<b>1967</b>	<b>1968</b>	<b>1969</b>	<b>1970</b>	<b>1971</b>	<b>1972</b>
42	<i>1964</i>	<b>1965</b>	<b>1966</b>	<b>1967</b>	<b>1968</b>	<b>1969</b>	<b>1970</b>	<b>1971</b>
43	<i>1963</i>	<i>1964</i>	<b>1965</b>	<b>1966</b>	<b>1967</b>	<b>1968</b>	<b>1969</b>	<b>1970</b>
44	<i>1962</i>	<i>1963</i>	<i>1964</i>	<b>1965</b>	<b>1966</b>	<b>1967</b>	<b>1968</b>	<b>1969</b>
45	<i>1961</i>	<i>1962</i>	<i>1963</i>	<i>1964</i>	<b>1965</b>	<b>1966</b>	<b>1967</b>	<b>1968</b>
46	<i>1960</i>	<i>1961</i>	<i>1962</i>	<i>1963</i>	<i>1964</i>	<b>1965</b>	<b>1966</b>	<b>1967</b>
47	<i>1959</i>	<i>1960</i>	<i>1961</i>	<i>1962</i>	<i>1963</i>	<i>1964</i>	<b>1965</b>	<b>1966</b>
48	<i>1958</i>	<i>1959</i>	<i>1960</i>	<i>1961</i>	<i>1962</i>	<i>1963</i>	<i>1964</i>	<b>1965</b>
49	<i>1957</i>	<i>1958</i>	<i>1959</i>	<i>1960</i>	<i>1961</i>	<i>1962</i>	<i>1963</i>	<i>1964</i>
50	<i>1956</i>	<i>1957</i>	<i>1958</i>	<i>1959</i>	<i>1960</i>	<i>1961</i>	<i>1962</i>	<i>1963</i>
51	<i>1955</i>	<i>1956</i>	<i>1957</i>	<i>1958</i>	<i>1959</i>	<i>1960</i>	<i>1961</i>	<i>1962</i>
52	<i>1954</i>	<i>1955</i>	<i>1956</i>	<i>1957</i>	<i>1958</i>	<i>1959</i>	<i>1960</i>	<i>1961</i>
53	<i>1953</i>	<i>1954</i>	<i>1955</i>	<i>1956</i>	<i>1957</i>	<i>1958</i>	<i>1959</i>	<i>1960</i>
54	<i>1952</i>	<i>1953</i>	<i>1954</i>	<i>1955</i>	<i>1956</i>	<i>1957</i>	<i>1958</i>	<i>1959</i>
55	<i>1951</i>	<i>1952</i>	<i>1953</i>	<i>1954</i>	<i>1955</i>	<i>1956</i>	<i>1957</i>	<i>1958</i>
56	<i>1950</i>	<i>1951</i>	<i>1952</i>	<i>1953</i>	<i>1954</i>	<i>1955</i>	<i>1956</i>	<i>1957</i>
57	<i>1949</i>	<i>1950</i>	<i>1951</i>	<i>1952</i>	<i>1953</i>	<i>1954</i>	<i>1955</i>	<i>1956</i>
58	<i>1948</i>	<i>1949</i>	<i>1950</i>	<i>1951</i>	<i>1952</i>	<i>1953</i>	<i>1954</i>	<i>1955</i>
59	<i>1947</i>	<i>1948</i>	<i>1949</i>	<i>1950</i>	<i>1951</i>	<i>1952</i>	<i>1953</i>	<i>1954</i>
60	<i>1946</i>	<i>1947</i>	<i>1948</i>	<i>1949</i>	<i>1950</i>	<i>1951</i>	<i>1952</i>	<i>1953</i>
Generation Y ( <i>italicized</i> ), Generation X ( <b>bold</b> ), and Baby Boomers (plain)								

## APPENDIX B: MERIT SYSTEM PROTECTION BOARD PRINCIPLES

Source: 5 U.S.C § 2301

- (1) Recruitment should be from qualified individuals from appropriate sources in an endeavor to achieve a work force from all segments of society, and selection and advancement should be determined solely on the basis of relative ability, knowledge, and skills, after fair and open competition which assures that all receive equal opportunity.
- (2) All employees and applicants for employment should receive fair and equitable treatment in all aspects of personnel management without regard to political affiliation, race, color, religion, national origin, sex, marital status, age, or handicapping condition, and with proper regard for their privacy and constitutional rights.
- (3) Equal pay should be provided for work of equal value, with appropriate consideration of both national and local rates paid by employers in the private sector, and appropriate incentives and recognition should be provided for excellence in performance.
- (4) All employees should maintain high standards of integrity, conduct, and concern for the public interest.
- (5) The Federal work force should be used efficiently and effectively.
- (6) Employees should be retained on the basis of the adequacy of their performance, inadequate performance should be corrected, and employees should be separated who cannot or will not improve their performance to meet required standards.
- (7) Employees should be provided effective education and training in cases in which such education and training would result in better organizational and individual performance.
- (8) Employees should be—
  - a. protected against arbitrary action, personal favoritism, or coercion for partisan political purposes, and
  - b. prohibited from using their official authority or influence for the purpose of interfering with or affecting the result of an election or a nomination for election.
- (9) Employees should be protected against reprisal for the lawful disclosure of information which the employees reasonably believe evidences—
  - a. a violation of any law, rule, or regulation, or
  - b. mismanagement, a gross waste of funds, an abuse of authority, or a substantial and specific danger to public health or safety.
  - c. In administering the provisions of this chapter—
    - i. with respect to any agency (as defined in section 2302(a)(2)(C) of this title), the President shall, pursuant to the authority otherwise available under this title, take any action, including the issuance of rules, regulations, or directives; and
    - ii. with respect to any entity in the executive branch which is not such an agency or part of such an agency, the head of such entity shall, pursuant to authority otherwise available, take any action, including the issuance of rules, regulations, or directives; which is consistent with the provisions of this title and which the President or the head, as the case may be, determines is necessary to ensure that personnel management is based on and embodies the merit system principles.

## APPENDIX C: 5 USC § 250.302 SURVEY REQUIREMENTS

**Table C1: 45 Question Survey Requirements**

	Survey Questions
1	The people I work with cooperate to get the job done
2	I am given a real opportunity to improve my skills in my organization
3	My work gives me a feeling of personal accomplishment
4	I like the kind of work I do
5	I have trust and confidence in my supervisor
6	Overall, how good a job do you feel is being done by your immediate supervisor/team leader?
7	The workforce has the job-relevant knowledge and skills necessary to accomplish organizational goals
8	My work unit is able to recruit people with the right skills
9	I know how my work relates to the agency's goals and priorities
10	The work I do is important
11	Physical conditions allow employees to perform their jobs well
12	Supervisors/team leaders in my work unit support employee development
13	My talents are used well in the workplace
14	My training needs are assessed
15	Promotions in my work unit are based on merit
16	In my work unit, steps are taken to deal with a poor performer who cannot or will not improve
17	Creativity and innovation are rewarded
18	In my most recent performance appraisal, I understood what I had to do to be rated at different performance levels (e.g., Fully Successful, Outstanding)
19	In my work unit, differences in performance are recognized in a meaningful way
20	Pay raises depend on how well employees perform their jobs
21	My performance appraisal is a fair reflection of my performance
22	Discussions with my supervisor/team leader about my performance are worthwhile
23	Managers/supervisors/team leaders work well with employees of different backgrounds
24	My supervisor supports my need to balance work and family issues
25	I have a high level of respect for my organization's senior leaders
26	In my organization, leaders generate high levels of motivation and commitment in the workforce
27	Managers review and evaluate the organization's progress toward meeting its goals and objectives
28	Employees are protected from health and safety hazards on the job
29	Employees have a feeling of personal empowerment with respect to work processes
30	My workload is reasonable
31	Managers communicate the goals and priorities of the organization
32	My organization has prepared employees for potential security threats
33	How satisfied are you with the information you receive from management on what's going on in your organization?
34	How satisfied are you with your involvement in decisions that affect your work?
35	How satisfied are you with your opportunity to get a better job in your organization?
36	How satisfied are you with the recognition you receive for doing a good job?
37	How satisfied are you with the policies and practices of your senior leaders?
38	How satisfied are you with the training you receive for your present job?
39	Considering everything, how satisfied are you with your job?
40	Considering everything, how satisfied are you with your pay?
41	What is your supervisory status?

42	Are you
43	Are you Hispanic or Latino?
44	Please select the racial category or categories with which you most closely identify (Please select one or more)
45	What is your agency subcomponent? (If Applicable)

Agency means an executive agency.

Executives are members of the Senior Executive Service or equivalent.

Leaders are an agency's management team. This includes anyone with supervisory or managerial duties.

Managers are those individuals in management positions who typically supervise one or more supervisors.

Organization means an agency, office, or division.

Supervisors are first-line supervisors who do not supervise other supervisors; typically those who are responsible for employees' performance appraisals and approval of their leave.

Team leaders are those who provide employees with day-to-day guidance in work projects, but do not have supervisory responsibilities or conduct performance appraisals.

Work unit means an immediate work unit headed by an immediate supervisor.

## APPENDIX D: EMPLOYEE ENGAGEMENT INDEX DEVELOPMENT

Source: (OPM, 2011b, pp. 31-33)

“Step 1: While the majority of the survey items arguably measure important conditions of the job and/or job satisfaction, a subset of items measures conditions of employee engagement. Though the two concepts, satisfaction and engagement, overlap, it can be argued that they are distinct, where high satisfaction leads to higher levels of comfort with the job and organization rather than increased enthusiasm and commitment and other feelings/behaviors of engagement. To differentiate employee engagement from job satisfaction, a decision was made to exclude all items using a satisfaction scale. Also, item Q. 40 (“I recommend my organization as a good place to work”) which more directly measures employee engagement was not included since items leading to engagement were being selected for the index rather than items more directly identifying engaged employees.

Following the preceding rationale, the OPM survey analysis team (four psychologists and one management analyst) individually selected items, discussed their item selection with the entire group, and initially chose 32 items for possible inclusion. Next, they individually checked these items against the major drivers of employee engagement commonly found in the literature, and a subsequent team discussion reduced the list to 26 FEVS items.

Step 2: Using a sample from the 2010 data extract, Westat performed a preliminary exploratory analyses (principal component analysis – PCA) on the 26 items, which did not support creating a single scale/index. Rather, the PCA results suggested that the items could be better fit by a three-factor model. Westat explored this three-factor model to determine if items should be dropped and if an underlying factor, “Conditions Conducive to Employee Engagement,” would be supported when analyzed with a structural equation modeling approach. Using a separate sample from the 2010 data extract, Westat conducted three separate confirmatory factor analyses (CFA) for each of the three proposed factors. The purpose of these analyses was to examine if all items were loading strongly to their proposed factor in order to determine if any items should be dropped. All three factors were then combined into one model, proposing a fourth latent factor, using a structural equation modeling approach in SAS 9.2. The results of the 2010 confirmatory factor analysis provide support for a 16-item model representing three factors (Leadership, Supervision, and Intrinsic Work Experience), with a single underlying latent factor (Conditions Conducive to Engagement). Evidence of a single, underlying “Conditions Conducive to Engagement” factor was provided by the strong relationships (standardized regression coefficients  $> .60$ ) between each of the three factors and the latent factor, as well as each of the survey items with their associated factor. These 2010 results provided support for the three factors and indicate that the three factors may be summarized into one overall score.

In summary, for the 2010 index, 10 items were dropped from the initial 26-item model for theoretical and/or statistical reasons. For example, questions 30, 31, and 32 initially loaded on the “Leadership” factor, but since they do not tap into employees’ perceptions of senior leadership directly and would make this factor/index difficult to define and

interpret, they were dropped for theoretical reasons. The other 10 items were dropped because they did not meet statistical criteria in either the exploratory or confirmatory stages of analysis (e.g., PCA factor loadings  $< .40$ , or CFA standardized regression coefficients  $< .60$ ).

Step 3: The next step in the 2010 development process consisted of OPM psychologists analyzing the 16 items and checking to ensure that agencies would likely see that they could take action on the results. If agencies are expected to take action on the results of the survey, then the items must be seen as being actionable and under the control of the agency. Table 8 lists the final set of eight items used to create the Conditions for Employee Engagement Index in 2010. The index was computed as the average percent favorable response to the eight items.

I feel encouraged to come up with new and better ways of doing things.

My work gives me a feeling of personal accomplishment.

I know what is expected of me on the job.

My talents are used well in the workplace.

Supervisors/team leaders in my work unit support employee development.

My supervisor/team leader listens to what I have to say.

In my organization, leaders generate high levels of motivation and commitment in the workforce.

Managers communicate the goals and priorities of the organization.

Step 4: In 2011, the Westat and OPM team re-examined the Conditions for Employee Engagement index, returning to the 16-item structure proposed in 2010. Using a data extract from May 2011, Westat performed a CFA of the 16 items initially retained for the final factor model in step 2. One item, item 5, "I like the kind of work I do.", was shown to significantly reduce the fit of the model. In addition, this item had the lowest variability, showing that it would not perform well at differentiating agencies. Further, item 5 also had the lowest standardized factor loading of all the items (though it still fell above the .60 cutoff).

In addition, following Macey & Schneider's (2008) description of employee engagement, item 5 represents more of an employee's absorption, passion, and affect with respect to their work rather than the organizational conditions expected to lead to employee engagement, which is what the FEVS engagement index is intended to measure. Since item 5 may more directly measure an employee's "state" engagement rather than the situations/work conditions conducive to engagement, Westat recommended that this item be dropped for the FEVS Conditions for Employee Engagement index. Due to these issues, item 5 was removed and the CFA was performed again. (Table 20 in Methods section) displays the items that comprise the three subfactor, 15-item Conditions for Employee Engagement model. The 2011 reports utilized the three subfactor, 15-item model along with results from the single, overarching Conditions for Employee Engagement Index. This single index score will be computed as the average percent favorable response to the three subfactors."

# APPENDIX E: GOVERNMENT-WIDE RESPONDENT CHARACTERISTIC

## PERCENTAGES

**Table E1: Respondent Characteristic Percentages**

	2013	2012	2011	2010	2008	2006
<b>Work Location</b>						
Headquarters	39	36.2	42.5	41.8	39.7	40
Field	61	63.8	57.5	58.2	60.3	60
<b>Supervisory Status</b>						
Non-Supervisor	66	65.5	60	57.7	55.7	54
Team Leader	14	14.3	12.7	13.8	13.8	15
Supervisor	13	13	16.8	17.5	18	18
Manager	6	6.2	8.5	9	10.1	10
Executive	2	1	2	1.9	2.3	2
<b>Gender</b>						
Male	52	55.5	52.4	52.6	52	54
Female	49	44.5	47.6	47.4	48	46
<b>Ethnicity</b>						
Hispanic/Latino	8	9.2	7.3	6.8	6.8	6
Not Hispanic/Latino	92	90.8	92.7	93.2	93.2	94
<b>Race or National Origin</b>						
American Indian or Alaska Native	2	2	2.5	3.3	4	3
Asian	5	4.7	5	4.6	4.1	4
Black or African American	16	15.5	17.3	16.6	16.1	16
Native Hawaiian or Other Pacific Islander	1	0.8	0.6	0.6	0.7	1
White	73	73.6	71.5	72.2	72	74
Two or more races	4	3.5	3	2.7	3	3
<b>Age Group</b>						
25 and under	1	1.5	1.5	1.3	1.1	1
26-29	4	4.5	4	3.6	3.1	3

30-39	17	17.2	15.7	14.4	14.1	14
40-49	28	28.9	29.2	29.9	30.7	32
50-59	36	35.5	36.5	37.9	39.3	40
60 or older	14	12.5	13.1	13	11.8	9
<b>Pay Category</b>						
Federal Wage System	4	6.3	3.4	3.7	4.1	4
GS 1-6	6	6	4.9	4.6	4.9	5
GS 7-12	42	47.6	38.9	39.9	41.3	42
GS 13-15	39	32.1	44.7	43	39.8	42
Senior Executive Service	1	0.7	1.7	1.5	1.9	2
Senior Level (SL) or Scientific or Professional (ST)	< 1	0.2	0.5	0.4	0.4	< 1
Other	8	7.1	5.9	6.8	7.5	4
<b>Federal Tenure</b>						
Less than 1 year	1	1.6	2.4	1.3	1.1	1
1 to 3 years	11	14.9	12.7	10.7	8.6	8
4 to 5 years	11	10	7.9	7.2	7	7
6 to 10 years	18	19.2	17	16.3	15.6	12
11 to 14 years	13	11	10.1	9	8.4	29
15 to 20 years	10	9.3	11.1	13.6	17.1	
More than 20 years	35	34	38.8	42	42.2	42
<b>Agency Tenure</b>						
Less than 1 year	3	2.7	3.6	2.2	2.3	2
1 to 3 years	16	19	17.2	15.5	13.5	13
4 to 5 years	14	12	10	9.4	9.6	10
6 to 10 years	20	20.9	19.3	19.4	19.5	16
11 to 20 years	22	20.1	21.8	23.5	26.1	30
More than 20 years	26	25.3	28.2	30	29	28
<b>Planning to Leave</b>						
No	68	69.1	71.1	71.5	68.6	69

Yes, to retire	6	6.1	6.4	6.2	6.5	7
Yes, to take another job within the Federal Government	16	17.2	15.8	16.9	17.9	16
Yes, to take another job outside the Federal Government	4	3.2	3	2.1	3.1	4
Yes, Other	5	4.4	3.7	3.3	3.9	4
<b>Planning to Retire</b>						
Within one year	4	3.7	3.7	3.6	4	4
Between one and three years	10	9.7	10.5	11.2	11.7	12
Between three and five years	11	10.2	10.8	12	12.6	13
Five or more years	76	76.4	75	73.1	71.7	71
<b>Sexual Orientation</b>						
Heterosexual or Straight	85	87	Not Asked	Not Asked	Not Asked	Not Asked
Gay, Lesbian, Bisexual, or Transgender	3	2.2	Not Asked	Not Asked	Not Asked	Not Asked
I prefer not to say	12	10.8	Not Asked	Not Asked	Not Asked	Not Asked
<b>Veteran Status</b>						
Veteran	28	32.4	Not Asked	Not Asked	Not Asked	Not Asked
Not a veteran	72	67.6	Not Asked	Not Asked	Not Asked	Not Asked
<b>Disability Status</b>						
Disabled	13	13.1	Not Asked	Not Asked	Not Asked	Not Asked
Not disabled	87	86.9	Not Asked	Not Asked	Not Asked	Not Asked

Sources: (OPM, 2006a; OPM, 2008; OPM, 2010; OPM, 2011a; OPM, 2012a; OPM, 2013a)

## **APPENDIX F: SAMPLE SURVEY PARTICIPATION EMAIL**

Sources: (Office of Personnel Management, 2011b, p. 79 and U.S. OPM, 2012b, p. 87)

Subject: Federal Employee Viewpoint Survey — DO NOT FORWARD

Dear Federal Employee,

We want your advice on how to improve your workplace. The Federal Employee Viewpoint Survey offers you the opportunity to express your thoughts, opinions, and ideas regarding your job, your agency, and the Federal workforce as a whole.

Nobody knows better than you what your organization is doing well, and where it can do better.

Answering the questions will take about 25 minutes, and you may use official time. While participation is voluntary, we hope you'll respond. The Office of Personnel Management will provide your agency valuable data from the survey responses which can be used to help make your agency a better place to work. Your individual responses are absolutely confidential.

Help us improve government to build a better, more secure future for all Americans.

Sincerely,

John Berry  
Director

Click on the link below to access your survey:

[Insert survey link here and text "Click Here"]

If the link does not take you directly to the survey, copy and paste the following into a browser window.

[insert entire survey link here]

**PLEASE DO NOT FORWARD THIS EMAIL SINCE IT CONTAINS YOUR  
PERSONALIZED LINK TO THE SURVEY.**

Please reply to this message if you have any questions or difficulties accessing the survey.

# APPENDIX G: PRIMARY ANALYSIS (2010-2013) SUPPORTING TABLES

**Table G1: Primary Analysis (2010-2013) – Question 1: Levene's Test of Homogeneity of Variances**

Index	Levene Statistic	df1	df2
Leadership and Knowledge Management	295.120***	3	1472250
Results-Oriented Performance Culture	200.914***	3	1472256
Talent Management	343.216***	3	1472247
Job Satisfaction	548.002***	3	1472248
Global Satisfaction	970.347***	3	1472074
Employee Engagement	230.118***	3	1472254
***p < .001			

**Table G2: Primary Analysis (2010-2013) – Question 1: Welch's ANOVA**

Index	Statistic	df1	df2
Leadership and Knowledge Management	521.069***	3	641892.423
Results-Oriented Performance Culture	1630.569***	3	641236.751
Talent Management	1361.592***	3	641035.192
Job Satisfaction	3189.777***	3	642358.265
Global Satisfaction	4339.227***	3	643018.993
Employee Engagement	502.451***	3	640759.448
***p < .001			

**Table G3: Primary Analysis (2010-2013) – Question 1: Descriptive Statistics**

Index and Year		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
Leadership and Knowledge Management	2010	248026	3.5891	.79278	.00159	3.5860	3.5922
	2011	245208	3.6137	.78414	.00158	3.6106	3.6168
	2012	634181	3.5602	.80860	.00102	3.5582	3.5622
	2013	344839	3.5367	.82185	.00140	3.5340	3.5394
	Total	1472254	3.5685	.80549	.00066	3.5672	3.5698
Results-Oriented Performance Culture	2010	248025	3.4628	.78191	.00157	3.4598	3.4659
	2011	245211	3.4642	.77675	.00157	3.4611	3.4673
	2012	634185	3.3762	.79512	.00100	3.3743	3.3782
	2013	344839	3.3557	.80167	.00137	3.3530	3.3583
	Total	1472260	3.4007	.79272	.00065	3.3994	3.4019
Talent Management	2010	248023	3.5372	.83593	.00168	3.5339	3.5405
	2011	245211	3.5326	.82971	.00168	3.5293	3.5359
	2012	634178	3.4750	.84960	.00107	3.4729	3.4771
	2013	344839	3.4151	.86784	.00148	3.4122	3.4180
	Total	1472251	3.4810	.84954	.00070	3.4797	3.4824
Job Satisfaction	2010	248024	3.8186	.73497	.00148	3.8157	3.8215
	2011	245208	3.7880	.73204	.00148	3.7851	3.7909
	2012	634184	3.7096	.75573	.00095	3.7077	3.7114
	2013	344836	3.6464	.77926	.00133	3.6438	3.6490
	Total	1472252	3.7262	.75643	.00062	3.7250	3.7274
Global Satisfaction	2010	247961	3.7761	.86968	.00175	3.7727	3.7796
	2011	245175	3.7310	.86760	.00175	3.7275	3.7344
	2012	634131	3.6255	.89977	.00113	3.6233	3.6277
	2013	344811	3.5359	.92953	.00158	3.5328	3.5390
	Total	1472078	3.6474	.90054	.00074	3.6460	3.6489
Employee Engagement	2010	248024	3.7455	.82519	.00166	3.7423	3.7488
	2011	245210	3.7523	.82005	.00166	3.7490	3.7555
	2012	634186	3.7005	.83735	.00105	3.6985	3.7026
	2013	344838	3.6833	.85212	.00145	3.6804	3.6861
	Total	1472258	3.7127	.83638	.00069	3.7113	3.7140

**Table G4: Primary Analysis (2010-2013) – Question 2: 2010 Levene's Test of Homogeneity of Variances**

Index	Levene Statistic	df1	df2
Leadership and Knowledge Management	131.931***	4	248021
Results-Oriented Performance Culture	70.299***	4	248020
Talent Management	65.581***	4	248018
Job Satisfaction	4.445***	4	248019
Global Satisfaction	43.938***	4	247956
Employee Engagement	147.634***	4	248019
***p < .001			

**Table G5: Primary Analysis (2010-2013) – Question 2: 2010 Welch's ANOVA**

Index	Statistic	df1	df2
Leadership and Knowledge Management	196.501***	4	18497.021
Results-Oriented Performance Culture	66.110***	4	18435.377
Talent Management	116.964***	4	18432.960
Job Satisfaction	31.665***	4	18317.479
Global Satisfaction	17.603***	4	18389.344
Employee Engagement	93.707***	4	18511.713
***p < .001			

**Table G6: Primary Analysis (2010-2013) – Question 2: 2010 Descriptive Statistics**

Index and Generation		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
Leadership and Knowledge Management	Gen Y	3217	3.8586	.67141	.01184	3.8354	3.8818
	Y/X	8839	3.7059	.72279	.00769	3.6908	3.7210
	Gen X	35699	3.5935	.77005	.00408	3.5855	3.6015
	X/BB	74101	3.5736	.79812	.00293	3.5678	3.5793
	BB	126170	3.5819	.80158	.00226	3.5775	3.5864
	Total	248026	3.5891	.79278	.00159	3.5860	3.5922
Results-Oriented Performance Culture	Gen Y	3217	3.6323	.69757	.01230	3.6082	3.6565
	Y/X	8839	3.5177	.73109	.00778	3.5025	3.5329
	Gen X	35698	3.4471	.76220	.00403	3.4392	3.4550
	X/BB	74101	3.4540	.78436	.00288	3.4484	3.4597
	BB	126170	3.4643	.79074	.00223	3.4599	3.4687
	Total	248025	3.4628	.78191	.00157	3.4598	3.4659
Talent Management	Gen Y	3217	3.7528	.73612	.01298	3.7273	3.7782
	Y/X	8839	3.6370	.78919	.00839	3.6205	3.6534
	Gen X	35699	3.5543	.82271	.00435	3.5458	3.5629
	X/BB	74100	3.5296	.84251	.00310	3.5235	3.5357
	BB	126168	3.5243	.84004	.00236	3.5196	3.5289
	Total	248023	3.5372	.83593	.00168	3.5339	3.5405
Job Satisfaction	Gen Y	3217	3.7974	.71755	.01265	3.7726	3.8223
	Y/X	8838	3.7700	.73224	.00779	3.7548	3.7853
	Gen X	35699	3.7902	.73038	.00387	3.7826	3.7978
	X/BB	74101	3.8192	.73415	.00270	3.8139	3.8245
	BB	126169	3.8301	.73701	.00207	3.8261	3.8342
	Total	248024	3.8186	.73497	.00148	3.8157	3.8215
Global Satisfaction	Gen Y	3217	3.8813	.79547	.01402	3.8538	3.9088
	Y/X	8830	3.8068	.83697	.00891	3.7894	3.8243
	Gen X	35692	3.7733	.85358	.00452	3.7645	3.7822
	X/BB	74078	3.7721	.86919	.00319	3.7659	3.7784
	BB	126144	3.7745	.87831	.00247	3.7696	3.7793
	Total	247961	3.7761	.86968	.00175	3.7727	3.7796
Employee Engagement	Gen Y	3217	3.9316	.69774	.01230	3.9074	3.9557
	Y/X	8839	3.8320	.74409	.00791	3.8164	3.8475

	Gen X	35699	3.7561	.79550	.00421	3.7478	3.7643
	X/BB	74101	3.7357	.82989	.00305	3.7297	3.7417
	BB	126168	3.7375	.83804	.00236	3.7329	3.7421
	Total	248024	3.7455	.82519	.00166	3.7423	3.7488

**Table G7: Primary Analysis (2010-2013) – Question 2: 2011 Levene's Test of Homogeneity of Variances**

Index	Levene Statistic	df1	df2
Leadership and Knowledge Management	126.919***	4	245203
Results-Oriented Performance Culture	57.211***	4	245206
Talent Management	76.982***	4	245206
Job Satisfaction	2.905*	4	245203
Global Satisfaction	41.371***	4	245170
Employee Engagement	133.204***	4	245205
*p < 0.5, ***p < .001			

**Table G8: Primary Analysis (2010-2013) – Question 2: 2011 Welch's ANOVA**

Index	Statistic	df1	df2
Leadership and Knowledge Management	226.019***	4	21363.223
Results-Oriented Performance Culture	70.414***	4	21286.466
Talent Management	133.176***	4	21315.563
Job Satisfaction	45.054***	4	21124.032
Global Satisfaction	26.192***	4	21211.605
Employee Engagement	110.144***	4	21381.626
***p < .001			

**Table G9: Primary Analysis (2010-2013) – Question 2: 2011 Descriptive Statistics**

Index and Generation		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
Leadership and Knowledge Management	Gen Y	3763	3.8886	.67595	.01102	3.8670	3.9102
	Y/X	9862	3.7246	.71606	.00721	3.7105	3.7387
	Gen X	38379	3.6196	.76223	.00389	3.6120	3.6272
	X/BB	71708	3.6008	.79300	.00296	3.5950	3.6067
	BB	121496	3.6019	.79179	.00227	3.5974	3.6064
	Total	245208	3.6137	.78414	.00158	3.6106	3.6168
Results-Oriented Performance Culture	Gen Y	3763	3.6331	.70133	.01143	3.6106	3.6555
	Y/X	9862	3.5133	.72869	.00734	3.4989	3.5277
	Gen X	38379	3.4482	.76092	.00388	3.4406	3.4559
	X/BB	71710	3.4612	.78128	.00292	3.4555	3.4669
	BB	121497	3.4618	.78424	.00225	3.4574	3.4662
	Total	245211	3.4642	.77675	.00157	3.4611	3.4673
Talent Management	Gen Y	3763	3.7605	.72847	.01188	3.7372	3.7838
	Y/X	9862	3.6179	.77382	.00779	3.6026	3.6331
	Gen X	38379	3.5430	.81874	.00418	3.5348	3.5511
	X/BB	71710	3.5281	.83797	.00313	3.5220	3.5343
	BB	121497	3.5180	.83410	.00239	3.5133	3.5226
	Total	245211	3.5326	.82971	.00168	3.5293	3.5359
Job Satisfaction	Gen Y	3763	3.7770	.72896	.01188	3.7537	3.8003
	Y/X	9862	3.7264	.73352	.00739	3.7119	3.7409
	Gen X	38379	3.7568	.72804	.00372	3.7495	3.7641
	X/BB	71709	3.7920	.73672	.00275	3.7866	3.7974
	BB	121495	3.8008	.72997	.00209	3.7966	3.8049
	Total	245208	3.7880	.73204	.00148	3.7851	3.7909
Global Satisfaction	Gen Y	3759	3.8567	.81089	.01323	3.8307	3.8826
	Y/X	9861	3.7575	.83405	.00840	3.7410	3.7739
	Gen X	38374	3.7312	.85207	.00435	3.7227	3.7397
	X/BB	71705	3.7295	.87228	.00326	3.7231	3.7359
	BB	121476	3.7257	.87373	.00251	3.7208	3.7306
	Total	245175	3.7310	.86760	.00175	3.7275	3.7344
Employee	Gen Y	3763	3.9522	.70180	.01144	3.9298	3.9746
	Y/X	9862	3.8303	.74446	.00750	3.8156	3.8450

Engagement	Gen X	38378	3.7597	.79468	.00406	3.7517	3.7676
	X/BB	71709	3.7448	.82904	.00310	3.7387	3.7508
	BB	121498	3.7418	.83066	.00238	3.7371	3.7465
	Total	245210	3.7523	.82005	.00166	3.7490	3.7555

**Table G10: Primary Analysis (2010-2013) – Question 2: 2012 Levene's Test of Homogeneity of Variances**

Index	Levene Statistic	df1	df2
Leadership and Knowledge Management	78.186***	3	634177
Results-Oriented Performance Culture	20.018***	3	634181
Talent Management	60.109***	3	634174
Job Satisfaction	94.308***	3	634180
Global Satisfaction	7.300***	3	634127
Employee Engagement	101.624***	3	634182
***p < .001			

**Table G11: Primary Analysis (2010-2013) – Question 2: 2012 Welch's ANOVA**

Index	Statistic	df1	df2
Leadership and Knowledge Management	216.499***	3	151020.013
Results-Oriented Performance Culture	207.682***	3	150669.603
Talent Management	108.279***	3	150848.535
Job Satisfaction	448.661***	3	149099.481
Global Satisfaction	49.121***	3	150028.578
Employee Engagement	107.868***	3	151480.279
***p < .001			

**Table G12: Primary Analysis (2010-2013) – Question 2: 2012 Descriptive Statistics**

Index and Generation		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
Leadership and Knowledge Management	Gen Y	37894	3.6468	.78287	.00402	3.6389	3.6546
	Gen X	109123	3.5304	.80641	.00244	3.5256	3.5351
	X/BB	183137	3.5511	.81792	.00191	3.5473	3.5548
	BB	304027	3.5657	.80606	.00146	3.5628	3.5685
	Total	634181	3.5602	.80860	.00102	3.5582	3.5622
Results-Oriented Performance Culture	Gen Y	37894	3.3900	.78259	.00402	3.3821	3.3979
	Gen X	109123	3.3235	.79231	.00240	3.3188	3.3282
	X/BB	183138	3.3780	.80026	.00187	3.3743	3.3817
	BB	304030	3.3924	.79377	.00144	3.3896	3.3952
	Total	634185	3.3762	.79512	.00100	3.3743	3.3782
Talent Management	Gen Y	37894	3.5397	.82483	.00424	3.5314	3.5481
	Gen X	109124	3.4504	.85367	.00258	3.4453	3.4555
	X/BB	183136	3.4743	.85762	.00200	3.4704	3.4783
	BB	304024	3.4762	.84589	.00153	3.4732	3.4792
	Total	634178	3.4750	.84960	.00107	3.4729	3.4771
Job Satisfaction	Gen Y	37894	3.6305	.78028	.00401	3.6227	3.6384
	Gen X	109124	3.6531	.76972	.00233	3.6485	3.6576
	X/BB	183138	3.7177	.75752	.00177	3.7142	3.7212
	BB	304028	3.7348	.74466	.00135	3.7321	3.7374
	Total	634184	3.7096	.75573	.00095	3.7077	3.7114
Global Satisfaction	Gen Y	37890	3.6257	.90320	.00464	3.6166	3.6348
	Gen X	109117	3.5957	.90600	.00274	3.5903	3.6011
	X/BB	183120	3.6294	.90240	.00211	3.6252	3.6335
	BB	304004	3.6338	.89529	.00162	3.6306	3.6370
	Total	634131	3.6255	.89977	.00113	3.6233	3.6277
Employee Engagement	Gen Y	37894	3.7459	.79782	.00410	3.7379	3.7539
	Gen X	109125	3.6683	.83369	.00252	3.6634	3.6733
	X/BB	183138	3.6959	.84789	.00198	3.6920	3.6997
	BB	304029	3.7092	.83665	.00152	3.7063	3.7122
	Total	634186	3.7005	.83735	.00105	3.6985	3.7026

**Table G13: Primary Analysis (2010-2013) – Question 2: 2013 Levene's Test of Homogeneity of Variances**

Index	Levene Statistic	df1	df2
Leadership and Knowledge Management	70.653***	3	344835
Results-Oriented Performance Culture	23.322***	3	344835
Talent Management	56.445***	3	344835
Job Satisfaction	59.427***	3	344832
Global Satisfaction	16.771***	3	344807
Employee Engagement	83.084***	3	344834
***p < .001			

**Table G14: Primary Analysis (2010-2013) – Question 2: 2013 Welch's ANOVA**

Index	Statistic	df1	df2
Leadership and Knowledge Management	137.283***	3	68243.862
Results-Oriented Performance Culture	108.925***	3	68018.920
Talent Management	63.460***	3	68045.414
Job Satisfaction	299.754***	3	67431.956
Global Satisfaction	56.840***	3	67887.640
Employee Engagement	74.907***	3	68394.023
***p < .001			

**Table G15: Primary Analysis (2010-2013) – Question 2: 2013 Descriptive Statistics**

Index and Generation		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
Leadership and Knowledge Management	Gen Y	16441	3.6229	.78472	.00612	3.6109	3.6349
	Y/X	58747	3.5054	.81981	.00338	3.4988	3.5121
	X/BB	96646	3.5142	.83678	.00269	3.5089	3.5195
	BB	173005	3.5517	.81664	.00196	3.5478	3.5555
	Total	344839	3.5367	.82185	.00140	3.5340	3.5394
Results-Oriented Performance Culture	Gen Y	16441	3.3768	.78470	.00612	3.3648	3.3888
	Y/X	58747	3.3072	.80027	.00330	3.3007	3.3137
	X/BB	96647	3.3486	.81113	.00261	3.3435	3.3537
	BB	173004	3.3741	.79766	.00192	3.3703	3.3778
	Total	344839	3.3557	.80167	.00137	3.3530	3.3583
Talent Management	Gen Y	16441	3.4800	.84163	.00656	3.4671	3.4929
	Y/X	58747	3.3885	.87269	.00360	3.3814	3.3955
	X/BB	96646	3.4033	.88129	.00283	3.3977	3.4088
	BB	173005	3.4245	.86059	.00207	3.4205	3.4286
	Total	344839	3.4151	.86784	.00148	3.4122	3.4180
Job Satisfaction	Gen Y	16441	3.5628	.79695	.00622	3.5507	3.5750
	Y/X	58747	3.5805	.79451	.00328	3.5741	3.5870
	X/BB	96645	3.6423	.78714	.00253	3.6373	3.6472
	BB	173003	3.6790	.76574	.00184	3.6754	3.6826
	Total	344836	3.6464	.77926	.00133	3.6438	3.6490
Global Satisfaction	Gen Y	16441	3.5440	.91736	.00715	3.5299	3.5580
	Y/X	58744	3.4987	.93563	.00386	3.4912	3.5063
	X/BB	96633	3.5252	.93936	.00302	3.5193	3.5311
	BB	172993	3.5537	.92261	.00222	3.5493	3.5580
	Total	344811	3.5359	.92953	.00158	3.5328	3.5390
Employee Engagement	Gen Y	16441	3.7374	.80284	.00626	3.7251	3.7497
	Y/X	58747	3.6550	.84958	.00351	3.6482	3.6619
	X/BB	96647	3.6661	.86775	.00279	3.6606	3.6716
	BB	173003	3.6973	.84818	.00204	3.6933	3.7013
	Total	344838	3.6833	.85212	.00145	3.6804	3.6861

**Table G16: Primary Analysis (2010-2013) – Question 3: Levene's Test of Homogeneity of Variances**

Index	Levene Statistic	df1	df2
Leadership and Knowledge Management	168.952***	4	1472249
Results-Oriented Performance Culture	43.324***	4	1472255
Talent Management	98.035***	4	1472246
Job Satisfaction	115.533***	4	1472247
Global Satisfaction	54.486***	4	1472073
Employee Engagement	212.408***	4	1472253
***p < .001			

**Table G17: Primary Analysis (2010-2013) – Question 3: Welch's ANOVA**

Index	Statistic	df1	df2
Leadership and Knowledge Management	283.437***	4	248685.924
Results-Oriented Performance Culture	155.905***	4	248287.128
Talent Management	143.541***	4	248182.055
Job Satisfaction	805.267***	4	246371.355
Global Satisfaction	172.098***	4	247419.288
Employee Engagement	95.344***	4	249182.388
***p < .001			

**Table G18: Primary Analysis (2010-2013) – Question 3: 2010-2013 Descriptive Statistics**

Index and Generation		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
Leadership and Knowledge Management	Gen Y	61315	3.6663	.77542	.00313	3.6602	3.6725
	Y/X	77448	3.5562	.80177	.00288	3.5506	3.5619
	Gen X	183201	3.5614	.79126	.00185	3.5577	3.5650
	X/BB	425592	3.5550	.81519	.00125	3.5526	3.5575
	BB	724698	3.5712	.80562	.00095	3.5694	3.5731
	Total	1472254	3.5685	.80549	.00066	3.5672	3.5698
Results-Oriented Performance Culture	Gen Y	61315	3.4141	.77812	.00314	3.4079	3.4202
	Y/X	77448	3.3575	.78888	.00283	3.3519	3.3630
	Gen X	183201	3.3737	.78239	.00183	3.3701	3.3773
	X/BB	425592	3.3986	.79806	.00122	3.3962	3.4010
	BB	724698	3.4122	.79347	.00093	3.4104	3.4140
	Total	1472254	3.4007	.79272	.00065	3.3994	3.4019
Talent Management	Gen Y	61315	3.5484	.82318	.00332	3.5419	3.5550
	Y/X	77448	3.4460	.85758	.00308	3.4400	3.4521
	Gen X	183201	3.4900	.84186	.00197	3.4862	3.4939
	X/BB	425592	3.4769	.85844	.00132	3.4743	3.4795
	BB	724698	3.4792	.84723	.00100	3.4773	3.4812
	Total	1472254	3.4810	.84954	.00070	3.4797	3.4824
Job Satisfaction	Gen Y	61315	3.6301	.78114	.00315	3.6239	3.6363
	Y/X	77448	3.6207	.78340	.00282	3.6152	3.6263
	Gen X	183201	3.7015	.75595	.00177	3.6980	3.7050
	X/BB	425592	3.7308	.75945	.00116	3.7285	3.7331
	BB	724698	3.7491	.74791	.00088	3.7474	3.7508
	Total	1472254	3.7262	.75643	.00062	3.7250	3.7274
Global Satisfaction	Gen Y	61315	3.6314	.90100	.00364	3.6242	3.6385
	Y/X	77448	3.5668	.92047	.00331	3.5603	3.5733
	Gen X	183201	3.6587	.88827	.00208	3.6546	3.6628
	X/BB	425592	3.6474	.90438	.00139	3.6447	3.6502
	BB	724698	3.6546	.89873	.00106	3.6525	3.6566
	Total	1472254	3.6474	.90054	.00074	3.6460	3.6489
Employee Engagement	Gen Y	61315	3.7660	.79120	.00320	3.7598	3.7723
	Y/X	77448	3.6975	.82881	.00298	3.6917	3.7034

	Gen X	183201	3.7046	.81947	.00191	3.7008	3.7083
	X/BB	425592	3.7043	.84668	.00130	3.7017	3.7068
	BB	724698	3.7168	.83883	.00099	3.7148	3.7187
	Total	1472254	3.7127	.83638	.00069	3.7113	3.7140

**Table G19: Primary Analysis (2010-2013) – Stayers and Leavers “No” Answer choice**

	2006	2008	2010	2011	2012	2013
Gen Y	No Data	67%	72%	72%	69%	64%
Gen X	65%	66%	71%	70%	70%	No Data
BB	70%	69%	71%	71%	71%	70%

**Table G20: Primary Analysis (2010-2013) – Stayers and Leavers “Retire” Answer choice**

	2006	2008	2010	2011	2012	2013
Gen Y	No Data	1%	1%	0%	0%	0%
Gen X	0%	0%	0%	0%	0%	No Data
BB	43%	40%	42%	43%	43%	41%

**Table G21: Primary Analysis (2010-2013) – Stayers and Leavers “Within” Answer choice**

	2006	2008	2010	2011	2012	2013
Gen Y	No Data	53%	59%	51%	61%	63%
Gen X	64%	68%	75%	68%	68%	No Data
BB	38%	42%	43%	39%	39%	40%

**Table G22: Primary Analysis (2010-2013) – Stayers and Leavers “Outside” Answer choice**

	2006	2008	2010	2011	2012	2013
Gen Y	No Data	17%	16%	23%	20%	18%
Gen X	18%	15%	11%	16%	16%	No Data
BB	8%	8%	6%	7%	7%	7%

**Table G23: Primary Analysis (2010-2013) – Stayers and Leavers “Other” Answer choice**

	2006	2008	2010	2011	2012	2013
Gen Y	No Data	29%	24%	25%	19%	19%
Gen X	18%	17%	13%	16%	16%	No Data
BB	10%	10%	10%	10%	10%	12%

## APPENDIX H: FIRST EXCURSION ANALYSIS (2006-2013) SUPPORTING TABLES

**Table H1: First Excursion Analysis (2006-2013) – Question 1e: Levene's Test of Homogeneity of Variances**

Index	Levene Statistic	df1	df2
Leadership and Knowledge Management	204.716***	5	1898431
Results-Oriented Performance Culture	319.988***	5	1898437
Talent Management	606.211***	5	1898429
Job Satisfaction	359.975***	5	1898428
Global Satisfaction	590.159***	5	1898249
Employee Engagement	174.468***	5	1898436
***p < .001			

**Table H2: First Excursion Analysis (2006-2013) – Question 1e: Welch's ANOVA**

Index	Statistic	df1	df2
Leadership and Knowledge Management	710.253***	5	723044.263
Results-Oriented Performance Culture	1083.421***	5	724025.878
Talent Management	976.086***	5	725105.991
Job Satisfaction	1934.794***	5	723418.489
Global Satisfaction	2694.978***	5	723206.645
Employee Engagement	1546.656***	5	721282.907
***p < .001			

**Table H3: First Excursion Analysis (2006-2013) – Question 1e: Descriptive Statistics**

Index and Year		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
Leadership and Knowledge Management	2006	217235	3.4946	.78885	.00169	3.4913	3.4979
	2008	208948	3.5272	.80466	.00176	3.5237	3.5306
	2010	248026	3.5891	.79278	.00159	3.5860	3.5922
	2011	245208	3.6137	.78414	.00158	3.6106	3.6168
	2012	634181	3.5602	.80860	.00102	3.5582	3.5622
	2013	344839	3.5367	.82185	.00140	3.5340	3.5394
	Total	1898437	3.5555	.80391	.00058	3.5543	3.5566
Results- Oriented Performance Culture	2006	217235	3.4236	.75378	.00162	3.4204	3.4268
	2008	208948	3.4395	.78137	.00171	3.4362	3.4429
	2010	248025	3.4628	.78191	.00157	3.4598	3.4659
	2011	245211	3.4642	.77675	.00157	3.4611	3.4673
	2012	634185	3.3762	.79512	.00100	3.3743	3.3782
	2013	344839	3.3557	.80167	.00137	3.3530	3.3583
	Total	1898443	3.4076	.78723	.00057	3.4064	3.4087
Talent Management	2006	217236	3.5032	.80197	.00172	3.4999	3.5066
	2008	208948	3.5344	.81330	.00178	3.5309	3.5378
	2010	248023	3.5372	.83593	.00168	3.5339	3.5405
	2011	245211	3.5326	.82971	.00168	3.5293	3.5359
	2012	634178	3.4750	.84960	.00107	3.4729	3.4771
	2013	344839	3.4151	.86784	.00148	3.4122	3.4180
	Total	1898435	3.4894	.84047	.00061	3.4882	3.4906
Job Satisfaction	2006	217234	3.7237	.74075	.00159	3.7206	3.7268
	2008	208948	3.7451	.74689	.00163	3.7419	3.7483
	2010	248024	3.8186	.73497	.00148	3.8157	3.8215
	2011	245208	3.7880	.73204	.00148	3.7851	3.7909
	2012	634184	3.7096	.75573	.00095	3.7077	3.7114
	2013	344836	3.6464	.77926	.00133	3.6438	3.6490
	Total	1898434	3.7280	.75363	.00055	3.7269	3.7291
Global Satisfaction	2006	217232	3.6093	.88569	.00190	3.6056	3.6130
	2008	208945	3.6355	.89646	.00196	3.6317	3.6394
	2010	247961	3.7761	.86968	.00175	3.7727	3.7796
	2011	245175	3.7310	.86760	.00175	3.7275	3.7344
	2012	634131	3.6255	.89977	.00113	3.6233	3.6277

	2013	344811	3.5359	.92953	.00158	3.5328	3.5390
	Total	1898255	3.6418	.89849	.00065	3.6405	3.6430
Employee Engagement	2006	217236	3.5869	.83785	.00180	3.5833	3.5904
	2008	208948	3.6110	.85235	.00186	3.6073	3.6146
	2010	248024	3.7455	.82519	.00166	3.7423	3.7488
	2011	245210	3.7523	.82005	.00166	3.7490	3.7555
	2012	634186	3.7005	.83735	.00105	3.6985	3.7026
	2013	344838	3.6833	.85212	.00145	3.6804	3.6861
	Total	1898442	3.6871	.83968	.00061	3.6859	3.6883

**Table H4: First Excursion Analysis (2006-2013) – Question 1e: Post-Hoc Analysis**

Index	Comparison Years		Mean Difference	Std. Error	95% Confidence Interval	
					Lower Bound	Upper Bound
Leadership and Knowledge Management	2006	2008	-.03254***	.00244	-.0395	-.0256
		2010	-.09449***	.00232	-.1011	-.0879
		2011	-.11908***	.00232	-.1257	-.1125
		2012	-.06561***	.00197	-.0712	-.0600
		2013	-.04208***	.00220	-.0483	-.0358
	2008	2006	.03254***	.00244	.0256	.0395
		2010	-.06195***	.00237	-.0687	-.0552
		2011	-.08654***	.00237	-.0933	-.0798
		2012	-.03307***	.00203	-.0389	-.0273
		2013	-.00954***	.00225	-.0160	-.0031
	2010	2006	.09449***	.00232	.0879	.1011
		2008	.06195***	.00237	.0552	.0687
		2011	-.02459***	.00225	-.0310	-.0182
		2012	.02888***	.00189	.0235	.0343
		2013	.05241***	.00212	.0464	.0584

	2011	2006	.11908***	.00232	.1125	.1257
		2008	.08654***	.00237	.0798	.0933
		2010	.02459***	.00225	.0182	.0310
		2012	.05347***	.00188	.0481	.0588
		2013	.07700***	.00211	.0710	.0830
	2012	2006	.06561***	.00197	.0600	.0712
		2008	.03307***	.00203	.0273	.0389
		2010	-.02888***	.00189	-.0343	-.0235
		2011	-.05347***	.00188	-.0588	-.0481
		2013	.02353***	.00173	.0186	.0285
	2013	2006	.04208***	.00220	.0358	.0483
		2008	.00954***	.00225	.0031	.0160
		2010	-.05241***	.00212	-.0584	-.0464
		2011	-.07700***	.00211	-.0830	-.0710
		2012	-.02353***	.00173	-.0285	-.0186
Results-Oriented Performance Culture	2006	2008	-.01592***	.00235	-.0226	-.0092
		2010	-.03925***	.00225	-.0457	-.0328
		2011	-.04061***	.00225	-.0470	-.0342
		2012	.04735***	.00190	.0419	.0528
		2013	.06793***	.00212	.0619	.0740
	2008	2006	.01592***	.00235	.0092	.0226
		2010	-.02333***	.00232	-.0299	-.0167
		2011	-.02469***	.00232	-.0313	-.0181
		2012	.06327***	.00198	.0576	.0689
		2013	.08385***	.00219	.0776	.0901
	2010	2006	.03925***	.00225	.0328	.0457
		2008	.02333***	.00232	.0167	.0299

		2011	-.00137 (p=.990)	.00222	-.0077	.0050
		2012	.08660***	.00186	.0813	.0919
		2013	.10717***	.00208	.1012	.1131
	2011	2006	.04061***	.00225	.0342	.0470
		2008	.02469***	.00232	.0181	.0313
		2010	.00137 (p=.990)	.00222	-.0050	.0077
		2012	.08797***	.00186	.0827	.0933
		2013	.10854***	.00208	.1026	.1145
	2012	2006	-.04735***	.00190	-.0528	-.0419
		2008	-.06327***	.00198	-.0689	-.0576
		2010	-.08660***	.00186	-.0919	-.0813
		2011	-.08797***	.00186	-.0933	-.0827
		2013	.02057***	.00169	.0158	.0254
	2013	2006	-.06793***	.00212	-.0740	-.0619
		2008	-.08385***	.00219	-.0901	-.0776
		2010	-.10717***	.00208	-.1131	-.1012
		2011	-.10854***	.00208	-.1145	-.1026
		2012	-.02057***	.00169	-.0254	-.0158
Talent Management	2006	2008	-.03112***	.00248	-.0382	-.0241
		2010	-.03393***	.00240	-.0408	-.0271
		2011	-.02936***	.00240	-.0362	-.0225
		2012	.02821***	.00202	.0224	.0340
		2013	.08815***	.00227	.0817	.0946
	2008	2006	.03112***	.00248	.0241	.0382
		2010	-.00281 (p=.861)	.00245	-.0098	.0042
		2011	.00177 (p=.979)	.00244	-.0052	.0087
		2012	.05934***	.00207	.0534	.0653

		2013	.11928***	.00231	.1127	.1259
	2010	2006	.03393***	.00240	.0271	.0408
		2008	.00281 (p=.861)	.00245	-.0042	.0098
		2011	.00458 (p=.383)	.00237	-.0022	.0113
		2012	.06215***	.00199	.0565	.0678
		2013	.12209***	.00224	.1157	.1285
	2011	2006	.02936***	.00240	.0225	.0362
		2008	-.00177 (p=.979)	.00244	-.0087	.0052
		2010	-.00458 (p=.383)	.00237	-.0113	.0022
		2012	.05757***	.00199	.0519	.0632
		2013	.11751***	.00223	.1111	.1239
	2012	2006	-.02821***	.00202	-.0340	-.0224
		2008	-.05934***	.00207	-.0653	-.0534
		2010	-.06215***	.00199	-.0678	-.0565
		2011	-.05757***	.00199	-.0632	-.0519
		2013	.05994***	.00182	.0547	.0651
	2013	2006	-.08815***	.00227	-.0946	-.0817
		2008	-.11928***	.00231	-.1259	-.1127
		2010	-.12209***	.00224	-.1285	-.1157
		2011	-.11751***	.00223	-.1239	-.1111
		2012	-.05994***	.00182	-.0651	-.0547
Job Satisfaction	2006	2008	-.02141***	.00228	-.0279	-.0149
		2010	-.09487***	.00217	-.1010	-.0887
		2011	-.06427***	.00217	-.0705	-.0581
		2012	.01413***	.00185	.0089	.0194
		2013	.07732***	.00207	.0714	.0832
	2008	2006	.02141***	.00228	.0149	.0279

		2010	-.07345***	.00220	-.0797	-.0672
		2011	-.04286***	.00220	-.0491	-.0366
		2012	.03554***	.00189	.0302	.0409
		2013	.09873***	.00210	.0927	.1047
	2010	2006	.09487***	.00217	.0887	.1010
		2008	.07345***	.00220	.0672	.0797
		2011	.03060***	.00209	.0246	.0365
		2012	.10899***	.00175	.1040	.1140
		2013	.17218***	.00198	.1665	.1778
	2011	2006	.06427***	.00217	.0581	.0705
		2008	.04286***	.00220	.0366	.0491
		2010	-.03060***	.00209	-.0365	-.0246
		2012	.07840***	.00176	.0734	.0834
		2013	.14158***	.00199	.1359	.1472
	2012	2006	-.01413***	.00185	-.0194	-.0089
		2008	-.03554***	.00189	-.0409	-.0302
		2010	-.10899***	.00175	-.1140	-.1040
		2011	-.07840***	.00176	-.0834	-.0734
		2013	.06319***	.00163	.0585	.0678
	2013	2006	-.07732***	.00207	-.0832	-.0714
		2008	-.09873***	.00210	-.1047	-.0927
		2010	-.17218***	.00198	-.1778	-.1665
		2011	-.14158***	.00199	-.1472	-.1359
		2012	-.06319***	.00163	-.0678	-.0585
Global Satisfaction	2006	2008	-.02625***	.00273	-.0340	-.0185
		2010	-.16688***	.00258	-.1742	-.1595
		2011	-.12170***	.00258	-.1291	-.1143

		2012	-.01620***	.00221	-.0225	-.0099
		2013	.07341***	.00247	.0664	.0805
	2008	2006	.02625***	.00273	.0185	.0340
		2010	-.14062***	.00263	-.1481	-.1331
		2011	-.09545***	.00263	-.1029	-.0880
		2012	.01005***	.00226	.0036	.0165
		2013	.09966***	.00252	.0925	.1068
	2010	2006	.16688***	.00258	.1595	.1742
		2008	.14062***	.00263	.1331	.1481
		2011	.04517***	.00247	.0381	.0522
		2012	.15067***	.00208	.1447	.1566
		2013	.24028***	.00236	.2336	.2470
	2011	2006	.12170***	.00258	.1143	.1291
		2008	.09545***	.00263	.0880	.1029
		2010	-.04517***	.00247	-.0522	-.0381
		2012	.10550***	.00208	.0996	.1114
		2013	.19511***	.00236	.1884	.2018
	2012	2006	.01620***	.00221	.0099	.0225
		2008	-.01005***	.00226	-.0165	-.0036
		2010	-.15067***	.00208	-.1566	-.1447
		2011	-.10550***	.00208	-.1114	-.0996
		2013	.08961***	.00194	.0841	.0952
	2013	2006	-.07341***	.00247	-.0805	-.0664
		2008	-.09966***	.00252	-.1068	-.0925
		2010	-.24028***	.00236	-.2470	-.2336
		2011	-.19511***	.00236	-.2018	-.1884
		2012	-.08961***	.00194	-.0952	-.0841

Employee Engagement	2006	2008	-.02411***	.00259	-.0315	-.0167
		2010	-.15864***	.00244	-.1656	-.1517
		2011	-.16538***	.00244	-.1723	-.1584
		2012	-.11366***	.00208	-.1196	-.1077
		2013	-.09639***	.00231	-.1030	-.0898
	2008	2006	.02411***	.00259	.0167	.0315
		2010	-.13452***	.00249	-.1416	-.1274
		2011	-.14127***	.00249	-.1484	-.1342
		2012	-.08954***	.00214	-.0956	-.0834
		2013	-.07227***	.00236	-.0790	-.0655
	2010	2006	.15864***	.00244	.1517	.1656
		2008	.13452***	.00249	.1274	.1416
		2011	-.00674*	.00234	-.0134	-.0001
		2012	.04498***	.00196	.0394	.0506
		2013	.06225***	.00220	.0560	.0685
	2011	2006	.16538***	.00244	.1584	.1723
		2008	.14127***	.00249	.1342	.1484
		2010	.00674***	.00234	.0001	.0134
		2012	.05173***	.00196	.0461	.0573
		2013	.06900***	.00220	.0627	.0753
	2012	2006	.11366***	.00208	.1077	.1196
		2008	.08954***	.00214	.0834	.0956
		2010	-.04498***	.00196	-.0506	-.0394
		2011	-.05173***	.00196	-.0573	-.0461
		2013	.01727***	.00179	.0122	.0224
	2013	2006	.09639***	.00231	.0898	.1030
		2008	.07227***	.00236	.0655	.0790

		2010	-.06225***	.00220	-.0685	-.0560
		2011	-.06900***	.00220	-.0753	-.0627
		2012	-.01727***	.00179	-.0224	-.0122
*p < .05, ***p < .001						

**Table H5: First Excursion Analysis (2006-2013) – Question 2e: 2006 Levene's Test of Homogeneity of Variances**

Index	Levene Statistic	df1	df2
Leadership and Knowledge Management	83.350***	3	217231
Results-Oriented Performance Culture	72.616***	3	217231
Talent Management	28.134***	3	217232
Job Satisfaction	17.654***	3	217230
Global Satisfaction	54.278***	3	217228
Employee Engagement	102.377***	3	217232
***p < .001			

**Table H6: First Excursion Analysis (2006-2013) – Question 2e: 2006 Welch's ANOVA**

Index	Statistic	df1	df2
Leadership and Knowledge Management	91.998***	3	11889.210
Results-Oriented Performance Culture	30.404***	3	11884.131
Talent Management	49.944***	3	11863.674
Job Satisfaction	49.236***	3	11834.247
Global Satisfaction	2.374 (p=.068)	3	11861.472
Employee Engagement	27.206***	3	11892.205
***p < .001			

**Table H7: First Excursion Analysis (2006-2013) – Question 2e: 2006 Descriptive Statistics**

Index and Generation		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
Leadership and Knowledge Management	Y/X	2473	3.7042	.72929	.01467	3.6755	3.7330
	Gen X	37597	3.5167	.75657	.00390	3.5090	3.5243
	X/BB	70058	3.4757	.79124	.00299	3.4699	3.4816
	BB	107107	3.4944	.79875	.00244	3.4896	3.4992
	Total	217235	3.4946	.78885	.00169	3.4913	3.4979
Results-Oriented Performance Culture	Y/X	2473	3.5251	.70268	.01413	3.4974	3.5528
	Gen X	37597	3.4175	.72535	.00374	3.4102	3.4249
	X/BB	70058	3.4099	.75407	.00285	3.4043	3.4155
	BB	107107	3.4323	.76416	.00233	3.4277	3.4369
	Total	217235	3.4236	.75378	.00162	3.4204	3.4268
Talent Management	Y/X	2473	3.6425	.76940	.01547	3.6122	3.6728
	Gen X	37597	3.5298	.78131	.00403	3.5219	3.5377
	X/BB	70058	3.4883	.80341	.00304	3.4824	3.4943
	BB	107108	3.5004	.80838	.00247	3.4956	3.5053
	Total	217236	3.5032	.80197	.00172	3.4999	3.5066
Job Satisfaction	Y/X	2473	3.6438	.74863	.01505	3.6143	3.6733
	Gen X	37597	3.6944	.72941	.00376	3.6870	3.7018
	X/BB	70057	3.7169	.73721	.00279	3.7114	3.7223
	BB	107107	3.7403	.74630	.00228	3.7358	3.7447
	Total	217234	3.7237	.74075	.00159	3.7206	3.7268
Global Satisfaction	Y/X	2473	3.6309	.85618	.01722	3.5972	3.6647
	Gen X	37597	3.6113	.86085	.00444	3.6026	3.6200
	X/BB	70057	3.6026	.88267	.00333	3.5961	3.6091
	BB	107105	3.6124	.89684	.00274	3.6071	3.6178
	Total	217232	3.6093	.88569	.00190	3.6056	3.6130
Employee Engagement	Y/X	2473	3.7062	.77267	.01554	3.6757	3.7366
	Gen X	37597	3.5967	.80179	.00414	3.5886	3.6049
	X/BB	70058	3.5741	.83818	.00317	3.5679	3.5803
	BB	107108	3.5890	.85109	.00260	3.5839	3.5941
	Total	217236	3.5869	.83785	.00180	3.5833	3.5904

**Table H8: First Excursion Analysis (2006-2013) – Question 2e: 2006 Post-Hoc Analysis**

Dependent Variable	Generation		Mean Difference	Std. Error	95% Confidence Interval	
					Lower Bound	Upper Bound
Leadership and Knowledge Management	Y/X	Gen X	.18756***	.01518	.1485	.2266
		X/BB	.22851***	.01497	.1900	.2670
		BB	.20986***	.01487	.1716	.2481
	Gen X	Y/X	-.18756***	.01518	-.2266	-.1485
		X/BB	.04096***	.00492	.0283	.0536
		BB	.02230***	.00460	.0105	.0341
	X/BB	Y/X	-.22851***	.01497	-.2670	-.1900
		Gen X	-.04096***	.00492	-.0536	-.0283
		BB	-.01866***	.00386	-.0286	-.0087
	BB	Y/X	-.20986***	.01487	-.2481	-.1716
		Gen X	-.02230***	.00460	-.0341	-.0105
		X/BB	.01866***	.00386	.0087	.0286
Results-Oriented Performance Culture	Y/X	Gen X	.10755***	.01462	.0700	.1451
		X/BB	.11517***	.01441	.0781	.1522
		BB	.09277***	.01432	.0559	.1296
	Gen X	Y/X	-.10755***	.01462	-.1451	-.0700
		X/BB	.00761 (p=.368)	.00470	-.0045	.0197
		BB	-.01479*	.00441	-.0261	-.0035
	X/BB	Y/X	-.11517***	.01441	-.1522	-.0781
		Gen X	-.00761 (p=.368)	.00470	-.0197	.0045
		BB	-.02240***	.00368	-.0319	-.0129
	BB	Y/X	-.09277***	.01432	-.1296	-.0559

		Gen X	.01479*	.00441	.0035	.0261
		X/BB	.02240***	.00368	.0129	.0319
Talent Management	Y/X	Gen X	.11268***	.01599	.0716	.1538
		X/BB	.15416***	.01577	.1136	.1947
		BB	.14208***	.01567	.1018	.1824
	Gen X	Y/X	-.11268***	.01599	-.1538	-.0716
		X/BB	.04147***	.00504	.0285	.0544
		BB	.02939***	.00473	.0173	.0415
	X/BB	Y/X	-.15416***	.01577	-.1947	-.1136
		Gen X	-.04147***	.00504	-.0544	-.0285
		BB	-0.01208	.00391	-.0221	-.0020
	BB	Y/X	-.14208***	.01567	-.1824	-.1018
		Gen X	-.02939***	.00473	-.0415	-.0173
		X/BB	0.01208*	.00391	.0020	.0221
Job Satisfaction	Y/X	Gen X	-0.0506*	.01552	-.0905	-.0107
		X/BB	-.07311***	.01531	-.1125	-.0338
		BB	-.09650***	.01523	-.1356	-.0574
	Gen X	Y/X	0.0506*	.01552	.0107	.0905
		X/BB	-.02251***	.00468	-.0345	-.0105
		BB	-.04590***	.00440	-.0572	-.0346
	X/BB	Y/X	.07311***	.01531	.0338	.1125
		Gen X	.02251***	.00468	.0105	.0345
		BB	-.02339***	.00360	-.0326	-.0141
	BB	Y/X	.09650***	.01523	.0574	.1356
		Gen X	.04590***	.00440	.0346	.0572

		X/BB	.02339***	.00360	.0141	.0326
Employee Engagement	Y/X	Gen X	.10943***	.01608	.0681	.1508
		X/BB	.13210***	.01586	.0913	.1729
		BB	.11717***	.01575	.0767	.1577
	Gen X	Y/X	-.10943***	.01608	-.1508	-.0681
		X/BB	.02267***	.00521	.0093	.0360
		BB	.00773 (p=.389	.00488	-.0048	.0203
	X/BB	Y/X	-.13210***	.01586	-.1729	-.0913
		Gen X	-.02267***	.00521	-.0360	-.0093
		BB	-0.01494	.00410	-.0255	-.0044
	BB	Y/X	-.11717***	.01575	-.1577	-.0767
		Gen X	-.00773 (p=.389)	.00488	-.0203	.0048
		X/BB	.01494*	.00410	.0044	.0255
*p < .05, ***p < .001						

**Table H9: First Excursion Analysis (2006-2013) – Question 2e: 2008 Levene's Test of Homogeneity of Variances**

Index	Levene Statistic	df1	df2
Leadership and Knowledge Management	70.106***	3	208944
Results-Oriented Performance Culture	45.588***	3	208944
Talent Management	14.596***	3	208944
Job Satisfaction	4.153*	3	208944
Global Satisfaction	38.355***	3	208941
Employee Engagement	70.109***	3	208944
*p < .05, ***p < .001			

**Table H10: First Excursion Analysis (2006-2013) – Question 2e: 2008 Welch's ANOVA**

Index	Statistic	df1	df2
Leadership and Knowledge Management	84.345***	3	11058.133
Results-Oriented Performance Culture	20.042***	3	11045.179
Talent Management	38.808***	3	11034.316
Job Satisfaction	40.330***	3	10996.949
Global Satisfaction	2.953*	3	11033.863
Employee Engagement	26.282***	3	11058.965
*p < .05, ***p < .001			

**Table H11: First Excursion Analysis (2006-2013) – Question 2e: 2008 Descriptive Statistics**

Index and Generation		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
Leadership and Knowledge Management	Gen Y	2298	3.7484	.72568	.01514	3.7187	3.7781
	Gen X	35943	3.5479	.77854	.00411	3.5398	3.5559
	X/BB	64123	3.5188	.80822	.00319	3.5126	3.5251
	BB	106584	3.5204	.81197	.00249	3.5155	3.5253
	Total	208948	3.5272	.80466	.00176	3.5237	3.5306
Results-Oriented Performance Culture	Gen Y	2298	3.5494	.72230	.01507	3.5199	3.5790
	Gen X	35943	3.4292	.75767	.00400	3.4214	3.4371
	X/BB	64123	3.4392	.78174	.00309	3.4331	3.4452
	BB	106584	3.4408	.79002	.00242	3.4361	3.4455
	Total	208948	3.4395	.78137	.00171	3.4362	3.4429
Talent Management	Gen Y	2298	3.6906	.75824	.01582	3.6596	3.7216
	Gen X	35943	3.5474	.80542	.00425	3.5391	3.5557
	X/BB	64123	3.5342	.81364	.00321	3.5279	3.5405
	BB	106584	3.5267	.81649	.00250	3.5218	3.5316
	Total	208948	3.5344	.81330	.00178	3.5309	3.5378
Job Satisfaction	Gen Y	2298	3.6811	.75093	.01566	3.6504	3.7118
	Gen X	35943	3.7097	.74387	.00392	3.7020	3.7174
	X/BB	64123	3.7502	.74351	.00294	3.7444	3.7559
	BB	106584	3.7554	.74943	.00230	3.7509	3.7599

	Total	208948	3.7451	.74689	.00163	3.7419	3.7483
Global Satisfaction	Gen Y	2298	3.6779	.84316	.01759	3.6434	3.7124
	Gen X	35943	3.6289	.87903	.00464	3.6198	3.6380
	X/BB	64122	3.6390	.89220	.00352	3.6320	3.6459
	BB	106582	3.6348	.90588	.00277	3.6294	3.6402
	Total	208945	3.6355	.89646	.00196	3.6317	3.6394
Employee Engagement	Gen Y	2298	3.7511	.76895	.01604	3.7197	3.7826
	Gen X	35943	3.6150	.82515	.00435	3.6064	3.6235
	X/BB	64123	3.6082	.85204	.00336	3.6016	3.6148
	BB	106584	3.6083	.86296	.00264	3.6031	3.6135
	Total	208948	3.6110	.85235	.00186	3.6073	3.6146

**Table H12: First Excursion Analysis (2006-2013) – Question 2e: 2008 Post-Hoc Analysis**

Index	Generation		Mean Difference	Std. Error	95% Confidence Interval	
					Lower Bound	Upper Bound
Leadership and Knowledge Management	Gen Y	Gen X	.20054***	.01569	.1602	.2409
		X/BB	.22959***	.01547	.1898	.2694
		BB	.22803***	.01534	.1886	.2675
	Gen X	Gen Y	-.20054***	.01569	-.2409	-.1602
		X/BB	.02905***	.00520	.0157	.0424
		BB	.02749***	.00480	.0152	.0398
	X/BB	Gen Y	-.22959***	.01547	-.2694	-.1898
		Gen X	-.02905***	.00520	-.0424	-.0157
		BB	-.00156 (p=.980)	.00405	-.0120	.0088
	BB	Gen Y	-.22803***	.01534	-.2675	-.1886
		Gen X	-.02749***	.00480	-.0398	-.0152
		X/BB	.00156 (p=.980)	.00405	-.0088	.0120

Results-Oriented Performance Culture	Gen Y	Gen X	.12021***	.01559	.0801	.1603
		X/BB	.11028***	.01538	.0707	.1498
		BB	.10865***	.01526	.0694	.1479
	Gen X	Gen Y	-.12021***	.01559	-.1603	-.0801
		X/BB	-.00993 (p=.201)	.00505	-.0229	.0030
		BB	-.01156 (p=.064)	.00467	-.0236	.0004
	X/BB	Gen Y	-.11028***	.01538	-.1498	-.0707
		Gen X	.00993 (p=.201)	.00505	-.0030	.0229
		BB	-.00163 (p=.976)	.00392	-.0117	.0084
	BB	Gen Y	-.10865***	.01526	-.1479	-.0694
		Gen X	.01156 (p=.064)	.00467	-.0004	.0236
		X/BB	.00163 (p=.976)	.00392	-.0084	.0117
Talent Management	Gen Y	Gen X	.14319***	.01638	.1011	.1853
		X/BB	.15643***	.01614	.1149	.1979
		BB	.16393***	.01601	.1228	.2051
	Gen X	Gen Y	-.14319***	.01638	-.1853	-.1011
		X/BB	.01324 (p=.062)	.00533	-.0004	.0269
		BB	.02074***	.00493	.0081	.0334
	X/BB	Gen Y	-.15643***	.01614	-.1979	-.1149
		Gen X	-.01324 (p=.062)	.00533	-.0269	.0004
		BB	.0075 (p=.254)	.00407	-.0030	.0180
	BB	Gen Y	-.16393***	.01601	-.2051	-.1228
		Gen X	-.02074***	.00493	-.0334	-.0081
		X/BB	-.0075 (p=.254)	.00407	-.0180	.0030
Job	Gen Y	Gen X	-.02859 (p=.288)	.01615	-.0701	.0129

Satisfaction		X/BB	-.06907***	.01594	-.1100	-.0281
		BB	-.07424***	.01583	-.1149	-.0335
	Gen X	Gen Y	.02859 (p=.288)	.01615	-.0129	.0701
		X/BB	-.04047***	.00490	-.0531	-.0279
		BB	-.04565***	.00455	-.0573	-.0340
	X/BB	Gen Y	.06907***	.01594	.0281	.1100
		Gen X	.04047***	.00490	.0279	.0531
		BB	-.00517 (p=.507)	.00373	-.0147	.0044
	BB	Gen Y	.07424***	.01583	.0335	.1149
		Gen X	.04565***	.00455	.0340	.0573
		X/BB	.00517 (p=.507)	.00373	-.0044	.0147
Global Satisfaction	Gen Y	Gen X	.04899*	.01819	.0022	.0957
		X/BB	.03892 (p=.132)	.01794	-.0072	.0850
		BB	.04308 (p=.074)	.01781	-.0027	.0889
	Gen X	Gen Y	-.04899*	.01819	-.0957	-.0022
		X/BB	-.01006 (p=.309)	.00582	-.0250	.0049
		BB	-.00591 (p=.693)	.00540	-.0198	.0080
	X/BB	Gen Y	-.03892 (p=.132)	.01794	-.0850	.0072
		Gen X	.01006 (p=.309)	.00582	-.0049	.0250
		BB	.00416 (p=.791)	.00448	-.0074	.0157
	BB	Gen Y	-.04308(p=.074)	.01781	-.0889	.0027
		Gen X	.00591 (p=.693)	.00540	-.0080	.0198
		X/BB	-.00416 (p=.791)	.00448	-.0157	.0074
Employee Engagement	Gen Y	Gen X	.13616***	.01662	.0934	.1789
		X/BB	.14293***	.01639	.1008	.1851

	Gen X	BB	.14286***	.01626	.1011	.1846
		Gen Y	-.13616***	.01662	-.1789	-.0934
		X/BB	.00677 (p=.608)	.00550	-.0074	.0209
		BB	.0067 (p=.553)	.00509	-.0064	.0198
	X/BB	Gen Y	-.14293***	.01639	-.1851	-.1008
		Gen X	-.00677 (p=.608)	.00550	-.0209	.0074
		BB	-.00007 (p=1.00)	.00428	-.0111	.0109
	BB	Gen Y	-.14286***	.01626	-.1846	-.1011
		Gen X	-.0067(p=.553)	.00509	-.0198	.0064
		X/BB	.00007 (p=1.00)	.00428	-.0109	.0111
	*p < .05, ***p < .001					

**Table H13: First Excursion Analysis (2006-2013) – Question 3e: Levene’s Test of Homogeneity of Variances**

Index	Levene Statistic	df1	df2
Leadership and Knowledge Management	237.543***	4	1898432
Results-Oriented Performance Culture	81.650***	4	1898438
Talent Management	101.242***	4	1898430
Job Satisfaction	116.577***	4	1898429
Global Satisfaction	86.986***	4	1898250
Employee Engagement	313.705***	4	1898437
***p < .001			

**Table H14: First Excursion Analysis (2006-2013) – Question 3e: Welch's ANOVA**

Index	Statistic	df1	df2
Leadership and Knowledge Management	390.883***	4	265541.282
Results-Oriented Performance Culture	151.025***	4	265031.320
Talent Management	160.463***	4	264786.067
Job Satisfaction	875.072***	4	263358.162
Global Satisfaction	139.997***	4	264348.333
Employee Engagement	193.406***	4	266158.251
***p < .001			

**Table H15: First Excursion Analysis (2006-2013) – Question 3e: Descriptive Statistics**

Index and Generation		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
Leadership and Knowledge Management	Gen Y	63613	3.6693	.77382	.00307	3.6633	3.6753
	Y/X	79921	3.5608	.80003	.00283	3.5553	3.5663
	Gen X	256741	3.5529	.78465	.00155	3.5499	3.5560
	X/BB	559773	3.5409	.81189	.00109	3.5388	3.5431
	BB	938389	3.5567	.80603	.00083	3.5551	3.5583
	Total	1898437	3.5555	.80391	.00058	3.5543	3.5566
Results-Oriented Performance Culture	Gen Y	63613	3.4190	.77658	.00308	3.4129	3.4250
	Y/X	79921	3.3627	.78688	.00278	3.3572	3.3681
	Gen X	256740	3.3879	.77118	.00152	3.3849	3.3909
	X/BB	559777	3.4046	.79092	.00106	3.4026	3.4067
	BB	938392	3.4177	.78985	.00082	3.4161	3.4193
	Total	1898443	3.4076	.78723	.00057	3.4064	3.4087
Talent Management	Gen Y	63613	3.5536	.82135	.00326	3.5472	3.5600
	Y/X	79921	3.4521	.85566	.00303	3.4462	3.4581
	Gen X	256742	3.5039	.82851	.00164	3.5007	3.5071
	X/BB	559773	3.4849	.84689	.00113	3.4827	3.4871
	BB	938386	3.4870	.83958	.00087	3.4853	3.4887
	Total	1898435	3.4894	.84047	.00061	3.4882	3.4906
Job Satisfaction	Gen Y	63613	3.6320	.78012	.00309	3.6259	3.6380
	Y/X	79920	3.6214	.78235	.00277	3.6160	3.6269

	Gen X	256742	3.7016	.75044	.00148	3.6987	3.7045
	X/BB	559773	3.7313	.75493	.00101	3.7293	3.7332
	BB	938386	3.7488	.74791	.00077	3.7473	3.7503
	Total	1898434	3.7280	.75363	.00055	3.7269	3.7291
Global Satisfaction	Gen Y	63605	3.6331	.89901	.00356	3.6261	3.6400
	Y/X	79908	3.5688	.91861	.00325	3.5624	3.5752
	Gen X	256723	3.6476	.88320	.00174	3.6442	3.6510
	X/BB	559715	3.6409	.90042	.00120	3.6385	3.6432
	BB	938304	3.6475	.89944	.00093	3.6457	3.6493
	Total	1898255	3.6418	.89849	.00065	3.6405	3.6430
Employee Engagement	Gen Y	63613	3.7655	.79040	.00313	3.7593	3.7716
	Y/X	79921	3.6978	.82713	.00293	3.6921	3.7035
	Gen X	256742	3.6762	.81894	.00162	3.6731	3.6794
	X/BB	559776	3.6770	.84768	.00113	3.6748	3.6792
	BB	938390	3.6899	.84448	.00087	3.6881	3.6916
	Total	1898442	3.6871	.83968	.00061	3.6859	3.6883

**Table H16: First Excursion Analysis (2006-2013) – Question 3c: Post-Hoc Analysis**

Index	Generation		Mean Difference	Std. Error	95% Confidence Interval	
					Lower Bound	Upper Bound
Leadership and Knowledge Management	Gen Y	Y/X	.10849***	.00417	.0971	.1199
		Gen X	.11636***	.00344	.1070	.1257
		X/BB	.12835***	.00325	.1195	.1372
		BB	.11259***	.00318	.1039	.1213
	Y/X	Gen Y	-.10849***	.00417	-.1199	-.0971
		Gen X	.00787 (p=.105)	.00323	-.0009	.0167
		X/BB	.01986***	.00303	.0116	.0281
		BB	.0041 (p=.635)	.00295	-.0039	.0121
	Gen X	Gen Y	-.11636***	.00344	-.1257	-.1070

		Y/X	-.00787 (p=.105)	.00323	-.0167	.0009
		X/BB	.01199***	.00189	.0068	.0171
		BB	-.00377 (p=.201)	.00176	-.0086	.0010
	X/BB	Gen Y	-.12835***	.00325	-.1372	-.1195
		Y/X	-.01986***	.00303	-.0281	-.0116
		Gen X	-.01199***	.00189	-.0171	-.0068
		BB	-.01576***	.00137	-.0195	-.0120
	BB	Gen Y	-.11259***	.00318	-.1213	-.1039
		Y/X	-.0041 (p=.635)	.00295	-.0121	.0039
		Gen X	.00377 (p=.201)	.00176	-.0010	.0086
		X/BB	.01576***	.00137	.0120	.0195
Results-Oriented Performance Culture	Gen Y	Y/X	.05632***	.00415	.0450	.0676
		Gen X	.03109***	.00343	.0217	.0405
		X/BB	.01434***	.00326	.0055	.0232
		BB	.00125 (p=.995)	.00319	-.0074	.0099
	Y/X	Gen Y	-.05632***	.00415	-.0676	-.0450
		Gen X	-.02523***	.00317	-.0339	-.0166
		X/BB	-.04198***	.00298	-.0501	-.0339
		BB	-.05507***	.00290	-.0630	-.0472
	Gen X	Gen Y	-.03109***	.00343	-.0405	-.0217
		Y/X	.02523***	.00317	.0166	.0339
		X/BB	-.01675***	.00185	-.0218	-.0117
		BB	-.02984***	.00173	-.0345	-.0251
	X/BB	Gen Y	-.01434***	.00326	-.0232	-.0055
		Y/X	.04198***	.00298	.0339	.0501

		Gen X	.01675***	.00185	.0117	.0218
		BB	-.01309***	.00134	-.0167	-.0094
	BB	Gen Y	-.00125 (p=.995)	.00319	-.0099	.0074
		Y/X	.05507***	.00290	.0472	.0630
		Gen X	.02984***	.00173	.0251	.0345
		X/BB	.01309***	.00134	.0094	.0167
Talent Management	Gen Y	Y/X	.10146***	.00445	.0893	.1136
		Gen X	.04969***	.00364	.0398	.0596
		X/BB	.06870***	.00345	.0593	.0781
		BB	.06655***	.00337	.0574	.0757
	Y/X	Gen Y	-.10146***	.00445	-.1136	-.0893
		Gen X	-.05177***	.00344	-.0612	-.0424
		X/BB	-.03276***	.00323	-.0416	-.0239
		BB	-.03491***	.00315	-.0435	-.0263
	Gen X	Gen Y	-.04969***	.00364	-.0596	-.0398
		Y/X	.05177***	.00344	.0424	.0612
		X/BB	.01901***	.00199	.0136	.0244
		BB	.01686***	.00185	.0118	.0219
	X/BB	Gen Y	-.06870***	.00345	-.0781	-.0593
		Y/X	.03276***	.00323	.0239	.0416
		Gen X	-.01901***	.00199	-.0244	-.0136
		BB	-.00215 (p=.558)	.00143	-.0060	.0017
	BB	Gen Y	-.06655***	.00337	-.0757	-.0574
		Y/X	.03491***	.00315	.0263	.0435
		Gen X	-.01686***	.00185	-.0219	-.0118

		X/BB	.00215 (p=.558)	.00143	-.0017	.0060
Job Satisfaction	Gen Y	Y/X	.01052 (p=.083)	.00415	-.0008	.0218
		Gen X	-.06964***	.00343	-.0790	-.0603
		X/BB	-.09929***	.00325	-.1082	-.0904
		BB	-.11686***	.00319	-.1256	-.1082
		Gen Y	-.01052 (p=.083)	.00415	-.0218	.0008
	Y/X	Gen X	-.08016***	.00314	-.0887	-.0716
		X/BB	-.10981***	.00295	-.1178	-.1018
		BB	-.12738***	.00287	-.1352	-.1195
		Gen Y	.06964***	.00343	.0603	.0790
	Gen X	Y/X	.08016***	.00314	.0716	.0887
		X/BB	-.02965***	.00179	-.0345	-.0248
		BB	-.04721***	.00167	-.0518	-.0427
		Gen Y	.09929***	.00325	.0904	.1082
	X/BB	Y/X	.10981***	.00295	.1018	.1178
		Gen X	.02965***	.00179	.0248	.0345
		BB	-.01757***	.00127	-.0210	-.0141
		Gen Y	.11686***	.00319	.1082	.1256
	BB	Y/X	.12738***	.00287	.1195	.1352
		Gen X	.04721***	.00167	.0427	.0518
		X/BB	.01757***	.00127	.0141	.0210
		Gen Y	.06426***	.00482	.0511	.0774
Global Satisfaction	Gen Y	Gen X	-.01453*	.00397	-.0254	-.0037
		X/BB	-.0078 (p=.231)	.00376	-.0181	.0025
		BB	-.01445***	.00368	-.0245	-.0044

	Y/X	Gen Y	-.06426***	.00482	-.0774	-.0511
		Gen X	-.07879***	.00369	-.0888	-.0687
		X/BB	-.07206***	.00347	-.0815	-.0626
		BB	-.07871***	.00338	-.0879	-.0695
	Gen X	Gen Y	.01453*	.00397	.0037	.0254
		Y/X	.07879***	.00369	.0687	.0888
		X/BB	.00672*	.00212	.0009	.0125
		BB	.00008 (p=1.00)	.00198	-.0053	.0055
	X/BB	Gen Y	.0078 (p=.231)	.00376	-.0025	.0181
		Y/X	.07206***	.00347	.0626	.0815
		Gen X	-.00672*	.00212	-.0125	-.0009
		BB	-.00664***	.00152	-.0108	-.0025
	BB	Gen Y	.01445***	.00368	.0044	.0245
		Y/X	.07871***	.00338	.0695	.0879
		Gen X	-.00008 (p=1.00)	.00198	-.0055	.0053
		X/BB	.00664***	.00152	.0025	.0108
Employee Engagement	Gen Y	Y/X	.06768***	.00429	.0560	.0794
		Gen X	.08924***	.00353	.0796	.0989
		X/BB	.08850***	.00333	.0794	.0976
		BB	.07562***	.00325	.0667	.0845
	Y/X	Gen Y	-.06768***	.00429	-.0794	-.0560
		Gen X	.02156***	.00334	.0124	.0307
		X/BB	.02082***	.00314	.0123	.0294
		BB	.00794 (p=.070)	.00305	-.0004	.0163
	Gen X	Gen Y	-.08924***	.00353	-.0989	-.0796



# **APPENDIX I: SECOND EXCURSION ANALYSIS (2010-2013) SUPPORTING TABLES**

**Table I1: Second Excursion Analysis (2010-2013) – Question 2e<sub>1</sub>: 2010 Levene's Test of Homogeneity of Variances**

Index	Levene Statistic	df1	df2
Leadership and Knowledge Management	157.845***	3	248022
Results-Oriented Performance Culture	85.706***	3	248021
Talent Management	75.878***	3	248019
Job Satisfaction	5.539***	3	248020
Global Satisfaction	53.386***	3	247957
Employee Engagement	187.022***	3	248020
***p < .001			

**Table I2: Second Excursion Analysis (2010-2013) – Question 2e<sub>1</sub>: 2010 Welch's ANOVA**

Index	Statistic	df1	df2
Leadership and Knowledge Management	208.962***	3	48906.688
Results-Oriented Performance Culture	64.248***	3	48675.422
Talent Management	130.628***	3	48574.949
Job Satisfaction	41.218***	3	48092.065
Global Satisfaction	15.821***	3	48426.507
Employee Engagement	104.507***	3	49052.545
***p < .001			

**Table I3: Second Excursion Analysis (2010-2013) – Question 2e<sub>1</sub>: 2010 Descriptive Statistics**

Index and Generation		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
Leadership & Knowledge Management	Gen Y	12056	3.7466	.71263	.00649	3.7339	3.7594
	X/Y	35699	3.5935	.77005	.00408	3.5855	3.6015
	X/BB	74101	3.5736	.79812	.00293	3.5678	3.5793
	BB	126170	3.5819	.80158	.00226	3.5775	3.5864
	Total	248026	3.5891	.79278	.00159	3.5860	3.5922
Results-Oriented Performance Culture	Gen Y	12056	3.5483	.72405	.00659	3.5354	3.5612
	X/Y	35698	3.4471	.76220	.00403	3.4392	3.4550
	X/BB	74101	3.4540	.78436	.00288	3.4484	3.4597
	BB	126170	3.4643	.79074	.00223	3.4599	3.4687
	Total	248025	3.4628	.78191	.00157	3.4598	3.4659
Talent Management	Gen Y	12056	3.6679	.77705	.00708	3.6540	3.6817
	X/Y	35699	3.5543	.82271	.00435	3.5458	3.5629
	X/BB	74100	3.5296	.84251	.00310	3.5235	3.5357
	BB	126168	3.5243	.84004	.00236	3.5196	3.5289
	Total	248023	3.5372	.83593	.00168	3.5339	3.5405
Job Satisfaction	Gen Y	12055	3.7774	.72842	.00663	3.7643	3.7904
	X/Y	35699	3.7902	.73038	.00387	3.7826	3.7978
	X/BB	74101	3.8192	.73415	.00270	3.8139	3.8245
	BB	126169	3.8301	.73701	.00207	3.8261	3.8342
	Total	248024	3.8186	.73497	.00148	3.8157	3.8215
Global Satisfaction	Gen Y	12047	3.8267	.82671	.00753	3.8119	3.8415
	X/Y	35692	3.7733	.85358	.00452	3.7645	3.7822
	X/BB	74078	3.7721	.86919	.00319	3.7659	3.7784
	BB	126144	3.7745	.87831	.00247	3.7696	3.7793
	Total	247961	3.7761	.86968	.00175	3.7727	3.7796
Employee Engagement	Gen Y	12056	3.8585	.73331	.00668	3.8454	3.8716
	X/Y	35699	3.7561	.79550	.00421	3.7478	3.7643
	X/BB	74101	3.7357	.82989	.00305	3.7297	3.7417
	BB	126168	3.7375	.83804	.00236	3.7329	3.7421
	Total	248024	3.7455	.82519	.00166	3.7423	3.7488

**Table I4: Second Excursion Analysis (2010-2013) – Question 2e<sub>1</sub>: 2010 Post-Hoc Analysis**

Index	Generation		Mean Difference	Std. Error	95% Confidence Interval	
					Lower Bound	Upper Bound
Leadership & Knowledge Management	Gen Y	X/Y	.15315***	.00766	.1335	.1728
		X/BB	.17307***	.00712	.1548	.1914
		BB	.16470***	.00687	.1470	.1824
	X/Y	Gen Y	-.15315***	.00766	-.1728	-.1335
		X/BB	.01993***	.00502	.0070	.0328
		BB	.01155 (p=0.063)	.00466	-.0004	.0235
	X/BB	Gen Y	-.17307***	.00712	-.1914	-.1548
		X/Y	-.01993***	.00502	-.0328	-.0070
		BB	-.00838 (p=0.107)	.00370	-.0179	.0011
	BB	Gen Y	-.16470***	.00687	-.1824	-.1470
		X/Y	-.01155 (p=0.063)	.00466	-.0235	.0004
		X/BB	.00838 (p=0.107)	.00370	-.0011	.0179
Results-Oriented Performance Culture	Gen Y	X/Y	.10117***	.00773	.0813	.1210
		X/BB	.09426***	.00720	.0758	.1128
		BB	.08400***	.00696	.0661	.1019
	X/Y	Gen Y	-.10117***	.00773	-.1210	-.0813
		X/BB	-.00691 (p=0.504)	.00496	-.0196	.0058
		BB	-.01717***	.00461	-.0290	-.0053
	X/BB	Gen Y	-.09426***	.00720	-.1128	-.0758
		X/Y	.00691 (p=0.504)	.00496	-.0058	.0196
		BB	-.01026* (p=0.025)	.00364	-.0196	-.0009
	BB	Gen Y	-.08400***	.00696	-.1019	-.0661

		X/Y	.01717***	.00461	.0053	.0290
		X/BB	.01026* (p=0.025)	.00364	.0009	.0196
Talent Management	Gen Y	X/Y	.11353***	.00831	.0922	.1349
		X/BB	.13827***	.00772	.1184	.1581
		BB	.14360***	.00746	.1244	.1628
	X/Y	Gen Y	-.11353***	.00831	-.1349	-.0922
		X/BB	.02474***	.00534	.0110	.0385
		BB	.03008***	.00496	.0173	.0428
	X/BB	Gen Y	-.13827***	.00772	-.1581	-.1184
		X/Y	-.02474***	.00534	-.0385	-.0110
		BB	.00534 (p=0.518)	.00390	-.0047	.0153
	BB	Gen Y	-.14360***	.00746	-.1628	-.1244
		X/Y	-.03008***	.00496	-.0428	-.0173
		X/BB	-.00534 (p=0.518)	.00390	-.0153	.0047
Job Satisfaction	Gen Y	X/Y	-.01284 (p=0.338)	.00768	-.0326	.0069
		X/BB	-.04184***	.00716	-.0602	-.0234
		BB	-.05279***	.00695	-.0707	-.0349
	X/Y	Gen Y	.01284 (p=0.338)	.00768	-.0069	.0326
		X/BB	-.02900***	.00471	-.0411	-.0169
		BB	-.03995***	.00439	-.0512	-.0287
	X/BB	Gen Y	.04184***	.00716	.0234	.0602
		X/Y	.02900***	.00471	.0169	.0411
		BB	-.01095* (p=0.007)	.00340	-.0197	-.0022
	BB	Gen Y	.05279***	.00695	.0349	.0707
		X/Y	.03995***	.00439	.0287	.0512



**Table I5: Second Excursion Analysis (2010-2013) – Question 2e<sub>1</sub>: 2011 Levene's Test of Homogeneity of Variances**

Index	Levene Statistic	df1	df2
Leadership and Knowledge Management	151.422***	3	245204
Results-Oriented Performance Culture	70.230***	3	245207
Talent Management	89.645***	3	245207
Job Satisfaction	3.702*	3	245204
Global Satisfaction	50.955***	3	245171
Employee Engagement	168.997***	3	245206
*p < .05, ***p < .001			

**Table I6: Second Excursion Analysis (2010-2013) – Question 2e<sub>1</sub>: 2011 Welch's ANOVA**

Index	Statistic	df1	df2
Leadership and Knowledge Management	235.773***	3	54746.386
Results-Oriented Performance Culture	64.916***	3	54451.945
Talent Management	135.850***	3	54484.256
Job Satisfaction	55.802***	3	53712.183
Global Satisfaction	20.689***	3	54187.684
Employee Engagement	113.981***	3	54868.287
***p < .001			

**Table I7: Second Excursion Analysis (2010-2013) – Question 2e<sub>1</sub>: 2011 Descriptive Statistics**

Index and Generation		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
Leadership & Knowledge Management	Gen Y	13625	3.7699	.70899	.00607	3.7580	3.7818
	Y/X	38379	3.6196	.76223	.00389	3.6120	3.6272
	X/BB	71708	3.6008	.79300	.00296	3.5950	3.6067
	BB	121496	3.6019	.79179	.00227	3.5974	3.6064
	Total	245208	3.6137	.78414	.00158	3.6106	3.6168
Results-Oriented Performance Culture	Gen Y	13625	3.5464	.72320	.00620	3.5342	3.5585
	Y/X	38379	3.4482	.76092	.00388	3.4406	3.4559
	X/BB	71710	3.4612	.78128	.00292	3.4555	3.4669
	BB	121497	3.4618	.78424	.00225	3.4574	3.4662
	Total	245211	3.4642	.77675	.00157	3.4611	3.4673
Talent Management	Gen Y	13625	3.6573	.76421	.00655	3.6444	3.6701
	Y/X	38379	3.5430	.81874	.00418	3.5348	3.5511
	X/BB	71710	3.5281	.83797	.00313	3.5220	3.5343
	BB	121497	3.5180	.83410	.00239	3.5133	3.5226
	Total	245211	3.5326	.82971	.00168	3.5293	3.5359
Job Satisfaction	Gen Y	13625	3.7404	.73259	.00628	3.7281	3.7527
	Y/X	38379	3.7568	.72804	.00372	3.7495	3.7641
	X/BB	71709	3.7920	.73672	.00275	3.7866	3.7974
	BB	121495	3.8008	.72997	.00209	3.7966	3.8049
	Total	245208	3.7880	.73204	.00148	3.7851	3.7909
Global Satisfaction	Gen Y	13620	3.7848	.82888	.00710	3.7709	3.7988
	Y/X	38374	3.7312	.85207	.00435	3.7227	3.7397
	X/BB	71705	3.7295	.87228	.00326	3.7231	3.7359
	BB	121476	3.7257	.87373	.00251	3.7208	3.7306
	Total	245175	3.7310	.86760	.00175	3.7275	3.7344
Employee Engagement	Gen Y	13625	3.8639	.73493	.00630	3.8516	3.8763
	Y/X	38378	3.7597	.79468	.00406	3.7517	3.7676
	X/BB	71709	3.7448	.82904	.00310	3.7387	3.7508
	BB	121498	3.7418	.83066	.00238	3.7371	3.7465
	Total	245210	3.7523	.82005	.00166	3.7490	3.7555

**Table I8: Second Excursion Analysis (2010-2013) – Question 2e<sub>1</sub>: 2011 Post-Hoc Analysis**

Index	Generation		Mean Difference	Std. Error	95% Confidence Interval	
					Lower Bound	Upper Bound
Leadership and Knowledge Management	Gen Y	Y/X	.15027***	.00721	.1317	.1688
		X/BB	.16903***	.00676	.1517	.1864
		BB	.16797***	.00648	.1513	.1846
	Y/X	Gen Y	-.15027***	.00721	-.1688	-.1317
		X/BB	.01876***	.00489	.0062	.0313
		BB	.01770***	.00451	.0061	.0293
	X/BB	Gen Y	-.16903***	.00676	-.1864	-.1517
		Y/X	-.01876***	.00489	-.0313	-.0062
		BB	-0.00105 (p=0.992)	.00373	-.0106	.0085
	BB	Gen Y	-.16797***	.00648	-.1846	-.1513
		Y/X	-.01770***	.00451	-.0293	-.0061
		X/BB	0.00105 (p=0.992)	.00373	-.0085	.0106
Results-Oriented Performance Culture	Gen Y	Y/X	.09811***	.00731	.0793	.1169
		X/BB	.08516***	.00685	.0676	.1028
		BB	.08455***	.00659	.0676	.1015
	Y/X	Gen Y	-.09811***	.00731	-.1169	-.0793
		X/BB	-.01295*	.00486	-.0254	-.0005
		BB	-.01356*	.00449	-.0251	-.0020
	X/BB	Gen Y	-.08516***	.00685	-.1028	-.0676
		Y/X	.01295*	.00486	.0005	.0254
		BB	-0.00061 (p=0.998)	.00368	-.0101	.0089

	BB	Gen Y	-.08455***	.00659	-.1015	-.0676
		Y/X	.01356*	.00449	.0020	.0251
		X/BB	0.00061 (p=0.998)	.00368	-.0089	.0101
Talent Management	Gen Y	Y/X	.11431***	.00777	.0944	.1343
		X/BB	.12913***	.00726	.1105	.1478
		BB	.13931***	.00697	.1214	.1572
	Y/X	Gen Y	-.11431***	.00777	-.1343	-.0944
		X/BB	.01481*	.00522	.0014	.0282
		BB	.02500***	.00482	.0126	.0374
	X/BB	Gen Y	-.12913***	.00726	-.1478	-.1105
		Y/X	-.01481*	.00522	-.0282	-.0014
		BB	.01019*	.00394	.0001	.0203
	BB	Gen Y	-.13931***	.00697	-.1572	-.1214
		Y/X	-.02500***	.00482	-.0374	-.0126
		X/BB	-.01019*	.00394	-.0203	-.0001
Job Satisfaction	Gen Y	Y/X	-0.01641 (p=0.11)	.00729	-.0351	.0023
		X/BB	-.05167***	.00685	-.0693	-.0341
		BB	-.06038***	.00662	-.0774	-.0434
	Y/X	Gen Y	0.01641 (p=0.11)	.00729	-.0023	.0351
		X/BB	-.03526***	.00462	-.0471	-.0234
		BB	-.04398***	.00427	-.0549	-.0330
	X/BB	Gen Y	.05167***	.00685	.0341	.0693
		Y/X	.03526***	.00462	.0234	.0471
		BB	-0.00872 (p=0.057)	.00346	-.0176	.0002
	BB	Gen Y	.06038***	.00662	.0434	.0774

		Y/X	.04398***	.00427	.0330	.0549
		X/BB	0.00872 (p=0.057)	.00346	-.0002	.0176
Global Satisfaction	Gen Y	Y/X	.05364***	.00833	.0322	.0750
		X/BB	.05532***	.00781	.0352	.0754
		BB	.05911***	.00753	.0398	.0785
	Y/X	Gen Y	-.05364***	.00833	-.0750	-.0322
		X/BB	0.00168 (p=0.99)	.00543	-.0123	.0156
		BB	0.00547 (p=0.696)	.00502	-.0074	.0184
	X/BB	Gen Y	-.05532***	.00781	-.0754	-.0352
		Y/X	-0.00168 (p=0.99)	.00543	-.0156	.0123
		BB	0.0038 (p=0.792)	.00411	-.0068	.0144
	BB	Gen Y	-.05911***	.00753	-.0785	-.0398
		Y/X	-0.00547 (p=0.696)	.00502	-.0184	.0074
		X/BB	-0.0038 (p=0.792)	.00411	-.0144	.0068
Employee Engagement	Gen Y	Y/X	.10425***	.00749	.0850	.1235
		X/BB	.11915***	.00702	.1011	.1372
		BB	.12214***	.00673	.1048	.1394
	Y/X	Gen Y	-.10425***	.00749	-.1235	-.0850
		X/BB	.01490*	.00510	.0018	.0280
		BB	.01789***	.00470	.0058	.0300
	X/BB	Gen Y	-.11915***	.00702	-.1372	-.1011
		Y/X	-.01490*	.00510	-.0280	-.0018
		BB	0.00299 (p=0.87)	.00391	-.0070	.0130
	BB	Gen Y	-.12214***	.00673	-.1394	-.1048
		Y/X	-.01789***	.00470	-.0300	-.0058

		X/BB	-0.00299 (p=0.87)	.00391	-.0130	.0070
***p < .05, ***p < .001						

**Table I9: Second Excursion Analysis (2010-2013) – Question 2e<sub>1</sub>: 2012 Levene's Test of Homogeneity of Variances**

Index	Levene Statistic	df1	df2
Leadership and Knowledge Management	78.186***	3	634177
Results-Oriented Performance Culture	20.018***	3	634181
Talent Management	60.109***	3	634174
Job Satisfaction	94.308***	3	634180
Global Satisfaction	7.300***	3	634127
Employee Engagement	101.624***	3	634182
***p < .001			

**Table I10: Second Excursion Analysis (2010-2013) – Question 2e<sub>1</sub>: 2012 Welch's ANOVA**

Index	Statistic	df1	df2
Leadership and Knowledge Management	216.499***	3	151020.013
Results-Oriented Performance Culture	207.682***	3	150669.603
Talent Management	108.279***	3	150848.535
Job Satisfaction	448.661***	3	149099.481
Global Satisfaction	49.121***	3	150028.578
Employee Engagement	107.868***	3	151480.279
***p < .001			

**Table I11: Second Excursion Analysis (2010-2013) – Question 2e<sub>1</sub>: 2012 Descriptive Statistics**

Index and Generation		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
Leadership & Knowledge Management	Gen Y	37894	3.6468	.78287	.00402	3.6389	3.6546
	Y/X	109123	3.5304	.80641	.00244	3.5256	3.5351
	X/BB	183137	3.5511	.81792	.00191	3.5473	3.5548
	BB	304027	3.5657	.80606	.00146	3.5628	3.5685
	Total	634181	3.5602	.80860	.00102	3.5582	3.5622
Results-Oriented Performance Culture	Gen Y	37894	3.3900	.78259	.00402	3.3821	3.3979
	Y/X	109123	3.3235	.79231	.00240	3.3188	3.3282
	X/BB	183138	3.3780	.80026	.00187	3.3743	3.3817
	BB	304030	3.3924	.79377	.00144	3.3896	3.3952
	Total	634185	3.3762	.79512	.00100	3.3743	3.3782
Talent Management	Gen Y	37894	3.5397	.82483	.00424	3.5314	3.5481
	Y/X	109124	3.4504	.85367	.00258	3.4453	3.4555
	X/BB	183136	3.4743	.85762	.00200	3.4704	3.4783
	BB	304024	3.4762	.84589	.00153	3.4732	3.4792
	Total	634178	3.4750	.84960	.00107	3.4729	3.4771
Job Satisfaction	Gen Y	37894	3.6305	.78028	.00401	3.6227	3.6384
	Y/X	109124	3.6531	.76972	.00233	3.6485	3.6576
	X/BB	183138	3.7177	.75752	.00177	3.7142	3.7212
	BB	304028	3.7348	.74466	.00135	3.7321	3.7374
	Total	634184	3.7096	.75573	.00095	3.7077	3.7114
Global Satisfaction	Gen Y	37890	3.6257	.90320	.00464	3.6166	3.6348
	Y/X	109117	3.5957	.90600	.00274	3.5903	3.6011
	X/BB	183120	3.6294	.90240	.00211	3.6252	3.6335
	BB	304004	3.6338	.89529	.00162	3.6306	3.6370
	Total	634131	3.6255	.89977	.00113	3.6233	3.6277
Employee Engagement	Gen Y	37894	3.7459	.79782	.00410	3.7379	3.7539
	Y/X	109125	3.6683	.83369	.00252	3.6634	3.6733
	X/BB	183138	3.6959	.84789	.00198	3.6920	3.6997
	BB	304029	3.7092	.83665	.00152	3.7063	3.7122
	Total	634186	3.7005	.83735	.00105	3.6985	3.7026

**Table 112: Second Excursion Analysis (2010-2013) – Question 2e<sub>1</sub>: 2012 Post-Hoc Analysis**

Index	Generation		Mean Difference	Std. Error	95% Confidence Interval	
					Lower Bound	Upper Bound
Leadership and Knowledge Management	Gen Y	Y/X	.11641***	.00470	.1043	.1285
		X/BB	.09570***	.00445	.0843	.1071
		BB	.08108***	.00428	.0701	.0921
	Y/X	Gen Y	-.11641***	.00470	-.1285	-.1043
		X/BB	-.02072***	.00310	-.0287	-.0128
		BB	-.03533***	.00285	-.0426	-.0280
	X/BB	Gen Y	-.09570***	.00445	-.1071	-.0843
		Y/X	.02072***	.00310	.0128	.0287
		BB	-.01461***	.00241	-.0208	-.0084
	BB	Gen Y	-.08108***	.00428	-.0921	-.0701
		Y/X	.03533***	.00285	.0280	.0426
		X/BB	.01461***	.00241	.0084	.0208
Results-Oriented Performance Culture	Gen Y	Y/X	.06655***	.00468	.0545	.0786
		X/BB	.01201*	.00443	.0006	.0234
		BB	-0.0024 (p=0.943)	.00427	-.0134	.0086
	Y/X	Gen Y	-.06655***	.00468	-.0786	-.0545
		X/BB	-.05454***	.00304	-.0624	-.0467
		BB	-.06895***	.00280	-.0761	-.0618
	X/BB	Gen Y	-.01201*	.00443	-.0234	-.0006
		Y/X	.05454***	.00304	.0467	.0624
		BB	-.01441***	.00236	-.0205	-.0083

	BB	Gen Y	0.0024 (p=0.943)	.00427	-.0086	.0134
		Y/X	.06895***	.00280	.0618	.0761
		X/BB	.01441***	.00236	.0083	.0205
Talent Management	Gen Y	Y/X	.08936***	.00496	.0766	.1021
		X/BB	.06541***	.00469	.0534	.0775
		BB	.06356***	.00451	.0520	.0751
	Y/X	Gen Y	-.08936***	.00496	-.1021	-.0766
		X/BB	-.02395***	.00327	-.0324	-.0155
		BB	-.02580***	.00301	-.0335	-.0181
	X/BB	Gen Y	-.06541***	.00469	-.0775	-.0534
		Y/X	.02395***	.00327	.0155	.0324
		BB	-0.00185 (p=0.883)	.00252	-.0083	.0046
	BB	Gen Y	-.06356***	.00451	-.0751	-.0520
		Y/X	.02580***	.00301	.0181	.0335
		X/BB	0.00185 (p=0.883)	.00252	-.0046	.0083
Job Satisfaction	Gen Y	Y/X	-.02253***	.00464	-.0344	-.0106
		X/BB	-.08718***	.00438	-.0984	-.0759
		BB	-.10427***	.00423	-.1151	-.0934
	Y/X	Gen Y	.02253***	.00464	.0106	.0344
		X/BB	-.06466***	.00293	-.0722	-.0571
		BB	-.08174***	.00269	-.0887	-.0748
	X/BB	Gen Y	.08718***	.00438	.0759	.0984
		Y/X	.06466***	.00293	.0571	.0722
		BB	-.01708***	.00223	-.0228	-.0114
	BB	Gen Y	.10427***	.00423	.0934	.1151

		Y/X	.08174***	.00269	.0748	.0887
		X/BB	.01708***	.00223	.0114	.0228
Global Satisfaction	Gen Y	Y/X	.03003***	.00539	.0162	.0439
		X/BB	-0.00363 (p=0.892)	.00510	-.0167	.0095
		BB	-0.00804 (p=0.359)	.00492	-.0207	.0046
	Y/X	Gen Y	-.03003***	.00539	-.0439	-.0162
		X/BB	-.03366***	.00346	-.0426	-.0248
		BB	-.03807***	.00319	-.0463	-.0299
	X/BB	Gen Y	0.00363 (p=0.892)	.00510	-.0095	.0167
		Y/X	.03366***	.00346	.0248	.0426
		BB	-0.00441 (p=0.347)	.00266	-.0112	.0024
	BB	Gen Y	0.00804 (p=0.359)	.00492	-.0046	.0207
		Y/X	.03807***	.00319	.0299	.0463
		X/BB	0.00441 (p=0.347)	.00266	-.0024	.0112
Employee Engagement	Gen Y	Y/X	.07755***	.00481	.0652	.0899
		X/BB	.05003***	.00455	.0383	.0617
		BB	.03666***	.00437	.0254	.0479
	Y/X	Gen Y	-.07755***	.00481	-.0899	-.0652
		X/BB	-.02752***	.00321	-.0358	-.0193
		BB	-.04090***	.00294	-.0485	-.0333
	X/BB	Gen Y	-.05003***	.00455	-.0617	-.0383
		Y/X	.02752***	.00321	.0193	.0358
		BB	-.01337***	.00250	-.0198	-.0070
	BB	Gen Y	-.03666***	.00437	-.0479	-.0254
		Y/X	.04090***	.00294	.0333	.0485

		X/BB	.01337***	.00250	.0070	.0198
*p < .05, ***p < .001						

**Table I13: Second Excursion Analysis (2010-2013) – Question 2e<sub>1</sub>: 2013 Levene's Test of Homogeneity of Variances**

Index	Levene Statistic	df1	df2
Leadership and Knowledge Management	70.653	3	344835
Results-Oriented Performance Culture	23.322	3	344835
Talent Management	56.445	3	344835
Job Satisfaction	59.427	3	344832
Global Satisfaction	16.771	3	344807
Employee Engagement	83.084	3	344834
***p < .001			

**Table I14: Second Excursion Analysis (2010-2013) – Question 2e<sub>1</sub>: 2013 Welch's ANOVA**

Index	Statistic	df1	df2
Leadership and Knowledge Management	137.283	3	68243.862
Results-Oriented Performance Culture	108.925	3	68018.920
Talent Management	63.460	3	68045.414
Job Satisfaction	299.754	3	67431.956
Global Satisfaction	56.840	3	67887.640
Employee Engagement	74.907	3	68394.023
***p < .001			

**Table I15: Second Excursion Analysis (2010-2013) – Question 2e1: 2013 Descriptive Statistics**

Index and Generation		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
Leadership & Knowledge Management	Gen Y	16441	3.6229	.78472	.00612	3.6109	3.6349
	Y/X	58747	3.5054	.81981	.00338	3.4988	3.5121
	X/BB	96646	3.5142	.83678	.00269	3.5089	3.5195
	BB	173005	3.5517	.81664	.00196	3.5478	3.5555
	Total	344839	3.5367	.82185	.00140	3.5340	3.5394
Results-Oriented Performance Culture	Gen Y	16441	3.3768	.78470	.00612	3.3648	3.3888
	Y/X	58747	3.3072	.80027	.00330	3.3007	3.3137
	X/BB	96647	3.3486	.81113	.00261	3.3435	3.3537
	BB	173004	3.3741	.79766	.00192	3.3703	3.3778
	Total	344839	3.3557	.80167	.00137	3.3530	3.3583
Talent Management	Gen Y	16441	3.4800	.84163	.00656	3.4671	3.4929
	Y/X	58747	3.3885	.87269	.00360	3.3814	3.3955
	X/BB	96646	3.4033	.88129	.00283	3.3977	3.4088
	BB	173005	3.4245	.86059	.00207	3.4205	3.4286
	Total	344839	3.4151	.86784	.00148	3.4122	3.4180
Job Satisfaction	Gen Y	16441	3.5628	.79695	.00622	3.5507	3.5750
	Y/X	58747	3.5805	.79451	.00328	3.5741	3.5870
	X/BB	96645	3.6423	.78714	.00253	3.6373	3.6472
	BB	173003	3.6790	.76574	.00184	3.6754	3.6826
	Total	344836	3.6464	.77926	.00133	3.6438	3.6490
Global Satisfaction	Gen Y	16441	3.5440	.91736	.00715	3.5299	3.5580
	Y/X	58744	3.4987	.93563	.00386	3.4912	3.5063
	X/BB	96633	3.5252	.93936	.00302	3.5193	3.5311
	BB	172993	3.5537	.92261	.00222	3.5493	3.5580
	Total	344811	3.5359	.92953	.00158	3.5328	3.5390
Employee Engagement	Gen Y	16441	3.7374	.80284	.00626	3.7251	3.7497
	Y/X	58747	3.6550	.84958	.00351	3.6482	3.6619
	X/BB	96647	3.6661	.86775	.00279	3.6606	3.6716
	BB	173003	3.6973	.84818	.00204	3.6933	3.7013
	Total	344838	3.6833	.85212	.00145	3.6804	3.6861

**Table I16: Second Excursion Analysis (2010-2013) – Question 2e<sub>1</sub>: 2013 Post-Hoc Analysis**

Index	Generation		Mean Difference	Std. Error	95% Confidence Interval	
					Lower Bound	Upper Bound
Leadership and Knowledge Management	Gen Y	Y/X	.11748***	.00699	.0995	.1354
		X/BB	.10871***	.00669	.0915	.1259
		BB	.07121***	.00643	.0547	.0877
	Y/X	Gen Y	-.11748***	.00699	-.1354	-.0995
		X/BB	-0.00877 (p=0.177)	.00432	-.0199	.0023
		BB	-.04627***	.00391	-.0563	-.0362
	X/BB	Gen Y	-.10871***	.00669	-.1259	-.0915
		Y/X	0.00877 (p=0.177)	.00432	-.0023	.0199
		BB	-.03750***	.00333	-.0461	-.0289
	BB	Gen Y	-.07121***	.00643	-.0877	-.0547
		Y/X	.04627***	.00391	.0362	.0563
		X/BB	.03750***	.00333	.0289	.0461
Results-Oriented Performance Culture	Gen Y	Y/X	.06957***	.00695	.0517	.0874
		X/BB	.02821***	.00665	.0111	.0453
		BB	0.00271 (p=0.975)	.00641	-.0138	.0192
	Y/X	Gen Y	-.06957***	.00695	-.0874	-.0517
		X/BB	-.04136***	.00421	-.0522	-.0305
		BB	-.06686***	.00382	-.0767	-.0571
	X/BB	Gen Y	-.02821***	.00665	-.0453	-.0111
		Y/X	.04136***	.00421	.0305	.0522
		BB	-.02550***	.00324	-.0338	-.0172

	BB	Gen Y	-0.00271 (p=0.975)	.00641	-.0192	.0138
		Y/X	.06686***	.00382	.0571	.0767
		X/BB	.02550***	.00324	.0172	.0338
Talent Management	Gen Y	Y/X	.09150***	.00749	.0723	.1107
		X/BB	.07669***	.00715	.0583	.0951
		BB	.05547***	.00688	.0378	.0731
	Y/X	Gen Y	-.09150***	.00749	-.1107	-.0723
		X/BB	-.01481*	.00458	-.0266	-.0030
		BB	-.03604***	.00415	-.0467	-.0254
	X/BB	Gen Y	-.07669***	.00715	-.0951	-.0583
		Y/X	.01481*	.00458	.0030	.0266
		BB	-.02123***	.00351	-.0302	-.0122
	BB	Gen Y	-.05547***	.00688	-.0731	-.0378
		Y/X	.03604***	.00415	.0254	.0467
		X/BB	.02123***	.00351	.0122	.0302
Job Satisfaction	Gen Y	Y/X	-0.01769 (p=0.057)	.00703	-.0357	.0004
		X/BB	-.07942***	.00671	-.0967	-.0622
		BB	-.11612***	.00648	-.1328	-.0995
	Y/X	Gen Y	0.01769 (p=0.057)	.00703	-.0004	.0357
		X/BB	-.06173***	.00414	-.0724	-.0511
		BB	-.09843***	.00376	-.1081	-.0888
	X/BB	Gen Y	.07942***	.00671	.0622	.0967
		Y/X	.06173***	.00414	.0511	.0724
		BB	-.03670***	.00313	-.0447	-.0287
	BB	Gen Y	.11612***	.00648	.0995	.1328

		Y/X	.09843***	.00376	.0888	.1081
		X/BB	.03670***	.00313	.0287	.0447
Global Satisfaction	Gen Y	Y/X	.04523***	.00813	.0243	.0661
		X/BB	0.01875 (p=0.074)	.00777	-.0012	.0387
		BB	-0.00969 (p=0.567)	.00749	-.0289	.0096
	Y/X	Gen Y	-.04523***	.00813	-.0661	-.0243
		X/BB	-.02648***	.00490	-.0391	-.0139
		BB	-.05492***	.00445	-.0664	-.0435
	X/BB	Gen Y	-0.01875 (p=0.074)	.00777	-.0387	.0012
		Y/X	.02648***	.00490	.0139	.0391
		BB	-.02844***	.00375	-.0381	-.0188
	BB	Gen Y	0.00969 (p=0.567)	.00749	-.0096	.0289
		Y/X	.05492***	.00445	.0435	.0664
		X/BB	.02844***	.00375	.0188	.0381
Employee Engagement	Gen Y	Y/X	.08237***	.00718	.0639	.1008
		X/BB	.07131***	.00686	.0537	.0889
		BB	.04011***	.00659	.0232	.0570
	Y/X	Gen Y	-.08237***	.00718	-.1008	-.0639
		X/BB	-0.01106 (p=0.065)	.00448	-.0226	.0004
		BB	-.04227***	.00406	-.0527	-.0319
	X/BB	Gen Y	-.07131***	.00686	-.0889	-.0537
		Y/X	0.01106 (p=0.065)	.00448	-.0004	.0226
		BB	-.03121***	.00346	-.0401	-.0223
	BB	Gen Y	-.04011***	.00659	-.0570	-.0232
		Y/X	.04227***	.00406	.0319	.0527

		X/BB	.03121***	.00346	.0223	.0401
*p < .05, ***p < .001						

**Table I17: Second Excursion Analysis (2010-2013) – Question 3e<sub>1</sub>: 2010 Levene's Test of Homogeneity of Variances**

Index	Levene Statistic	df1	df2
Leadership and Knowledge Management	322.512	3	1472250
Results-Oriented Performance Culture	93.581	3	1472256
Talent Management	206.552	3	1472247
Job Satisfaction	94.578	3	1472248
Global Satisfaction	37.465	3	1472074
Employee Engagement	392.436	3	1472254
***p < .001			

**Table I18: Second Excursion Analysis (2010-2013) – Question 3e<sub>1</sub>: 2010 Welch's ANOVA**

Index	Statistic	df1	df2
Leadership and Knowledge Management	643.773	3	323179.328
Results-Oriented Performance Culture	355.884	3	322048.930
Talent Management	327.417	3	322250.214
Job Satisfaction	843.913	3	318686.508
Global Satisfaction	102.445	3	320815.035
Employee Engagement	272.758	3	324097.067
***p < .001			

**Table I19: Second Excursion Analysis (2010-2013) – Question 3e: 2010 Descriptive Statistics**

Index and Generation		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
Leadership & Knowledge Management	Gen Y	80016	3.6779	.76295	.00270	3.6726	3.6832
	Y/X	241948	3.5478	.79864	.00162	3.5446	3.5510
	X/BB	425592	3.5550	.81519	.00125	3.5526	3.5575
	BB	724698	3.5712	.80562	.00095	3.5694	3.5731
	Total	1472254	3.5685	.80549	.00066	3.5672	3.5698
Results-Oriented Performance Culture	Gen Y	80016	3.4378	.76830	.00272	3.4324	3.4431
	Y/X	241947	3.3575	.78728	.00160	3.3544	3.3607
	X/BB	425596	3.3986	.79806	.00122	3.3962	3.4010
	BB	724701	3.4122	.79347	.00093	3.4104	3.4140
	Total	1472260	3.4007	.79272	.00065	3.3994	3.4019
Talent Management	Gen Y	80016	3.5668	.81423	.00288	3.5611	3.5724
	Y/X	241949	3.4654	.85056	.00173	3.4620	3.4688
	X/BB	425592	3.4769	.85844	.00132	3.4743	3.4795
	BB	724694	3.4792	.84723	.00100	3.4773	3.4812
	Total	1472251	3.4810	.84954	.00070	3.4797	3.4824
Job Satisfaction	Gen Y	80015	3.6574	.77179	.00273	3.6521	3.6628
	Y/X	241949	3.6721	.76725	.00156	3.6691	3.6752
	X/BB	425593	3.7308	.75945	.00116	3.7285	3.7331
	BB	724695	3.7491	.74791	.00088	3.7474	3.7508
	Total	1472252	3.7262	.75643	.00062	3.7250	3.7274
Global Satisfaction	Gen Y	79998	3.6663	.88844	.00314	3.6601	3.6724
	Y/X	241927	3.6199	.90261	.00184	3.6163	3.6235
	X/BB	425536	3.6474	.90438	.00139	3.6447	3.6502
	BB	724617	3.6546	.89873	.00106	3.6525	3.6566
	Total	1472078	3.6474	.90054	.00074	3.6460	3.6489
Employee Engagement	Gen Y	80016	3.7812	.78096	.00276	3.7758	3.7866
	Y/X	241949	3.6925	.82715	.00168	3.6892	3.6958
	X/BB	425595	3.7043	.84668	.00130	3.7017	3.7068
	BB	724698	3.7168	.83883	.00099	3.7148	3.7187
	Total	1472258	3.7127	.83638	.00069	3.7113	3.7140

**Table I20: Second Excursion Analysis (2010-2013) – Question 3e<sub>1</sub>: 2010 Post-Hoc Analysis**

Index	Generation		Mean Difference	Std. Error	95% Confidence Interval	
					Lower Bound	Upper Bound
Leadership & Knowledge Management	Gen Y	Y/X	.13010***	.00315	.1220	.1382
		X/BB	.12287***	.00297	.1152	.1305
		BB	.10663***	.00286	.0993	.1140
	Y/X	Gen Y	-.13010***	.00315	-.1382	-.1220
		X/BB	-.00723*	.00205	-.0125	-.0020
		BB	-.02347***	.00188	-.0283	-.0186
	X/BB	Gen Y	-.12287***	.00297	-.1305	-.1152
		Y/X	.00723*	.00205	.0020	.0125
		BB	-.01625***	.00157	-.0203	-.0122
	BB	Gen Y	-.10663***	.00286	-.1140	-.0993
		Y/X	.02347***	.00188	.0186	.0283
		X/BB	.01625***	.00157	.0122	.0203
Results-Oriented Performance Culture	Gen Y	Y/X	.08021***	.00315	.0721	.0883
		X/BB	.03919***	.00298	.0315	.0468
		BB	.02558***	.00287	.0182	.0330
	Y/X	Gen Y	-.08021***	.00315	-.0883	-.0721
		X/BB	-.04102***	.00201	-.0462	-.0358
		BB	-.05463***	.00185	-.0594	-.0499
	X/BB	Gen Y	-.03919***	.00298	-.0468	-.0315
		Y/X	.04102***	.00201	.0358	.0462

	BB	BB	-.01361***	.00154	-.0176	-.0097
		Gen Y	-.02558***	.00287	-.0330	-.0182
		Y/X	.05463***	.00185	.0499	.0594
		X/BB	.01361***	.00154	.0097	.0176
Talent Management	Gen Y	Y/X	.10141***	.00336	.0928	.1100
		X/BB	.08989***	.00316	.0818	.0980
		BB	.08756***	.00305	.0797	.0954
	Y/X	Gen Y	-.10141***	.00336	-.1100	-.0928
		X/BB	-.01151***	.00217	-.0171	-.0059
		BB	-.01385***	.00200	-.0190	-.0087
	X/BB	Gen Y	-.08989***	.00316	-.0980	-.0818
		Y/X	.01151***	.00217	.0059	.0171
		BB	-0.00233 (p=0.49)	.00165	-.0066	.0019
	BB	Gen Y	-.08756***	.00305	-.0954	-.0797
		Y/X	.01385***	.00200	.0087	.0190
		X/BB	0.00233 (p=0.49)	.00165	-.0019	.0066
Job Satisfaction	Gen Y	Y/X	-.01469***	.00314	-.0228	-.0066
		X/BB	-.07333***	.00297	-.0809	-.0657
		BB	-.09168***	.00287	-.0990	-.0843
	Y/X	Gen Y	.01469***	.00314	.0066	.0228
		X/BB	-.05864***	.00195	-.0636	-.0536
		BB	-.07699***	.00179	-.0816	-.0724
	X/BB	Gen Y	.07333***	.00297	.0657	.0809
		Y/X	.05864***	.00195	.0536	.0636
		BB	-.01835***	.00146	-.0221	-.0146

	BB	Gen Y	.09168***	.00287	.0843	.0990
		Y/X	.07699***	.00179	.0724	.0816
		X/BB	.01835***	.00146	.0146	.0221
Global Satisfaction	Gen Y	Y/X	.04643***	.00364	.0371	.0558
		X/BB	.01884***	.00343	.0100	.0277
		BB	.01173*	.00331	.0032	.0202
	Y/X	Gen Y	-.04643***	.00364	-.0558	-.0371
		X/BB	-.02759***	.00230	-.0335	-.0217
		BB	-.03470***	.00212	-.0401	-.0293
	X/BB	Gen Y	-.01884***	.00343	-.0277	-.0100
		Y/X	.02759***	.00230	.0217	.0335
		BB	-.00711***	.00174	-.0116	-.0026
	BB	Gen Y	-.01173*	.00331	-.0202	-.0032
		Y/X	.03470***	.00212	.0293	.0401
		X/BB	.00711***	.00174	.0026	.0116
Employee Engagement	Gen Y	Y/X	.08868***	.00323	.0804	.0970
		X/BB	.07694***	.00305	.0691	.0848
		BB	.06446***	.00293	.0569	.0720
	Y/X	Gen Y	-.08868***	.00323	-.0970	-.0804
		X/BB	-.01174***	.00212	-.0172	-.0063
		BB	-.02422***	.00195	-.0292	-.0192
	X/BB	Gen Y	-.07694***	.00305	-.0848	-.0691
		Y/X	.01174***	.00212	.0063	.0172
		BB	-.01248***	.00163	-.0167	-.0083
	BB	Gen Y	-.06446***	.00293	-.0720	-.0569



## APPENDIX J: SECOND EXCURSION ANALYSIS (2006-2013) SUPPORTING TABLES

**Table J1: Second Excursion Analysis (2006-2013) – Question 2e<sub>2</sub>: 2006 Levene's Test of Homogeneity of Variances**

Index	Levene Statistic	df1	df2
Leadership and Knowledge Management	88.899***	3	217231
Results-Oriented Performance Culture	73.713***	3	217231
Talent Management	28.791***	3	217232
Job Satisfaction	18.258***	3	217230
Global Satisfaction	55.881***	3	217228
Employee Engagement	105.655***	3	217232
***p < .001			

**Table J2: Second Excursion Analysis (2006-2013) – Question 2e<sub>2</sub>: 2006 Welch's ANOVA**

Index	Statistic	df1	df2
Leadership and Knowledge Management	102.579***	3	36852.063
Results-Oriented Performance Culture	23.755***	3	36793.403
Talent Management	52.171***	3	36627.295
Job Satisfaction	53.061***	3	36449.483
Global Satisfaction	2.789*	3	36670.072
Employee Engagement	28.231***	3	36879.510
*p < .05, ***p < .001			

**Table J3: Second Excursion Analysis (2006-2013) – Question 2e<sub>2</sub>: 2006 Descriptive Statistics**

Index and Generation		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
Leadership and Knowledge Management	Gen Y	8764	3.6219	.73157	.00781	3.6065	3.6372
	Gen X	31306	3.5021	.76097	.00430	3.4936	3.5105
	X/BB	70058	3.4757	.79124	.00299	3.4699	3.4816
	BB	107107	3.4944	.79875	.00244	3.4896	3.4992
	Total	217235	3.4946	.78885	.00169	3.4913	3.4979
Results-Oriented Performance Culture	Gen Y	8764	3.4635	.70733	.00756	3.4487	3.4783
	Gen X	31306	3.4132	.72877	.00412	3.4051	3.4212
	X/BB	70058	3.4099	.75407	.00285	3.4043	3.4155
	BB	107107	3.4323	.76416	.00233	3.4277	3.4369
	Total	217235	3.4236	.75378	.00162	3.4204	3.4268
Talent Management	Gen Y	8764	3.5915	.77276	.00825	3.5753	3.6076
	Gen X	31306	3.5215	.78267	.00442	3.5128	3.5301
	X/BB	70058	3.4883	.80341	.00304	3.4824	3.4943
	BB	107108	3.5004	.80838	.00247	3.4956	3.5053
	Total	217236	3.5032	.80197	.00172	3.4999	3.5066
Job Satisfaction	Gen Y	8764	3.6583	.73948	.00790	3.6428	3.6738
	Gen X	31306	3.7005	.72797	.00411	3.6924	3.7086
	X/BB	70057	3.7169	.73721	.00279	3.7114	3.7223
	BB	107107	3.7403	.74630	.00228	3.7358	3.7447
	Total	217234	3.7237	.74075	.00159	3.7206	3.7268
Global Satisfaction	Gen Y	8764	3.6250	.84810	.00906	3.6073	3.6428
	Gen X	31306	3.6090	.86400	.00488	3.5994	3.6186
	X/BB	70057	3.6026	.88267	.00333	3.5961	3.6091
	BB	107105	3.6124	.89684	.00274	3.6071	3.6178
	Total	217232	3.6093	.88569	.00190	3.6056	3.6130
Employee Engagement	Gen Y	8764	3.6549	.77507	.00828	3.6387	3.6711
	Gen X	31306	3.5891	.80684	.00456	3.5802	3.5980
	X/BB	70058	3.5741	.83818	.00317	3.5679	3.5803
	BB	107108	3.5890	.85109	.00260	3.5839	3.5941
	Total	217236	3.5869	.83785	.00180	3.5833	3.5904

**Table J4: Second Excursion Analysis (2006-2013) – Question 2e<sub>2</sub>: 2006 Post-Hoc Analysis**

Dependent Variable	Generation		Mean Difference	Std. Error	95% Confidence Interval	
					Lower Bound	Upper Bound
Leadership and Knowledge Management	Gen Y	Gen X	.11981***	.00892	.0969	.1427
		X/BB	.14613***	.00837	.1246	.1676
		BB	.12748***	.00819	.1064	.1485
	Gen X	Gen Y	-.11981***	.00892	-.1427	-.0969
		X/BB	.02633***	.00524	.0129	.0398
		BB	0.00767 (p=0.407)	.00495	-.0050	.0204
	X/BB	Gen Y	-.14613***	.00837	-.1676	-.1246
		Gen X	-.02633***	.00524	-.0398	-.0129
		BB	-.01866***	.00386	-.0286	-.0087
	BB	Gen Y	-.12748***	.00819	-.1485	-.1064
		Gen X	-0.00767 (p=0.407)	.00495	-.0204	.0050
		X/BB	.01866***	.00386	.0087	.0286
Results-Oriented Performance Culture	Gen Y	Gen X	.05030***	.00861	.0282	.0724
		X/BB	.05355***	.00807	.0328	.0743
		BB	.03115***	.00791	.0108	.0515
	Gen X	Gen Y	-.05030***	.00861	-.0724	-.0282
		X/BB	0.00325 (p=0.916)	.00501	-.0096	.0161
		BB	-.01915***	.00473	-.0313	-.0070
	X/BB	Gen Y	-.05355***	.00807	-.0743	-.0328
		Gen X	-0.00325 (p=0.916)	.00501	-.0161	.0096

		BB	-.02240***	.00368	-.0319	-.0129
	BB	Gen Y	-.03115***	.00791	-.0515	-.0108
		Gen X	.01915***	.00473	.0070	.0313
		X/BB	.02240***	.00368	.0129	.0319
Talent Management	Gen Y	Gen X	.07000***	.00937	.0459	.0941
		X/BB	.10312***	.00879	.0805	.1257
		BB	.09104***	.00862	.0689	.1132
	Gen X	Gen Y	-.07000***	.00937	-.0941	-.0459
		X/BB	.03312***	.00536	.0193	.0469
		BB	.02104***	.00507	.0080	.0341
	X/BB	Gen Y	-.10312***	.00879	-.1257	-.0805
		Gen X	-.03312***	.00536	-.0469	-.0193
		BB	-.01208*	.00391	-.0221	-.0020
	BB	Gen Y	-.09104***	.00862	-.1132	-.0689
		Gen X	-.02104***	.00507	-.0341	-.0080
		X/BB	.01208*	.00391	.0020	.0221
Job Satisfaction	Gen Y	Gen X	-.04219***	.00891	-.0651	-.0193
		X/BB	-.05859***	.00838	-.0801	-.0371
		BB	-.08198***	.00822	-.1031	-.0609
	Gen X	Gen Y	.04219***	.00891	.0193	.0651
		X/BB	-.01640*	.00497	-.0292	-.0036
		BB	-.03979***	.00470	-.0519	-.0277
	X/BB	Gen Y	.05859***	.00838	.0371	.0801
		Gen X	.01640*	.00497	.0036	.0292
		BB	-.02339***	.00360	-.0326	-.0141

	BB	Gen Y	.08198***	.00822	.0609	.1031
		Gen X	.03979***	.00470	.0277	.0519
		X/BB	.02339***	.00360	.0141	.0326
Global Satisfaction	Gen Y	Gen X	0.01606 (p=0.402)	.01029	-.0104	.0425
		X/BB	0.02245 (p=0.092)	.00965	-.0024	.0472
		BB	0.01262 (p=0.542)	.00946	-.0117	.0369
	Gen X	Gen Y	-0.01606 (p=0.402)	.01029	-.0425	.0104
		X/BB	0.00639 (p=0.702)	.00591	-.0088	.0216
		BB	-0.00344 (p=0.927)	.00560	-.0178	.0109
	X/BB	Gen Y	-0.02245 (p=0.092)	.00965	-.0472	.0024
		Gen X	-0.00639 (p=0.702)	.00591	-.0216	.0088
		BB	-0.00983 (p=0.103)	.00432	-.0209	.0013
	BB	Gen Y	-0.01262 (p=0.542)	.00946	-.0369	.0117
		Gen X	0.00344 (p=0.927)	.00560	-.0109	.0178
		X/BB	0.00983 (p=0.103)	.00432	-.0013	.0209
Employee Engagement	Gen Y	Gen X	.06579***	.00945	.0415	.0901
		X/BB	.08082***	.00886	.0580	.1036
		BB	.06589***	.00868	.0436	.0882
	Gen X	Gen Y	-.06579***	.00945	-.0901	-.0415
		X/BB	.01503*	.00555	.0008	.0293
		BB	0.0001 (p=1.00)	.00525	-.0134	.0136
	X/BB	Gen Y	-.08082***	.00886	-.1036	-.0580
		Gen X	-.01503*	.00555	-.0293	-.0008
		BB	-.01494*	.00410	-.0255	-.0044
	BB	Gen Y	-.06589***	.00868	-.0882	-.0436

		Gen X	-0.0001 (p=1.00)	.00525	-.0136	.0134
		X/BB	.01494*	.00410	.0044	.0255

**Table J5: Second Excursion Analysis (2006-2013) – Question 2e<sub>2</sub>: 2008 Levene's Test of Homogeneity of Variances**

Index	Levene Statistic	df1	df2
Leadership and Knowledge Management	81.279***	3	208944
Results-Oriented Performance Culture	51.721***	3	208944
Talent Management	15.524***	3	208944
Job Satisfaction	4.118*	3	208944
Global Satisfaction	41.039***	3	208941
Employee Engagement	81.401***	3	208944
*p < .05, ***p < .001			

**Table J6: Second Excursion Analysis (2006-2013) – Question 2e<sub>2</sub>: 2008 Welch's ANOVA**

Index	Statistic	df1	df2
Leadership and Knowledge Management	105.168***	3	36615.038
Results-Oriented Performance Culture	20.519***	3	36540.954
Talent Management	41.558***	3	36341.467
Job Satisfaction	41.951*	3	36155.355
Global Satisfaction	3.434***	3	36416.904
Employee Engagement	32.400***	3	36614.884
*p < .05, ***p < .001			

**Table J7: Second Excursion Analysis (2006-2013) – Question 2e<sub>2</sub>: 2008 Descriptive Statistics**

Index and Generation		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
Leadership and Knowledge Management	Gen Y	8858	3.6636	.73937	.00786	3.6482	3.6790
	Y/X	29383	3.5287	.78522	.00458	3.5197	3.5377
	X/BB	64123	3.5188	.80822	.00319	3.5126	3.5251
	BB	106584	3.5204	.81197	.00249	3.5155	3.5253
	Total	208948	3.5272	.80466	.00176	3.5237	3.5306
Results-Oriented Performance Culture	Gen Y	8858	3.4901	.72949	.00775	3.4749	3.5053
	Y/X	29383	3.4203	.76324	.00445	3.4116	3.4290
	X/BB	64123	3.4392	.78174	.00309	3.4331	3.4452
	BB	106584	3.4408	.79002	.00242	3.4361	3.4455
	Total	208948	3.4395	.78137	.00171	3.4362	3.4429
Talent Management	Gen Y	8858	3.6232	.77907	.00828	3.6070	3.6394
	Y/X	29383	3.5358	.80948	.00472	3.5265	3.5450
	X/BB	64123	3.5342	.81364	.00321	3.5279	3.5405
	BB	106584	3.5267	.81649	.00250	3.5218	3.5316
	Total	208948	3.5344	.81330	.00178	3.5309	3.5378
Job Satisfaction	Gen Y	8858	3.6885	.74486	.00791	3.6730	3.7040
	Y/X	29383	3.7139	.74406	.00434	3.7054	3.7224
	X/BB	64123	3.7502	.74351	.00294	3.7444	3.7559
	BB	106584	3.7554	.74943	.00230	3.7509	3.7599
	Total	208948	3.7451	.74689	.00163	3.7419	3.7483
Global Satisfaction	Gen Y	8858	3.6555	.85384	.00907	3.6378	3.6733
	Y/X	29383	3.6247	.88373	.00516	3.6146	3.6348
	X/BB	64122	3.6390	.89220	.00352	3.6320	3.6459
	BB	106582	3.6348	.90588	.00277	3.6294	3.6402
	Total	208945	3.6355	.89646	.00196	3.6317	3.6394
Employee Engagement	Gen Y	8858	3.6912	.78481	.00834	3.6749	3.7076
	Y/X	29383	3.6026	.83246	.00486	3.5931	3.6122
	X/BB	64123	3.6082	.85204	.00336	3.6016	3.6148
	BB	106584	3.6083	.86296	.00264	3.6031	3.6135
	Total	208948	3.6110	.85235	.00186	3.6073	3.6146

**Table J8: Second Excursion Analysis (2006-2013) – Question 2e<sub>2</sub>: 2008 Post-Hoc Analysis**

Index	Generation		Mean Difference	Std. Error	95% Confidence Interval	
					Lower Bound	Upper Bound
Leadership and Knowledge Management	Gen Y	Y/X	.13491***	.00909	.1115	.1583
		X/BB	.14476***	.00848	.1230	.1666
		BB	.14320***	.00824	.1220	.1644
	Y/X	Gen Y	-.13491***	.00909	-.1583	-.1115
		X/BB	0.00985 (p=0.29)	.00558	-.0045	.0242
		BB	0.00829 (p=0.384)	.00521	-.0051	.0217
	X/BB	Gen Y	-.14476***	.00848	-.1666	-.1230
		Y/X	-0.00985 (p=0.29)	.00558	-.0242	.0045
		BB	-0.00156 (p=0.98)	.00405	-.0120	.0088
	BB	Gen Y	-.14320***	.00824	-.1644	-.1220
		Y/X	-0.00829 (p=0.384)	.00521	-.0217	.0051
		X/BB	0.00156 (p=0.98)	.00405	-.0088	.0120
Results-Oriented Performance Culture	Gen Y	Y/X	.06983***	.00894	.0469	.0928
		X/BB	.05095***	.00834	.0295	.0724
		BB	.04932***	.00812	.0285	.0702
	Y/X	Gen Y	-.06983***	.00894	-.0928	-.0469
		X/BB	-.01888*	.00542	-.0328	-.0050
		BB	-.02051***	.00507	-.0335	-.0075
	X/BB	Gen Y	-.05095***	.00834	-.0724	-.0295
		Y/X	.01888*	.00542	.0050	.0328
		BB	-0.00163 (p=0.976)	.00392	-.0117	.0084

	BB	Gen Y	-.04932***	.00812	-.0702	-.0285
		Y/X	.02051***	.00507	.0075	.0335
		X/BB	0.00163 (p=0.976)	.00392	-.0084	.0117
Talent Management	Gen Y	Y/X	.08743***	.00953	.0629	.1119
		X/BB	.08902***	.00888	.0662	.1118
		BB	.09652***	.00865	.0743	.1187
	Y/X	Gen Y	-.08743***	.00953	-.1119	-.0629
		X/BB	0.0016 (p=0.992)	.00571	-.0131	.0163
		BB	0.0091 (p=0.322)	.00534	-.0046	.0228
	X/BB	Gen Y	-.08902***	.00888	-.1118	-.0662
		Y/X	-0.0016 (p=0.992)	.00571	-.0163	.0131
		BB	0.0075 (p=0.254)	.00407	-.0030	.0180
	BB	Gen Y	-.09652***	.00865	-.1187	-.0743
		Y/X	-0.0091 (p=0.322)	.00534	-.0228	.0046
		X/BB	-0.0075 (p=0.254)	.00407	-.0180	.0030
Job Satisfaction	Gen Y	Y/X	-.02533*	.00903	-.0485	-.0021
		X/BB	-.06166***	.00844	-.0833	-.0400
		BB	-.06683***	.00824	-.0880	-.0457
	Y/X	Gen Y	.02533*	.00903	.0021	.0485
		X/BB	-.03632***	.00524	-.0498	-.0229
		BB	-.04150***	.00491	-.0541	-.0289
	X/BB	Gen Y	.06166***	.00844	.0400	.0833
		Y/X	.03632***	.00524	.0229	.0498
		BB	-0.00517 (p=0.507)	.00373	-.0147	.0044
	BB	Gen Y	.06683***	.00824	.0457	.0880

		Y/X	.04150***	.00491	.0289	.0541
		X/BB	0.00517 (p=0.507)	.00373	-.0044	.0147
Global Satisfaction	Gen Y	Y/X	.03085*	.01043	.0040	.0577
		X/BB	0.01659 (p=0.321)	.00973	-.0084	.0416
		BB	0.02074 (p=0.127)	.00949	-.0036	.0451
	Y/X	Gen Y	-.03085*	.01043	-.0577	-.0040
		X/BB	-0.01427 (p=0.102)	.00624	-.0303	.0018
		BB	-0.01011 (p=0.309)	.00585	-.0252	.0049
	X/BB	Gen Y	-0.01659 (p=0.321)	.00973	-.0416	.0084
		Y/X	0.01427 (p=0.102)	.00624	-.0018	.0303
		BB	0.00416 (p=0.791)	.00448	-.0074	.0157
	BB	Gen Y	-0.02074 (p=0.127)	.00949	-.0451	.0036
		Y/X	0.01011 (p=0.309)	.00585	-.0049	.0252
		X/BB	-0.00416 (p=0.791)	.00448	-.0157	.0074
Employee Engagement	Gen Y	Y/X	.08860***	.00965	.0638	.1134
		X/BB	.08303***	.00899	.0599	.1061
		BB	.08295***	.00875	.0605	.1054
	Y/X	Gen Y	-.08860***	.00965	-.1134	-.0638
		X/BB	-0.00557 (p=0.782)	.00591	-.0208	.0096
		BB	-0.00564 (p=0.737)	.00553	-.0198	.0086
	X/BB	Gen Y	-.08303***	.00899	-.1061	-.0599
		Y/X	0.00557 (p=0.782)	.00591	-.0096	.0208
		BB	-0.00007 (p=1.00)	.00428	-.0111	.0109
	BB	Gen Y	-.08295***	.00875	-.1054	-.0605
		Y/X	0.00564 (p=0.737)	.00553	-.0086	.0198

		X/BB	0.00007 (p=1.00)	.00428	-.0109	.0111
*p < .05, ***p < .001						

**Table J9: Second Excursion Analysis (2006-2013) – Question 3e<sub>2</sub>: 2006 Levene's Test of Homogeneity of Variances**

Index	Levene Statistic	df1	df2
Leadership and Knowledge Management	365.214***	4	1898432
Results-Oriented Performance Culture	196.544***	4	1898438
Talent Management	243.577***	4	1898430
Job Satisfaction	78.140***	4	1898429
Global Satisfaction	75.718***	4	1898250
Employee Engagement	417.979***	4	1898437
***p < .001			

**Table J10: Second Excursion Analysis (2006-2013) – Question 3e<sub>2</sub>: 2006 Welch's ANOVA**

Index	Statistic	df1	df2
Leadership and Knowledge Management	665.837***	4	182850.795
Results-Oriented Performance Culture	305.544***	4	182866.712
Talent Management	312.813***	4	182771.973
Job Satisfaction	691.320***	4	181939.281
Global Satisfaction	71.552***	4	182347.500
Employee Engagement	361.853***	4	182863.640
***p < .001			

**Table J11: Second Excursion Analysis (2006-2013) – Question 3e<sub>2</sub>: 2006 Descriptive Statistics**

Index and Generation		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
Leadership & Knowledge Management	Gen Y	97638	3.6716	.75824	.00243	3.6668	3.6763
	Y/X	271331	3.5457	.79722	.00153	3.5427	3.5487
	Gen X	31306	3.5021	.76097	.00430	3.4936	3.5105
	X/BB	559773	3.5409	.81189	.00109	3.5388	3.5431
	BB	938389	3.5567	.80603	.00083	3.5551	3.5583
	Total	1898437	3.5555	.80391	.00058	3.5543	3.5566
Results-Oriented Performance Culture	Gen Y	97638	3.4448	.75972	.00243	3.4401	3.4496
	Y/X	271330	3.3643	.78495	.00151	3.3614	3.3673
	Gen X	31306	3.4132	.72877	.00412	3.4051	3.4212
	X/BB	559777	3.4046	.79092	.00106	3.4026	3.4067
	BB	938392	3.4177	.78985	.00082	3.4161	3.4193
	Total	1898443	3.4076	.78723	.00057	3.4064	3.4087
Talent Management	Gen Y	97638	3.5741	.80762	.00258	3.5691	3.5792
	Y/X	271332	3.4730	.84649	.00163	3.4698	3.4762
	Gen X	31306	3.5215	.78267	.00442	3.5128	3.5301
	X/BB	559773	3.4849	.84689	.00113	3.4827	3.4871
	BB	938386	3.4870	.83958	.00087	3.4853	3.4887
	Total	1898435	3.4894	.84047	.00061	3.4882	3.4906
Job Satisfaction	Gen Y	97637	3.6603	.76658	.00245	3.6555	3.6652
	Y/X	271332	3.6767	.76488	.00147	3.6738	3.6795
	Gen X	31306	3.7005	.72797	.00411	3.6924	3.7086
	X/BB	559773	3.7313	.75493	.00101	3.7293	3.7332
	BB	938386	3.7488	.74791	.00077	3.7473	3.7503
	Total	1898434	3.7280	.75363	.00055	3.7269	3.7291
Global Satisfaction	Gen Y	97620	3.6616	.88187	.00282	3.6561	3.6671
	Y/X	271310	3.6204	.90058	.00173	3.6170	3.6238
	Gen X	31306	3.6090	.86400	.00488	3.5994	3.6186
	X/BB	559715	3.6409	.90042	.00120	3.6385	3.6432
	BB	938304	3.6475	.89944	.00093	3.6457	3.6493
	Total	1898255	3.6418	.89849	.00065	3.6405	3.6430
Employee Engagement	Gen Y	97638	3.7617	.78192	.00250	3.7568	3.7666
	Y/X	271332	3.6828	.82820	.00159	3.6797	3.6859
	Gen X	31306	3.5891	.80684	.00456	3.5802	3.5980

	X/BB	559776	3.6770	.84768	.00113	3.6748	3.6792
	BB	938390	3.6899	.84448	.00087	3.6881	3.6916
	Total	1898442	3.6871	.83968	.00061	3.6859	3.6883

**Table J12: Second Excursion Analysis (2006-2013) – Question 3e<sub>2</sub>: 2006 Post-Hoc Analysis**

Index	Generation		Mean Difference	Std. Error	95% Confidence Interval	
					Lower Bound	Upper Bound
Leadership & Knowledge Management	Gen Y	Y/X	.12584***	.00287	.1180	.1337
		Gen X	.16949***	.00494	.1560	.1830
		X/BB	.13061***	.00266	.1234	.1379
		BB	.11485***	.00257	.1079	.1219
	Y/X	Gen Y	-.12584***	.00287	-.1337	-.1180
		Gen X	.04365***	.00457	.0312	.0561
		X/BB	0.00477 (p=0.081)	.00188	-.0003	.0099
		BB	-.01099***	.00174	-.0157	-.0062
	Gen X	Gen Y	-.16949***	.00494	-.1830	-.1560
		Y/X	-.04365***	.00457	-.0561	-.0312
		X/BB	-.03888***	.00444	-.0510	-.0268
		BB	-.05464***	.00438	-.0666	-.0427
	X/BB	Gen Y	-.13061***	.00266	-.1379	-.1234
		Y/X	-0.00477 (p=0.081)	.00188	-.0099	.0003
		Gen X	.03888***	.00444	.0268	.0510
		BB	-.01576***	.00137	-.0195	-.0120

	BB	Gen Y	-.11485***	.00257	-.1219	-.1079
		Y/X	.01099***	.00174	.0062	.0157
		Gen X	.05464***	.00438	.0427	.0666
		X/BB	.01576***	.00137	.0120	.0195
Results-Oriented Performance Culture	Gen Y	Y/X	.08047***	.00286	.0727	.0883
		Gen X	.03165***	.00478	.0186	.0447
		X/BB	.04018***	.00265	.0329	.0474
		BB	.02709***	.00256	.0201	.0341
	Y/X	Gen Y	-.08047***	.00286	-.0883	-.0727
		Gen X	-.04882***	.00439	-.0608	-.0369
		X/BB	-.04029***	.00184	-.0453	-.0353
		BB	-.05338***	.00171	-.0581	-.0487
	Gen X	Gen Y	-.03165***	.00478	-.0447	-.0186
		Y/X	.04882***	.00439	.0369	.0608
		X/BB	0.00853 (p=0.263)	.00425	-.0031	.0201
		BB	-0.00456 (p=0.814)	.00420	-.0160	.0069
	X/BB	Gen Y	-.04018***	.00265	-.0474	-.0329
		Y/X	.04029***	.00184	.0353	.0453
		Gen X	-0.00853 (p=0.263)	.00425	-.0201	.0031
		BB	-.01309***	.00134	-.0167	-.0094
	BB	Gen Y	-.02709***	.00256	-.0341	-.0201
		Y/X	.05338***	.00171	.0487	.0581
		Gen X	0.00456 (p=0.814)	.00420	-.0069	.0160
		X/BB	.01309***	.00134	.0094	.0167
Talent Management	Gen Y	Y/X	.10112***	.00305	.0928	.1094

		Gen X	.05266***	.00512	.0387	.0666
		X/BB	.08923***	.00282	.0815	.0969
		BB	.08708***	.00273	.0796	.0945
	Y/X	Gen Y	-.10112***	.00305	-.1094	-.0928
		Gen X	-.04846***	.00471	-.0613	-.0356
		X/BB	-.01189***	.00198	-.0173	-.0065
		BB	-.01403***	.00184	-.0191	-.0090
	Gen X	Gen Y	-.05266***	.00512	-.0666	-.0387
		Y/X	.04846***	.00471	.0356	.0613
		X/BB	.03657***	.00457	.0241	.0490
		BB	.03442***	.00451	.0221	.0467
	X/BB	Gen Y	-.08923***	.00282	-.0969	-.0815
		Y/X	.01189***	.00198	.0065	.0173
		Gen X	-.03657***	.00457	-.0490	-.0241
		BB	-0.00215 (p=0.558)	.00143	-.0060	.0017
	BB	Gen Y	-.08708***	.00273	-.0945	-.0796
		Y/X	.01403***	.00184	.0090	.0191
		Gen X	-.03442***	.00451	-.0467	-.0221
		X/BB	0.00215 (p=0.558)	.00143	-.0017	.0060
Job Satisfaction	Gen Y	Y/X	-.01631***	.00286	-.0241	-.0085
		Gen X	-.04014***	.00479	-.0532	-.0271
		X/BB	-.07092***	.00265	-.0782	-.0637
		BB	-.08848***	.00257	-.0955	-.0815
	Y/X	Gen Y	.01631***	.00286	.0085	.0241
		Gen X	-.02383***	.00437	-.0357	-.0119

		X/BB	-.05460***	.00178	-.0595	-.0497
		BB	-.07217***	.00166	-.0767	-.0676
	Gen X	Gen Y	.04014***	.00479	.0271	.0532
		Y/X	.02383***	.00437	.0119	.0357
		X/BB	-.03077***	.00424	-.0423	-.0192
		BB	-.04834***	.00419	-.0598	-.0369
	X/BB	Gen Y	.07092***	.00265	.0637	.0782
		Y/X	.05460***	.00178	.0497	.0595
		Gen X	.03077***	.00424	.0192	.0423
		BB	-.01757***	.00127	-.0210	-.0141
	BB	Gen Y	.08848***	.00257	.0815	.0955
		Y/X	.07217***	.00166	.0676	.0767
		Gen X	.04834***	.00419	.0369	.0598
		X/BB	.01757***	.00127	.0141	.0210
Global Satisfaction	Gen Y	Y/X	.04123***	.00331	.0322	.0503
		Gen X	.05262***	.00564	.0372	.0680
		X/BB	.02075***	.00307	.0124	.0291
		BB	.01410***	.00297	.0060	.0222
	Y/X	Gen Y	-.04123***	.00331	-.0503	-.0322
		Gen X	0.01139 (p=0.18)	.00518	-.0027	.0255
		X/BB	-.02048***	.00211	-.0262	-.0147
		BB	-.02712***	.00196	-.0325	-.0218
	Gen X	Gen Y	-.05262***	.00564	-.0680	-.0372
		Y/X	-0.01139 (p=0.18)	.00518	-.0255	.0027
		X/BB	-.03187***	.00503	-.0456	-.0182

	X/BB	BB	-.03852***	.00497	-.0521	-.0250
		Gen Y	-.02075***	.00307	-.0291	-.0124
		Y/X	.02048***	.00211	.0147	.0262
		Gen X	.03187***	.00503	.0182	.0456
		BB	-.00664***	.00152	-.0108	-.0025
	BB	Gen Y	-.01410***	.00297	-.0222	-.0060
		Y/X	.02712***	.00196	.0218	.0325
		Gen X	.03852***	.00497	.0250	.0521
		X/BB	.00664***	.00152	.0025	.0108
Employee Engagement	Gen Y	Y/X	.07892***	.00296	.0708	.0870
		Gen X	.17261***	.00520	.1584	.1868
		X/BB	.08474***	.00275	.0772	.0922
		BB	.07186***	.00265	.0646	.0791
	Y/X	Gen Y	-.07892***	.00296	-.0870	-.0708
		Gen X	.09369***	.00483	.0805	.1069
		X/BB	.00582*	.00195	.0005	.0111
		BB	-.00706*	.00181	-.0120	-.0021
	Gen X	Gen Y	-.17261***	.00520	-.1868	-.1584
		Y/X	-.09369***	.00483	-.1069	-.0805
		X/BB	-.08787***	.00470	-.1007	-.0751
		BB	-.10075***	.00464	-.1134	-.0881
	X/BB	Gen Y	-.08474***	.00275	-.0922	-.0772
		Y/X	-.00582*	.00195	-.0111	-.0005
		Gen X	.08787***	.00470	.0751	.1007
		BB	-.01288***	.00143	-.0168	-.0090



## VITA

**Ian N. Barford**  
ian.barford@navy.mil

### **EDUCATION**

<b>PhD</b>	<b>Engineering Management</b>	Old Dominion University Department of Engineering Management and Systems Engineering 2101 Engineering Systems Building Norfolk, VA 23529	[12/14]
<b>MS</b>	<b>Systems Engineering</b>	Naval Postgraduate School	[9/06]
<b>BS</b>	<b>Electrical Engineering</b>	Ohio State University	[12/02]

### **PUBLICATIONS**

- Barford, I. and Hester, P. (2011, March/ April), "Analyzing Generation Y Workforce Motivation", Defense AT&L, pp. 36-40.
- Barford, I. and Hester, P. (2011), "Analysis of Generation Y Workforce Motivation Using Multi-Attribute Utility Theory", Defense Acquisition Research Journal, Vol. 18. No. 1, pp. 64-77.

### **PROFESSIONAL EXPERIENCE**

<b>Systems Engineer</b> (NAVSEA Virginia Beach, VA)	[10/14 – Present]
- Investigate new technology for next generation radars	
<b>Rotating Radars T&amp;E Program Manager</b> (NAVSEA Program Office, DC)	[10/14 – Present]
- Consolidate and report T&E activities for nine rotating radars	
<b>NSWC Strategic Objectives Lead</b> (NAVSEA Virginia Beach, VA)	[12/13 – Present]
- Evaluate organizational performance and lead cost reduction efforts	
<b>SPS-48 IPT Lead</b> (NAVSEA Virginia Beach, VA)	[3/14 – 10/14]
- Provided authoritative input on program's risk management, executable architecture, and capability mapping strategies	
<b>Lead Test Engineer   Analyst</b> (COMOPTEVFOR Norfolk, VA)	[11/11 – 11/13]
- Identified test requirements, developed T&E plans, analyzed real-time test data/ post-test results, determined if objectives were met, and presented recommendations for system design modifications based on analyzed data	
<b>SPS-74 Integrated Product Team Lead</b> (NAVSEA Virginia Beach, VA)	[3/10 – 11/11]
- Provided authoritative input on program's risk management, executable architecture, and capability mapping strategies	
<b>SPS-74 Test Director   T&amp;E Team Lead</b> (NAVSEA Virginia Beach, VA)	[9/06 – 3/10]
- Analyzed system design technical engineering studies and provided risk recommendations to the Program Office	
<b>DDG-1000 Engineer</b> (NAVSEA Virginia Beach, VA   Boston, MA)	[6/05 – 9/06]
- Analyzed cost and schedule data and presented findings	
<b>Program Office Rotation</b> (NAVSEA Program Office, DC)	[7/04 – 6/05]
- Prepared Task Planning Sheets for two radar program's yearly budget requests	
<b>Surface Search Electrical Engineer</b> (NAVSEA Virginia Beach, VA)	[1/03 – 7/04]
- Collected and cataloged software and hardware failure data on radar systems	