THE KOREAN EMPLOYABILITY SKILLS ASSESSMENT AND WORK ETHIC DIFFERENCES BETWEEN KOREAN WOMEN AND MEN AND AMONG GENERATIONS

by

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(Under the Direction of Roger B. Hill)

ABSTRACT

The purpose of this study was to examine the construct of work ethic as measured by a Korean translation of the Employability Skills Assessment (KESA) testing the construct validity and reliabilities of each subscale of the KESA. The work ethic of Korean people was also compared using two independent variables, generation and gender. Participants were 450 Korean Baby Boomers (1955-1963), Generation X (1964-1981), and Millennials (1982-1999) in South Korea. The Employability Skills Assessment (ESA; Hill, 1995) consists of 23 brief statements using a 7-point Likert scale to assess work ethic. The KESA is a Korean version of the ESA developed to provide a research-based instrument and intended to enable Korean people to evaluate their work ethic. After factor analytic procedures, including a principal component analysis (PCA), a maximum likelihood (ML) and a principal axis factoring (PAF) using the varimax orthogonal rotation method were performed, a five-factor model was selected and interpreted as a common factor model of the KESA. The factors extracted include: *진취성 (Initiative)* for Factor 1, *대인관계기술 (Interpersonal Skills)* for Factor 2, *신뢰성 (Dependability)* for Factor 3, *사려깊음 (Thoughtfulness)* for Factor 4, and *부정적 문항 (Reversed Items)* for Factor

5. Reliability coefficients of each factor of the KESA were calculated using Cronbach's alpha. A MANOVA was performed to compare the work ethic of Korean people between women and men and three generations. The results indicated that there were no statistically significant differences in scores for the work ethic subscales of the KESA between Korean women and men. Also, there were no statistically significant effects of the interaction between gender and generation on the first four subscales of work ethic except the fifth factor, 부정적 문항 (reversed items). However, there were statistically significant differences for generation on the three subscales of 진취성 (initiative), 신뢰성 (dependability) and 부정적 문항 (reversed items) as measured by the KESA in South Korea.

INDEX WORDS: Work ethic, Exploratory factor analysis, Cultural diversity, South Korean workforce, Korean Baby Boomers, Korean Generation X, Korean Millennials, MANOVA.

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DEDICATION

This study is dedicated to my family: Dr. and Reverend Soonseung Hong, my husband, who is my best supporter; Yerahm and Yehyun, my daughter and son, who are my best gifts from God; and Gisoo Jang, my mother, who was a wonderful mother and a Christian and now is in the Heaven.

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CHAPTER 1

INTRODUCTION

The world has become a global village. Advances in transportation systems and communication technology in the twenty-first century have accelerated globalization faster than ever. The process of globalization has made nations around the world become interdependent on one another in so far as they are interconnected economically, politically, culturally, and environmentally (Eriksen, 2014; Rojewski, 2004; Steger; 2013). Global issues such as climate change, financial crises, terrorism, infusion of computer viruses, and shortages of energy resources can no longer be solved by a single nation or state alone (Eriksen, 2014).

The International Monetary Fund (IMF) described globalization as two phenomena: the movement of a small, but growing number of workers who travel around the world trying to find better working conditions, and the integral role and rapid spread of knowledge and technology in production, management, and economic policies (IMF, 2000). As globalization intensifies the interdependence of international markets and extends collaboration and cooperation within and between countries, understanding between different people groups becomes increasingly important (Salt, Cervero, & Herod, 2000). Friedman (1999) advised that for individuals as well as countries, finding a healthy balance between preserving a sense of identity, home and community, and doing what it takes to succeed is a good strategy for surviving in a globalized world.

As economies have become more globally interconnected, more employees have engaged in global employment and multi-cultural work environments. Along with globalization, robotic production, automated customer services, distant learning and the Internet have brought rapid

changes in the workplace and impacted the content and direction of workforce education and development efforts in countries around the world. Some core characteristics of the global economy are: (a) manufacturing shifts "from high volume mass production to high value production" (Rojewski, 2004, p. 4); (b) the globalization of business markets causing substantial increases in competition for labor and products, and need for workers with innovative and creative skills; (c) importance of information management skills, leadership and teamwork; and (e) competition for efficiency and productivity (Rojewski, 2004; Stogdill, 1974). Soft skills such as work ethic as well as academic and technology skills are emphasized in order for workers to have steady employment in the globalized world.

Since workers with a strong work ethic can bring higher productivity and enhance profitability, employers use clues to find workers with a strong work ethic or positive work ethic when they search for new employees (Huang & Capelli, 2007). A strong work ethic is emphasized as one of the most important factors for administrative positions (Flynn, 1994). As one of the properties of workforce readiness, work ethic should be seen as a global issue. Employers still regard a strong or positive work ethic as an important asset and they seek workers with a strong work ethic (Hill & Fouts, 2005; Robinson, 2000).

Work ethic as a part of employability skills is repeatedly listed as something needed for job success (Hill & Petty, 1995). Work ethic or positive work ethic is emphasized as an essential skill for preparing for work in the twenty-first century in the global job markets as well as regional or local job markets (Rojewski & Hill, 2014). Hill and Petty (1995) defined work ethic as "a cultural norm that advocates being personally accountable and responsible for the work that one does and is based on a belief that work has intrinsic value" (p. 60). Hill (2004) included three attributes as work ethic components: initiative, interpersonal skills, and being dependable.

Initiative in the workplace can be described as characteristics which would facilitate "moving up the ladder" (Petty & Hill, 2005, p. 8) in a job and not being satisfied with status quo performance. Words such as independent, efficient, effective, persistent, productive, and persevering are some descriptive words for initiative in a job. Initiative is regarded as a key characteristic influencing productivity and success. Interpersonal skills can be described as personal attributes that build good relationships among workers and contribute to a positive job performance in a setting where cooperation is emphasized. Interpersonal skills include descriptive words such as “appreciative, likeable, hardworking, cooperative, cheerful, devoted, and courteous” (Petty & Hill, 2005, p. 9). Being dependable represents work ethic characteristics of the implicit agreement to perform certain functions at work. The combined meaning involves at least fulfilling the minimum expectations for satisfactory job performance but does not necessarily include going "beyond the call of duty" (Petty & Hill, 2005, p. 8). “Following directions and regulations, being careful, punctual and honest, and being reliable” (Petty & Hill, 2005, p. 9) are some characteristics of workers who are dependable in the workplace.

Description of Problem

As the world has become more interconnected and interdependent, South Korea is not an exception. Along with the globalization, South Korea has experienced rapid modernization over the past several decades, and there have been major cultural changes moving from the traditional Confucianism and Buddhism dominant culture to the modern and westernized culture (Lim et al., 2007). South Korean entrepreneurs move their plants to other countries or hire workers from other countries. More South Korean people seek jobs in international locations. The concept of work ethic has become important to Koreans. However, the concept of contemporary work ethic is still very new and recently developed in South Korea (Kim, 2007), while in Western cultures

work ethic has been studied and explained since the Protestant Reformation (Hill, 1992).

Few instruments for measuring South Korean work ethic have been developed. Most of the instruments were developed in Western countries and translated into Korean. A report prepared by the Korea Research Institute for Vocational Education and Training (KRIVET) reported a study using an instrument called *The Work Ethics Program* developed in the state of Georgia in the United States (Chang, 2007). Another instrument used in Korea is the Multidimensional Work Ethic Profile (MWEP) developed by Miller, Woehr, and Hudspeth (2002) and translated into Korean in 2007 by Lim et al (Lim et al., 2007). Also, the Occupational Work Ethic Inventory (OWEI), which was developed by Petty (Petty, 1992) and revised by Hill and Petty (Hill, 1992; Hill & Petty, 1995) in order to provide career and technology educators with research-based guidance for developing instructional materials and curriculum in order to help students gain employability skills, was translated into Korean and labeled the Korean Occupational Work Ethic Inventory (KOWEI) in 2007 by Kim (Kim, 2007). Kim (2007) used the KOWEI to measure work ethic of South Koreans by demographic variables such as gender, age, education levels, and employment. Her study included only a few Korean Millennials, and since the study was conducted, work ethic of South Koreans with demographic variables has not been researched.

Besides work ethic instruments, research focusing on measuring individuals' work ethic is sparse in South Korea, too. A study that KRIVET conducted in 2007 with the Work Ethics Program focused on asking participants to rate what attitudes or skills they think are most important in the workplace (Chang, 2007).

Despite the fact that the KOWEI is a good instrument to assess Korean workers' work ethic, some of instrument items of the KOWEI may not be easy to understand for Korean people

particularly those who did not graduate from upper secondary school as well as Korean adolescents since the KOWEI includes characters from the Chinese language. A Korean version of the Employability Skills Assessment (KESA) has the potential to be a better measure of work ethic in South Korea because the items will be more easily read and understood.

As the lifespan becomes longer in South Korea, people retire later in life. Therefore, different generations come together in the workplace. Kupperschmidt (2000) defined generations as distinguishable groups, which share years of birth and substantial life events at certain stages of development. In other words, the members of a generation experience historical and social events together (Wong et al., 2008). Many researchers agree that generations of employees in Western countries are broadly sorted into four: Veterans (1925-1944), Baby Boomers (1945-1964), Gen X (1965-1981), and Gen Y (or Millennials) (1982-2000) (Meriac, Woehr & Banister, 2010; Wong et al., 2008; Yu & Miller, 2003).

In South Korea, past studies on Korean generations agreed with defining Korean Baby Boomers as people who were born between 1955 and 1963 (e.g., Kang, 2013; Kim & Huh, 2007; Lee et al., 2012; Rim, 2013). However, for other generations, researchers could not agree with generational boundaries. Depending on the purposes of their studies, generational cohorts were divided in different ways. Lee et al., (2012) summarized past studies on generations and divided Korean people into Digital Natives and Digital Immigrants. Kim and Huh (2007) divided Korean people who were born between 1954 and 1999 into three generations: Baby Boomers, Generation X, and Generation Y, in their study on Korean lifestyle and consuming trends. Based on people' political orientations, Choi (2013) studied two generations: older generations and Generation 386, which was defined as those who were born in the 1960s, entered colleges in the 1980s and participated in many democratization movements against military governments in the

1980s. For studies on people's consuming propensity, academic trends, and technological changes, researchers used Generation X, but defining the years when Generation X were born was not consistent from study to study. For example, Turner and Mitchell (2009) in their study on education, occupation, and financial wealth defined Korean Generation X as people who were born between 1961 and 1981. Since the years when Generation 386 and Generation X overlapped from study to study, in this study the two generations were combined into one generation and called Generation X. Dividing generations in this way was similar to the studies that Turner and Mitchell (2009) and Kim and Huh (2007) did in their studies. In addition, dividing generations in this way could well distinguish Generation X from Generation Millennials in Korea. Past studies on Millennials (e.g., Kang, 2013; KRIVET, 2011; Lee et al., 2013; Parker, 2015; Rim, 2013), defined Korean Millennials as those who were born between 1981 and 1999, which was after Generation X and before the year 2000. Thus, in this study, Korean people were broadly divided into three generations: Korean Baby Boomers (1955-1963), Generation X (1964-1980), and Millennials (1981-1999).

Generational differences impact life style, worldview, attitudes to work, and work values in South Korea, and this has caused misunderstandings among different generations and sometimes conflicts in South Korea (Lee et al., 2013). In South Korea, Baby Boomers who were born in the years of 1955-1963 were in the age group between 52 and 60 in 2015. Korean Baby Boomers in August 2015 comprised 7,350,092 of the total population of 51,465,228. Baby Boomers were 14.28% of the total Korean population in the fiscal year of 2015 (Korean Ministry of the Interior, 2015). Males totaled 3,690,125 or 50.21% of the total Baby Boomers. Females numbered 3,659,967 or 49.79%. Baby Boomers were born after the Korean War and before laws implementing a birth control policy (KRIVET, 2011). The compositions of each generation are

presented in Table 1.1. The South Korean government enacted policies to encourage birth control starting in the 1960s and lasting until 1995 (National Museum of Korean Contemporary History, 2014; Rim 2013). These policies encouraged having no more than two children and were designed to reduce population growth.

Table 1.1

Compositions of Korean BB, GX, and ML

		BB	GX	ML
Total	51,465,228	7,350,092 (14.28%)	14,447,392 (20.07%)	13,114,401(25.48%)
Male	25,730,212	3,690,125 (50.21%)	7,349,406 (50.87%)	6,840,941 (52.16%)
Female	25,735,016	3,659,967 (49.79%)	7,097,986 (49.13%)	6,273,460 (47.84%)

Note. Data were based on the census that Korean Ministry of Interior provided in 2016. BB = Korean Baby Boomers, GX = Generation X, and ML = Millennials.

Korean researchers agree that Korean Baby Boomers have several common characteristics: they were born right after the Korean War (1950-1953) when Korea was an agricultural society (Lee et al., 2012), not enough electricity was available (Lee et al., 2012), people relied on candles and oil lanterns, when there were not many cars, and only special persons owned cars, and when people worked even on Sundays. They experienced the years of rapid economic growth serving their nation, and they entered the new digital world during the later years of their lives (Lee et al., 2012). Some of them were well educated; others were not (Lee et al., 2012). They led industrialization and development of democracy in Korea; they are considered the last generation that has responsibility for supporting both their parents and their children; and they are the first generation having to prepare for their life after retirement due to longer life expectancy and changes in norms regarding children caring for aging parents (KRIVET, 2011; Lee et al., 2013). They led economic growth in South Korea from the 1970s

through the 1990s and committed themselves to national growth in South Korea (National Museum of Korean Contemporary History, 2014).

Korean Generation X consists of persons born approximately between 1964 and 1980 and were in the age group between 35 years old and 51 years old in 2015. The total number of Generation X people was 14,447,392 or 20.07% of the total 51,465,228 of Korean population in the fiscal year of 2016. Generation X included 7,349,406 (50.87%) males and 7,097,986 (49.13%) females in Korea. Korean Generation X has several distinctive characteristics. First, they have never experienced any war in Korea. They dedicated their efforts to make Korea a more democratic society, initiating democratic movements against military governments in the 1980s and 1990s (Lee et al., 2012). They were educated in a very competitive society.

Korean Millennials were born between 1981 and 1999, and they were between 16 years old and 34 years old in 2015. The total number of Millennials was 13,114,401, comprising 25.48% of the total population. Millennials included 6,840,941 (52.16%) males and 6,273,460 (47.84%) females. Korean Millennials (also called Generation Y) are differently characterized from the other generations. As Millennials in western countries place more importance on status and flexibility in work (Cennamo & Gardner, 2008) Korean Millennials also show different attitudes toward society and work as compared to other generations. Millennials have grown up with technology and technology occupies a large portion of their time. They have lived with information technology and advanced devices such as computers, the Internet, mobile phones, and various social media that enabled networking with people from around the world. They are familiar with changes in technology and they do not expect job security (Lee et al., 2013; Wong et al., 2008). Millennials are seen as valuing skill development and enjoying the challenges of new opportunities in the workplace (Lee et al., 2013). They form different life styles, different

work values, and attitudes in workplace and society (Lee et al., 2013). They tend to show a high level of confidence, enjoy collective action, and like socializing. South Korean Millennials are also seen to value individualism (Lee et al., 2013).

In the absence of strategies to enhance understanding, the three generation groups may continually feel a generation gap while working together. More Millennials have entered and become part of the main workforce, but studies of Millennials related to work ethic have not been conducted. In addition, since new laws related to labor and work environment were passed in 2011, the labor structure has changed in many ways in South Korea. Women are participating in work more than ever. Another issue is that although more occupations have been created and the employment rate has increased, unemployment of young adults who are 24 to 29 years old has been a persistent problem in South Korea (Lee et al., 2013). A study of work ethic that examines different generations of Baby Boomers, Generation X, and Millennials together as well as men and women is needed.

Past studies related to the work ethic in western countries including America showed inconsistency regarding the relationship between work ethic and generations. Previous research in western countries indicated differences in work ethic by age groups (Harvell, 2009; Hill, 1997; Tang & Tzeng, 1992). Some studies have shown that Baby Boomers had a stronger work ethic, while Millennials had lower levels than older generations within individual work ethic dimensions measured (Callahan, 2008; Filipczak, 1994; Kupperschmidt, 2000; Ness et al., 2010). Joseph (2010), however, found that in contrast to American societal belief, there were not significant differences in work ethic among generational cohorts (Joseph, 2010).

Previous studies have also revealed differences in work ethic between men and women. Women scored higher than men on doing a job well and working hard (Cherrington, 1980).

Wayne (1989) found that women scored significantly higher than men for contemporary work values. Hill (1992) reported that women scored slightly higher than men on all the subscales of work ethic measured by the Occupational Work Ethic Inventory: interpersonal skills, initiative, and being dependable. A recent study examining the relationship between work ethic and gender conducted by Joseph (2010) with more than 100 respondents of each gender revealed that there were not significant differences in work ethic between men and women. Thus, in order to explain this inconsistency, more studies should be conducted.

In South Korea, Kim (2007) conducted a research study on Korean work ethic and showed that there were some differences in work ethic among different age groups (Kim, 2007). Kim (2007) also showed that there were differences in work ethic between women and men in South Korea (Kim, 2007). Thus, more studies need to be conducted on the level of work ethic among men and women as well as generations in order to help clarify this issue.

Lastly, when cross-cultural studies are conducted, instruments are sometimes translated from the original language that an instrument was developed in to another language. When this is done, it is appropriate to use factor analytic procedures to evaluate its psychometric properties such as construct validity and reliability. In some of the previous studies reviewed a principal component analysis (PCA) was employed in conducting an exploratory factor analysis (Kim, 2007; Lim et al., 2007; Miller, Woehr, & Hudspeth, 2002). However, even though the principal component analysis can provide guiding concepts, there are better techniques for completing a factor analysis. In addition, considering the subjective nature of factor analysis, providing the original correlation matrix used for extracting factors is critical in reporting factor analytic studies in order for other researchers to verify or do further studies, but some past studies related

to work ethic did not provide the original correlation matrix (Lim et al., 2007; Miller, Woehr, & Hudspeth, 2002).

Purpose Statement

The purpose of this study was to provide a Korean Employability Skills Assessment (KESA) by translating the Employability Skills Assessment (ESA; Hill, 1995) into Korean and then to use this instrument to compare the work ethic of South Korean Millennials, Generation X, and Baby Boomers and men and women in the South Korean workforce. The ESA is an alternative form of the Occupational Work Ethic Inventory (OWEI; Hill & Petty, 1995) and has three constructs: interpersonal skills, initiative, and dependability. An exploratory factor analysis was conducted to identify a common factor model that would be appropriate for interpreting the KESA. Next, the work ethic of South Koreans as measured by the KESA was examined by gender and generation. Then, participants from three generations of people in South Korea--Baby Boomers (1955-1963), Generation X (1964-1980) and Millennials (1981-1999) were compared based on the subscales of the KESA. Comparisons were made between South Korean men and women, and finally the interaction effect of gender and generation on the work ethic was investigated.

Research Questions

1. What constructs comprise the work ethic of South Koreans in South Korea as measured by the Korean Employability Skills Assessment (KESA)?
2. What is the work ethic of South Koreans as measured by the KESA?
3. Do differences exist in the work ethic between women and men and among Baby Boomers, Generation X, and Millennials in South Korea?

Theoretical Perspective

Bandura's (1989) social cognitive theory (SCT) provided a theoretical framework for understanding the dynamic of South Korean work ethic, where work ethic involves being personally responsible and accountable for one's work and a cultural norm imposes an intrinsic value on work (Hill & Petty, 1995; Petty & Hill, 1994; Hill & Fouts, 2005; Petty & Hill, 2005).

According to the triadic model of human agency (aka. reciprocal causation) of the social cognitive theory (Bandura, 2005), learning occurs by observing other people as models such as family members, teachers, coworkers, and friends. Individuals' internal beliefs and/or external behaviors can be shaped through these learnings. A person's behaviors can be varied depending on reinforcements or punishments from the circumstances. Bandura believed that these reinforcements are from the environment. The environment provides people with knowledge and models, people model by observing (Bandura, 2005). Bi-directionally, people in a society affect the environment and the environment impacts persons in the society. In addition, when a person's internal emotions and knowledge is considered, a person's behaviors are affected by his or her own emotions, knowledge, and past experiences as well (Bandura, 2005).

In terms of characteristics that affect a person's behaviors, self-efficacy and self-regulatory capabilities are important concepts in social cognitive theory. Self-efficacy can be defined as a person's beliefs about capabilities that he or she can do certain tasks and behaviors (Bandura, 1995). Self-regulation can be defined as capabilities people use to practice control over their motivations, and the way of thinking and behaving (Bandura, 2005). Based on their level of self-efficacy and self-regulatory capabilities, different behaviors externally expressed can be explained (Bandura, 2005). That is, the person, the behavior, and the environment can affect each other (Bandura, 2001, 2005). Those concepts of the triadic model of human agency,

self-efficacy, and self-regulatory agency help to explain the dynamics of work ethic. People's behaviors related to work ethic are influenced by different factors such as generation and gender within the different contexts of work life where different cultural expectations, different policies, different past experiences, and different people within the society were observed (Hill & Fouts, 2005; Kim, 2007).

Significance of Study

In the United States, many instruments for measuring work ethic have been developed and their validities and reliabilities have been examined. The attributes and behaviors measured have been based on Western cultures. In South Korea, however, few scientific scales for assessing work ethic have been developed and evaluated. This study resulted in development of another work ethic measurement to be used in South Korea. In addition, this study contributes to the research on work ethic constructs in South Korea.

Another contribution of the study is that employers, managers, and trainers of employees can use the results to better understand the work ethic of the three generations in South Korean: Baby Boomers, Generation X, and Millennials. Millennials have been steadily entering the workforce, so employers can use the results of this study when developing training materials to foster employees' work ethic in terms of initiative, interpersonal skills, dependability, and thoughtfulness. In addition, the three generations can better understand each other in terms of work attributes and behaviors in the workplace.

This study also helps readers to understand the work ethic of different genders: women and men in South Korea. This helps both employers and employees anticipate work behaviors. The results can be useful for work-based training and development.

This study provides job centers under the Ministry of Employment and Labor (MOEL) in

South Korea with another work ethic measurement that they can use to help jobseekers assess and understand their work ethic as a part of their employability skills. Jobseekers can use the results to develop specific work ethic behaviors.

Finally, this study provides a basis for future work ethic research in South Korea. A new instrument is now available to provide an accurate measure of work ethic attributes and it is appropriate for use with a wide spectrum of the population. Thus, this study can enable future cross-cultural researchers who want to conduct factor analysis with desirable factor analytic procedures in applied psychological studies.

CHAPTER 2

LITERATURE REVIEW

Globalization of the world is happening more quickly than ever due to more advanced communication systems and faster, cheaper, safer transportation. Economic globalization and the spread of information technology have been accelerated, making distance irrelevant (Eriksen, 2014). Now employees across the world can communicate, collaborate, and cooperate with one another in this global village.

Since the end of twentieth century and the beginning of the twenty-first century, ethical behaviors have declined in the workplace, as well as in the realms of entertainment, politics and government, and numerous other societal contexts (Hill, 2004). Hill (2004) made a list of attributes related to ethics recommended for emphasis in schools and other instructional settings including "integrity, responsibility, fairness, caring, initiative, interpersonal skills, and dependability" (Hill, 2004, p. 12) which were derived from many studies identifying universally acceptable moral values and from the literature on work ethic identifying attributes essential for success in a technical world (Hill, 2004).

In order to be employed in the globalized world, developing employability skills is a key preparation for employment in the twenty-first century. Employability skills generally include three categories: "basic academic skills, high order thinking skills, and personal qualities" (Luekitinan, 2014, p. 5). The state of Nevada published 21 standards for workplace readiness skills called 21 Employability Skills for Career Readiness (ESCR) standards: "(a) personal qualities and people skills; (b) professional knowledge and skills; and (c) technology knowledge and skills" (State of Nevada, 2012, p. 1). Particularly, personal qualities and people skills include

positive work ethic; “integrity; teamwork; self-representation; diversity awareness; conflict resolution; and creativity and resourcefulness” (State of Nevada, 2012, p. 1). Corporate Voices for Working Families, Partnership for 21st Century Skills, and Society for Human Resource Management have stated that along with the three skills of reading, writing and arithmetic, applied skills are very important to work readiness. Some applied skills include “(a) professionalism or work ethic; (b) oral and written communication; (c) teamwork and collaboration skills; and (d) critical thinking or problem-solving skills” (Casner-Lotto, 2006, p. 9).

Virginia career and technical education (CTE) resource center places demonstrating a positive work ethic as the first skill as 2014-2015 competency list of leadership (Virginia CTE Resource Center, 2014). The standards emphasize demonstrating proficiency in real-world soft skills. Bancino and Zevalkink (2007) address the need for broader skills, including soft skills, as part of the curriculum for preparing technical professionals. They define soft skills as “the cluster of personality traits, social graces, facility with language, personal habits, friendliness, and optimism that mark people to varying degrees, and soft skills complement hard skills, which are the technical requirements of a job” (Bancino & Zevalkink, 2007, p. 20). Bancino and Zevalkink (2007) also included communication skills; interpersonal skills; and leadership and teamwork skills as important soft skills (Bancino & Zevalkink, 2007). The U.S. Department of Labor's Office of Disability Employment Policy (ODEP) has described soft skills as the key to the success of young workers in the twenty-first century workplace (U.S. Department of Labor, 2014). Today, people often say that people get hired for their technical, academic skills, but they lose their jobs for lack of soft skills (WRS-ESCR; 2014).

Rojewski and Hill (2014) developed a framework called *the Framework for 21st Century Work Preparation*. The domains of the framework are: "(a) career navigation, (b) innovation, and (c) work ethic" (p. 145). Work ethic as a part of employability skills including "initiative, interpersonal skills, and being dependable" (p. 145) is considered an essential skill for preparing for employment in the twenty-first century workplace. Therefore, employees across nations associated with globalization should have a work ethic which international corporations can globally understand and accept so that they can be hired and maintain their jobs in the globalized world in the twenty-first century (Hill & Rojewski, 2014; Rojewski & Hill, 2014).

Hill and Fouts (2005) described work ethic as "a set of characteristics and attitudes" (p. 48) that are associated with an individual worker's beliefs about the importance and benefits of work. Huang and Capelli (2007) defined work ethic as "the ability to work hard independent of monitoring by employers or of reward" (p. 3). Miller, Woehr, and Hudspeth (2002) described work ethic as "a commitment to the value and importance of hard work" (p. 2). Nevada CTE Standards describes positive work ethic as "coming to work every day on time, a willingness to take direction, and motivation to accomplish the task at hand" (State of Nevada Department of Education, 2014, p. 6). Thus, work ethic can be defined as individuals' different behaviors, attitudes, feelings, and beliefs toward work which are shaped by learning from other people based on expectations of society and culture and their experiences in their society.

Historical Perspectives on Work and Work Ethic

In the contemporary cultures in South Korea as well as in Western cultures, doing a good job in the workplace is considered a good moral value (Hill, 1992, 1999; Hill & Fouts, 2005; Park & Hill, 2016). However, it was not the same until the Protestant Reformation occurred in

the Western society (Hill, 1992, 1999). Hill (1992) well described how work was seen in human history.

During the Classical Period, historically, Western society was significantly influenced by the Judeo-Christian belief system (Hill, 1992, 1999): "the Lord God created the man and put the man in the Garden of Eden to work it and take care of it" (The Holy Bible, NIV, 1984, Genesis 2:15). Due to the disobedience and ingratitude of Adam and Eve, however, the ground was cursed, and men had to painfully work to eat all the days of their lives (The Holy Bible, NIV, 1984, Genesis 3:17). Thus, the traditional Hebrews regarded work as a curse devised by God as a punishment (Rose, 1985; Hill, 1992, 1999).

The Greeks also viewed work as a curse using the Greek word "*ponos*, which meant sorrow, and manual labor was for slaves" (Hill, 1992, 1999, p. 1). Even mental labor, as well as physical labor, was disdained. The Romans adopted much of their belief system from the Greek culture, and they also thought that work was to be done by slaves (Hill, 1992, 1999). In the Roman society, freemen possessed wealth as a means "to reach the supreme ideal of life: man's independence of external things, self-sufficiency, and satisfaction with one's self" (Hill, 1992, 1999. p. 3). This Roman cultural norm spread out through most of the Europe, the Middle East, Egypt, and North Africa and greatly influenced Western society until the beginning of the Middle Age around the fourth century AD, when the Roman Empire collapsed (Hill, 1992, 1999).

Although the Roman Empire lost power, and the Middle Age began, which was from c400AD until c1400AD, the Christian belief system dominated European culture. The Christian thought about work was interwoven with Hebrew, Greek, and Roman themes. Work was

considered as a curse by God for man's original sin, but wealth was perceived as an opportunity to help the relatively less fortunate (Hill, 1992, 1999; Joseph, 2009).

In the medieval culture, social status was related to the types of work a person did (Hill, 1992, 1999; Joseph, 2009). During this time, the Catholic Church taught the system of divine law (Hill, 1992, 1999; Joseph, 2009). In addition, St. Thomas Aquinas developed a hierarchy of professions and trades regarding the work of the world (Hill, 1992, 1999; Joseph, 2009). Agriculture was ranked first, followed by the handicrafts and then commerce, while the work of the church was in a higher category (Hill, 1992, 1999; Joseph, 2009). It was the duty for each person to remain in his class, and pass on the family work from father to son, regarding a particular work course connected to the calling of God (Hill, 1992, 1999).

During the sixteenth century, the Protestant Reformation started and perspectives on work began to change as well (Hill, 1992, 1999). Marin Luther and John Calvin were the two key leaders of the Protestant Reformation. Luther disagreed with the Catholic Church, and according to Luther's beliefs, work was holy that God assigned each person as a sign of a calling; salvation was by God's grace; working diligently in each person's occupation was one way of serving God; and people were supposed to keep their occupations (Hill, 1992, 1999). Luther considered growing compiling wealth as sinful, disapproved of business as a calling, but he asserted that all vocations were equal with equal sacred dignity (Hill, 1992, 1999; Weber, 1904-1905, 2005).

John Calvin who was a French theologian developed the theological doctrine of predestination whereby salvation was pre-determined by God in order for people to inherit eternal life (Hill, 1992, 1999). A person could have a sense of the Elect based on his own personal encounters with God, but outwardly one possible sign whether a person was one of the

Elect was the person's life and deeds, and success in life (Hill, 1992, 1999). Calvin asserted that all men including the rich must work because working was God's will. Even after becoming wealthy, people must not lust or live easily, but earnings were to be reinvested over and over again through their continuous labor (Hill, 1992, 1999). He believed that hard work and frugality gave evidence of being chosen to have eternal life while idleness and the wasting of time could lead to condemnation (Hill, 1992, 1999). Calvin considered it appropriate that people sought an occupation which would bring the greatest earnings, which meant that people could abandon their family trade or profession, considering it as a religious duty (Hill, 1992, 1999). The Protestant Reformation formed new beliefs, new attitudes and new behaviors of people by freeing them from the negative view that work was something performed by slaves or cursed people (Hill, 1995; Miller, Woehr, & Hudspeth, 2002; Modrack, 2008).

By adopting Luther's interpretation of work and calling, and Calvin's doctrine of Predestination, Weber (1904, 1905, 2005) coined the term *Protestant ethic* explaining the new beliefs about work, and the development of capitalism in the western societies. According to Weber (1904, 1905, 2005), the Protestant Reformation, and the spread of Calvin's theology led to establishing the capitalist economic system. He insisted that the theological belief system came first and it caused changes in the economic structure (Weber, 1904, 1905, 2005). The Protestant ethic included diligence, punctuality, deferment of gratification, and the primacy of the work domain (Hill, 1992, 1999). The Protestant ethic spread throughout Europe and to America through the Protestant sects. Those sects include the English Puritans, the French Huguenots, and the Swiss and Dutch Reformed which subscribed to Calvinist theology. Attitudes and beliefs supporting hard work have become secularized and woven into Western cultural norms (Hill, 1992, 1999).

As America experienced the factory system, World War II, and the Industrial Revolution, cultural norms, expectations about work, and work ethic have changed. People began to regard work under the concept of public usefulness rather than a calling (Hill, 1992, 1999). Working hard was emphasized by economists in order for the country as well as an individual not to fall into poverty and decay. As a member of a society, people should be productive. Idleness was regarded as a disgrace (Hill, 1992, 1999).

Historical Perspectives on Work in South Korea

Even though East Asian countries including China, Hong Kong, Singapore, Taiwan, and South Korea historically formed their cultural norms based on different religions from Judeo-Christian dominated Western society, the social structure and perspectives on work and labor seem to have been similar. Many East Asian countries including South Korea were greatly affected by Confucian values (Kim & Park, 2003; Kim, 2007; Yeh & Xu, 2010).

Until the end of the Joseon Dynasty in 1897, Korean historical kingdoms had legally retained a class structure hierarchically divided into four basic classes besides the royal family: the landed gentry called yangban; chungin; sangmin or commoners; and chunmin (Kim, 2012; Seth, 2011). The yangban class was the privileged ruling class, like free men in Western society. They did not do manual labor but pursued dignity and scholarship (Kim, 2012; Seth, 2011). The yanban group held wealth and power through positions of office and tracts of land and slaves (Kim, 2012; Seth, 2011). They pursued scholarship and education for examinations needed to hold office by following the Confucian rituals (Kim, 2012; Seth, 2011). They regarded manual labor as for people in the lower class (Kim, 2012; Seth, 2011). Not all yangban people could hold official positions, and some suffered from poverty. However, they were not supposed to do manual labor to earn income. There are sayings that well describe this tradition (e.g., Yangban

people never swing their arms even though they are drowning in a river. Yanban people pick their teeth with a toothpick although they skip a meal because of being short of food).

Chungin consisted of technical specialists who passed some examinations. Sangmin was composed of three subgroups: peasant farmers, craftsmen, and merchants. Since Joseon had an agricultural economy, farmers were regarded as an important group of sangmin. Chunmin mostly consisted of slaves (Kim, 2012; Seth, 2011). This structure reflects the fact that Joseon stressed agriculture more than industry, and this trend remained until the eighteenth century when the Korean economy began to change to the modern structure. This social structure showed the hierarchical ranks of work: Sa (Scholars), Nong (farmers), Gong (handicraftsman), and Sang (commercial workers). The Confucian cultural norm placed a high value on pursuing education and gaining knowledge while people viewed commerce as a profession of greed and moral abasement (Kim & Park, 2003; Kim, 2007). Negative perspectives on work remained unchanged during Japan's colonial rule (1910-1945).

The yangban class became poor, and new rich groups of business people and merchants showed up and they bought yangban status. For example, yangban class in Daegu, a metro city in South Korea, increased from 9.2 % in the seventeenth century to 70.2 % in the 1800s (Seth, 2011). Some wars also gave slaves opportunities to become free. Finally, the class structure which had remained more than a millennium had an end at the beginning of the nineteenth century in Korea (Kim, 2012; Seth, 2011).

Despite the changes in the class structure, many Korean people still use the terms, from a yangban family, which is a respectful expression, and from a chunmin family, which indicates poor education, especially when they talk about etiquette or manners. This social structure has affected Korean people's job choices as well. Along with the high value of education and

scholarship of Confucianism, the privileges and influence on the society that the yangban class possessed have inspired Korean people to get higher education (Kim & Park, 2003). Confucian Values, Nationalism, and the Work Ethic in South Korea

Although Buddhism (around the 4th century), Catholicism (the 18th century), reformed churches (the 19th century), and other religions coexist in Korea, ethics and work ethic in Korea have been greatly affected by Confucian philosophy (Kim, 2007; Kim & Park, 2003). Confucianism was first introduced in Korea around the fourth century and became popular throughout the centuries since then. Confucianism has five principles: (a) There should be intimate relationships with love between parents and children; (b) There should be loyalty between the king and his subjects; (c) Husband and wife should be distinguished with respect; (d) There should be orders between the old and the young; and (e) There should be faith between friends (Kim, 2012; Kim & Park, 2003; Kim, 2007; Seth, 2011). Peace comes through self-discipline, caring family relations, and good governance (Kim & Park, 2003). Confucianism (later named neo-Confucianism) developed as the official philosophy and ideology in the Joseon Dynasty (1392-1897) and became deeply embedded in Korean society (Kim & Park, 2003; Kim, 2007). Confucian texts were the main subjects of a state examination to select government officials until the end of the Joseon Dynasty (Kim, 2012; Kim & Park, 2003; Kim, 2007). Along with the basic five principles, in the early Joseon Dynasty, three more fundamental principles were added: (a) The king should rule subjects; (b) Father should rule his family; and (c) Husband should rule his wife, and these additional principles provided good reasons to make a nation a kingdom, a family under a father, and predominance of men over women in the historical culture in Korea. These principles were promoted across the country in Joseon Dynasty (The Kingdom of Joseon:1392-1897). For example, in 1434, Sejong the Great, who was the fourth king of

Joseon Dynasty, asked his subjects to publish several books called *SamGangHangShilDo* (Illustrations of Behaviors of the Three Principles). These books consisted of illustrations of good examples and models of people who faithfully practiced and lived based on the three principles and added explanations or stories even poems. These books were published in both Chinese and Korean languages. Seong the Great supported this promotion so that all his people could learn through good models. Other kings after Sejong the Great continually promoted by publishing more series of editions.

Such values as diligence; education; loyalty to the nation, one's elders, and authority were believed morally ethical in Korea (Kim & Park, 2003; Kim, 2007). These Confucian values were adapted to forming work ethic in company cultures. "Domestic paternalism was transferred to company subordination, family loyalty to company loyalty, and diligence for self- education to working hard for one's workplace" (Kim, 2007, p. 21). Thus, Confucian ethics provided the ideological rationale for labor harmony and subordination to authority explaining how workers should work.

Just as Confucianism played a major part in the economic modernization in Japan, nationalism in South Korea served as the great example of Koreans' commitment to labor claiming why they should work (Seth, 2011). Korea was Japan's forced colony for 36 years (1910-1945), and underwent the Korean War (1950-1953) (Seth, 2011). Both Japan's colonizing of Korea and the Korean War led South Korea to severe poverty and chaos. Immediate withdrawals of all Japanese technicians, managers, and entrepreneurs from Korea caused production to cease in many factories (Kim, 2007). In addition, devastation from the Korean War left the Korean economy and society in total ruin. The situation can be compared to that of the American south right after the Civil War. Besides, South Korea was always under the constant

threat of communist aggression from North Korea and defense against the communist north was the national priority (Kim & Park, 2003).

Despite difficult conditions, people in South Korea undertook huge efforts to recover its economy. In the 1960s, the government under Mr. Park led South Korea to remarkable economic achievement as well as political stability for the next few decades (Kim, 2007). The government presented national goals such as a defense against the communist north, escape from poverty, and a strength of sovereignty, which formed Korean ethnic nationalism (Kim, 2007; Kim, 2012). The government led industrial labor to a national campaign making the idea of hard work a social obligation, patriotic duty and moral duty (Kim, 2007; Kim, 2012). The government stressed that hard work would bring Korean people, the Korean economy, and the country, economic prosperity and honor (Kim, 2007). The government and employers asked employees to sacrifice individuals' interests and endure low incomes, poor working conditions and overtime work with the slogans of overcoming national ills (Kim, 2007; Kim, 2012). The government promoted industry with a series of Five-Year Economic Development plans (1962-1976). Another national slogan was the New Village Movement (1970) which almost all Korean people participated in as they labored together on reforming houses, constructing roads, and planting trees (Kim, 2007; Kim, 2012; Seth, 2011). Thus, Confucian values and nationalism have greatly affected Korean work ethic creating a trainable, industrious workforce in South Korea.

However, the international oil shock in 1979, high inflation over many years, and large and growing foreign debts led South Korea to the International Monetary Fund (IMF) crisis in 1997 (Kim, 2012; Seth, 2011). Even though South Korea was freed from the IMF system in two years, the IMF crisis demanded South Korea to reform its economic structure, in which under the *Korea Inc*. system, economic growth had centered on the government-c*haebol* format (Kim,

2012; Seth, 2011, Kim, 2004). Korea's stock market and real estate markets were opened to foreign investment. Many companies were forced to close, merge, or restructure. Employees experienced layoffs, early honor retirements, and cuts. Unemployment rates rose from 2% to 8% after the IMF crisis. This environmental situation led South Koreans to adopt different values and beliefs toward work such as life-long education, the need for job training and education for new knowledge and skills, job transitions, early retirements, venturing jobs after retirement, and so on (Kim, 2004; Kim, 2012). The middle class decreased from 41% of the population in 1996 to 28% in 2007 (Kim, 2012). The gap between the poor and the rich became wider. Workers became more self-centered and money-oriented and were attracted to venture firms that promised more income (Kim, 2012; Seth, 2011). The South Korean economy has faced two critical challenges: labor disputes and foreign competition. Even though the government has made efforts to make the labor market more flexible as part of a U.S.-style neoliberal market economy, South Korea still has problems such as huge foreign debts, great income inequality, collusion between big business and government, and inflexible labor policy (Kim, 2012). These IMF effects led South Korean employees to new attitudes toward work. Most South Koreans began to be worried about their jobs, housing, child rearing, education, and retirement. Life-long employment was no longer guaranteed (Kim, 2004). Instead, concepts of self-development and personal asset management emerged.

Social Cognitive Theory

Social cognitive theory (SCT) provides a theoretical framework for understanding the contemporary South Korean work ethic where work ethic involves being personally responsible and accountable for one's work and a cultural norm that imposes an intrinsic value on work (Hill & Petty, 1995). Social cognitive theory was developed by Albert Bandura. Social cognitive

theory started as social learning theory (SLT) in the 1960s. Bandura added the cognitive dimension to SLT in the1980s. Social cognitive theory adopts an agentic perspective to self-development, adaptation, and change (Bandura, 2001). In this perspective, people organize, regulate, reflect themselves, and are proactive as contributors to their life environments and its products (Bandura, 2005).

Assumptions of Social Cognitive Theory

Social cognitive theory views learning as a change in mental structure that creates the potential to demonstrate different behaviors (Bandura, 1986; Omrod, 2004). Performance is a demonstration of learning, but not required for learning (Bandura, 1986). Social cognitive theory has five assumptions: (a) Learning occurs through observation; (b) Learning is also an internal behavior that may or may not be reflected in behavior; (c) People increasingly regulate themselves (aka. self-regulation); (d) Cognitive processes are involved in learning and motivation; and (e) External behaviors, various factors of a person, and the environment interact reciprocally with each other as determinants (Omrod, 2004).

Learning through Observation

The first assumption of the SCT is that people learn through observation. People observe models or other people doing things (Bandura, 1989). This assumption implies that a person can watch to learn rather than be actively engaged in a task to learn how to do the task. The processes of observational learning include "attention, retention, motor reproduction (aka. behavioral production), and motivation" (Artino, 2007. p. 7). People learn when they pay close attention to the behavior observed and excerpt critical information from that behavior (Bandura, 1971; Bandura, 1989; Bandura, 2005). Retention is remembering the behavior and includes the processes of transforming, restructuring, and changing information into new rules, and concepts

(Bandura, 1989). Motor reproduction means the ability that a learner can replicate the behaviors learned through the observation of models. According to Bandura (1989), acquiring information and performing are different. That is, behavioral reproduction may not occur if an observer cannot reproduce the observed behaviors because of the learner's personal factors such as physical disability (Omrod, 2004). Thus, even though a learner cognitively understands the information and knowledge, it may not lead to observable behaviors (Artino, 2007; Bandura, 1989). Finally, people need motivators to perform what they have learned (Bandura, 1989). Bandura (1989) suggested three types of incentive motivators (aka. reinforcers). The first type is a direct motivator which can cause a learner to correctly perform an observed behavior. The second is a vicarious motivator. People are motivated to produce behaviors when they see others be motivated, perform certain behaviors and successfully receive rewards. Lastly, people are motivated by themselves. People reproduce behaviors that they like, but refuse to reproduce behaviors that they dislike (Bandura, 1989).

The concept of learning through observations in SCT implies that people can learn work ethic and relevant attributes by observing others such as parents, teachers, peers, coworkers, their employers, and others. Social cognitive theory also supports that various types of motivators can affect people to learn and produce certain work ethic behaviors.

Self-regulation

Another important assumption of the social cognitive theory is self-regulation. According to Bandura (2005), people develop self-regulatory skills. People learn and exercise how to regulate their motivation, how to think, and how to manage their emotions. Self-regulation can be defined as one's capability to regulate one's own behaviors as moral agency (Bandura, 1986, 1995, 2005). Self -regulation involves three phases. The first phase is the forethought. In this

phase, people set goals, plan and/ or are motivated before they perform (Bandura, 2005). The next phase is the performance. In this phase, people do actions, and it involves self-control and self-observation (Bandura, 2005). The last phase is the self-reflection (Bandura, 2005). After people do certain actions, they evaluate their actions and react to that evaluation (Bandura, 2005). This concept of self-regulation also well explains how a person's overt behaviors related to their work ethic can be formed by taking the phases of planning, being motivated, performing tasks, and evaluating their behaviors.

Self-efficacy

Another assumption of the SCT was that cognitive processes are engaged in a person's learning and motivation (Bandura, 2005). Bandura introduced the concept of self-efficacy and defined it as beliefs of "people's judgments of their capabilities to organize and execute courses of action required to attain designated types of performance" (Bandura, 1986, p. 391) or in short "a judgment of personal capability" (Bandura, 2005, p. 26). Self-efficacy is a cognitive belief about one's ability to do a behavior needed to accomplish desired outcomes in a particular situation. It is situation and domain specific, and can vary from behavior to behavior related to outcomes (Bandura, 2005). For example, an individual's self- efficacy about social behavior can be different from that of his or her academic behavior. Joseph (2010) suggested that a person's work ethic could be affected by personality, motivation, stress, and other person's affective processes (Joseph, 2010). According to Bandura (1995), four sources can affect the development of individuals' self-efficacy: "(a) mastery experiences" (p. 3); (b) "social persuasion" (p. 4); (c) "physiological and emotional states" (p. 4); and (d) "vicarious experiences" (p. 3). First, mastery experiences of past performances, which is regarded as the most influential source, and current performances on a task can shape an individual's self-efficacy leading to more negative or

weaker domain-specific beliefs (Bandura, 1995). Experiences of successful accomplishments can cause people to believe that similar learning can be done again (Bandura, 1986; Bandura, 1995). Another source is verbal persuasion (or social persuasion). Other people's verbal encouragement or discouragement (e.g., "You can do it!" "No, you cannot do it!") may affect individuals' self-efficacy (Bandura, 1986; Bandura, 1995). The status of the people providing persuasion is an important variable as well. Next, physiological as well as emotional states and reactions can influence self-efficacy. Such physical symptoms which people with low self-efficacy on a specific task show include fear or anxiety; nausea or shaking of the hands; or sweaty palms. These negative signals from the body may further reduce their self-efficacy (Bandura, 1986; Bandura, 1995). Finally, vicarious experiences can affect people's self-efficacy development. Observing other people as social models who successfully complete tasks causes people to believe that they can do the task. Age, race, and gender of the role models can influence self-efficacy. In others words, self-efficacy formation through observing models is affected by the similarities and the differences of the role models (Bandura, 1986; Bandura, 1995).

According to Bandura (1995), self-efficacy can influence individuals' behaviors in four ways. First, self-efficacy influences a person's cognitive process, such as an activity selection in choosing a difficult task or an easy activity. Second, self-efficacy affects a person's motivational process (e.g., setting a goal). Third, self-efficacy influences people's affective process such as threats, stress, and depression resulting in different efforts and persistence that they will put into a task based on their level of self-efficacy. Finally, self-efficacy affects people's actual selection process of learning and achievement (Bandura, 1995). That is, people with higher self-efficacy may choose more difficult tasks, set higher goals, exert more efforts and persist longer, and finally learn and accomplish more things than those who have lower self-efficacy. Therefore,

depending on a person's self-efficacy toward a certain behavior or a task, a person's work ethic and certain attributes related to work ethic can be expressed in different behaviors. Also, different work ethic from person to person can be explained by the concept of a person's self-efficacy. Thus, people who have higher self-efficacy toward certain tasks in the workplace may present different work ethic.

Reciprocal Determinism

Bandura (1986, 2005) introduced the concept of reciprocal determinism, which is also known as the triadic model of human agency (also called "triadic reciprocal causation"; Bussey & Bandura, 1999, p. 684). Social cognitive theory distinguishes among three different modes of human agency. The model assumes that overt behaviors, personal cognitive attributes, and the environment reciprocally interact with each other (Bandura, 1995, 1999). Thus, learning is about environments interacting with the cognitive domain leading to certain behaviors. Figure 1 shows the mechanisms of the triadic reciprocal model of human agency. From the reciprocal deterministic perspective, differences exist in that an individual's work ethic is made up of learned thoughts and behaviors regarding a personal background, a social environment, and a work environment, (Hill, 1995; Lim, 2007). According to Bandura (2005), the environment is not a monolith bearing down on individuals unidirectionally. Instead, "environments operatively take three different forms which are imposed, selected, and created" (Bandura, 2005, p. 18). People's beliefs in their personal and collective efficacy play an influential role in how they organize, create, and manage the life circumstances that affect the paths they take and what they become. Bandura (1995) thought that fortuitous influences, which may not be foreseeable, may contribute to people's lives as causal factors, and people can make chance work for them by actively cultivating their interests, enabling beliefs and competencies.

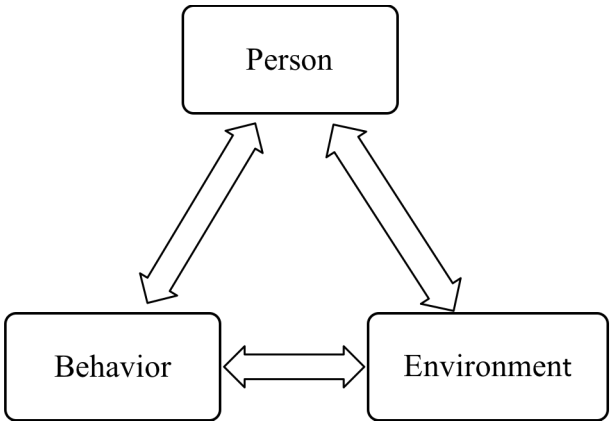


Figure 2. 1. The model of reciprocal determinism. This figure was developed based on Bandura's social cognitive theory. Personal factors such as self-efficacy and self-regulation; and environmental factors such as cultural gender expectations, work behavior expectations, and legislative and policies can affect a person's work ethic behaviors and attitudes. Also, a person's behaviors "bidirectionally" (Bandura, 1991, p. 45) affect personal factors and environmental factors as well.

According to Bandura (2005), human motivation and performance accomplishments are controlled not only by material incentives, but also by social incentives, and self-evaluative incentives connected to personal moral standards. The relationship among goals, self-efficacy, and behaviors occurs within this framework of a triadic reciprocal model of causality: personal attributes, external environmental factors, and overt behaviors. This model describes how personal inputs such as personal experiences, personal needs, gender, and race interact with contextual factors such as cultural norms, family, gender-role expectations, employers' expectations, and political/ national situations and learning experiences to influence our self-efficacy beliefs and self-regulation. Self-efficacy beliefs and self-regulation shape our interests, goals, actions, and eventually, our work behaviors, work attitudes, and work commitment, which are indicators of a person's work ethic.

Thus, the assumptions of learning through observations of others, self-regulation, self-efficacy, reciprocal triadic model in social cognitive theory well explain how human work ethic shapes and how human work ethic can vary depending on their own personal inputs, and his or her contextual environment. Social cognitive theory guided this study in that a person's work behaviors, work attitudes, commitment toward work, and belief systems toward work can be shaped through learning by observing others, mastery experiences including education, self-efficacy, self-regulation, their own behaviors, and finally the environment they belong to. Also, people's work ethic in turn reciprocally affect their environment back such as cultural norms, policy and/or laws.

Work Ethic Research and Work Ethic Instruments

Weber introduced the Protestant ethic concept in his essay titled *The Protestant Ethic and the Spirit of Capitalism* in 1904 and 1905, proposing that the economic growth in America resulted from the Protestant ethic. Since then, the concept of the Protestant ethic has been developed into the concept of work ethic in Western countries. One domain is the development of instruments to assess individuals' work ethic. Several work ethic measures developed in the mid 1900s were based on Weber's work ethic: The Protestant Ethic Scale (PE; Goldstein & Eichhorn, 1961); the Pro-Protestant Ethic Scale (PPE; Blood. 1969); the Protestant Work Ethic Scale (PES; Mirels & Garrett, 1971); The Survey of Work Values (Wollack et al.,1971), Spirit of Capitalism (SoC; Hammond & Williams, 1976), the Affective Work Competency Inventory (AWCI; Kazanas, 1978), The Work and Leisure Ethic scales (WLE; Buchholz, 1978), the Eclectic Protestant Ethic scale (EPE; Ray, 1982); Deferment of Gratification (Ray & Najman, 1985), the Australian work ethic scale (Ho & Lloyd, 1984), Shortened version of Mirels and Garrett's (1971) Protestant Work Ethic scale (PWE-SF; Katz & Hass (1988), and Work Ethic

scale (WE; Blau & Ryan, 1997). In the twenty-first century, some researchers made efforts to develop instruments that could more fit to the twenty-first century by modifying past instruments: the Multidimensional Work Ethic Profile (MWEP; Miller, Woehr, & Hudspeth, 2002), the Work Values Ethic (WVE; McMurrary & Scott, 2003) based on Mirels and Garrett's (1971) PES , a short version of the Korean MWEP (KMWEP-SF; Lim et al., 2007), a shortened version of Miller, Woehr, & Hudspeth (2002) (MWEP-SF; Meriac et al., 2013), and New Multidimensional Work Ethic scale (Mann, Taber, & Haywood, 2013). Some measures developed were not based on Weber's Protestant work ethic: the Occupational Work Ethic Inventory (OWEI; Petty,1993; Hill & Petty,1995), and Work Ethic Measurement of Vocational Students (WEMVS; Georgia Department of Technical and Adult Education (GDTAE) work ethic scale, Boatwright & Slate, 2002), and the Employability Skills Assessment (ESA; developed by Hill, 1995). These instruments were developed for measuring students' or trainees' work ethic in Career and Technical Education (CTE) fields.

Furnham (1990) conducted a content, correlation and factor analysis of the seven work ethic measures mentioned above. The study revealed seven dimensions: terminal belief in hard work, instrumental belief in hard work, leisure avoidance, moral beliefs, religious/spiritual belief, independence from others, and asceticism. Miller, Woehr, and Hudspeth (2002) in their series of studies 1 through 6 developed another work ethic measure and tested the dimensional, validity of the work ethic construct and named it the Multidimensional Work Ethic Profile, which has 65 items including seven constructs: hard work, centrality of work, avoidance of leisure time, delay of gratification, self-reliance, not wasting time, and morality/ethics. This scale was reduced as the short scale of MWEP and has been translated into Korean (Lim et al., 2007).

Mann, Taber, and Haywood (2013) proposed that such instruments which had been developed based on Weber's thesis might not represent the beliefs and norms of the contemporary, postindustrial workforce. Based on the interviews, they developed 68 Likert-type work ethic items, conducted factor analysis, identified six dimensions of work ethic not found in earlier work ethic measures, and named the scale the New Multidimensional Work Ethic Scale. The six included self-development, concerns for quality, initiative, teamwork, social accountability, balance, perseverance, and royalty. In 2000 and 2002, Boatwright and Slate (2002) developed the Georgia Department of Technical and Adult Education (GDTAE) work ethic scale to evaluate work ethic curriculum in Georgia Technical Schools. Each instrument of work ethic is summarized in Table 2.1.

Table 2.1

Work Ethic Instruments

Name of measure		Information
The Employability Skills Assessment (ESA)	Author(s)	Hill (1995), Park & Hill (2016)
	Year	1995, 2015
	Type	Self-assessment
	Number of items	23 statements; 7-point Likert-type scale: from 1 (*never*) through 7 (*always*)
	Examples of items	Do you accomplish your goals? Do you work well with others?
	Dimension	Multidimensional: 3 factors based on the theories of the OWEI (Petty, 1992)
	Validity	Content validity tested (2015)
	Reliability	.85, .81, and .81 each factor
	Goals	Employability skills as a part of work ethic in Career & Technical Education (CTE)
	Administration time	10-15 minutes.
	Language	English, Korean
New Multidimensional Work Ethic scale	Author(s)	Mann, Taber, & Haywood (2013)
	Year	2013
	Type	Self-assessment
	Number of items	68 statements; 5-point Likert-type scale (Disagree strongly = 1, Neutral = 3, Agree strongly = 5)
	Examples of items	"Continuous learning is very important, and I

		should be diligent."
	Dimension	8 dimensions
	Validity	Exploratory factor analysis reported (2013)
	Reliability	Pearson Correlations reported (2013)
	Language	English
Shortened version of Miller et al., (2002) MWEP-SF	Author(s)	Meriac, Woehr, Gorman, & Thomas (2013)
	Year	2013
	Type	Self-assessment
	Number of items	28 items: 5-point Likert-type scale (1 = Strongly Disagree to 5 = Strongly Agree)
	Examples of items	"It is important to stay busy at work and not waste time" (p. 163)
	Dimension	7 dimensions
	Validity	Model fit was tested, using IRT
	Reliability	Cronbach's α ranges from .75 to .86
A short version of the Korean MWEP (KMWEP-SF)	Author(s)	Lim, Woehr, You, & Gorman (2007)
	Year	2007
	Type	Self-report
	Number of items	35 items; 5-point Likert-type scales (1= strongly disagree to 5 = strongly agree)
	Examples of items	
	Dimension	7 dimensions
	Validity	EFA and CFA were conducted
	Reliability	Cronbach's α is .71, .61, .79, .78, .82, .76, and .73 each factor
Work Values Ethic (WVE) based on Mirels and Garrett (1971) Protestant Work Ethic scale(PWE-S)	Author(s)	McMurrary & Scott (2003)
	Year	2003
	Dimension	six forms of work commitment
	Validity	CFA was performed.
	Reliability	Cronbach's alpha
	Context	Australian manufacturing environment
The Multidimensional Work Ethic Profile (MWEP)	Author(s)	Miller, Woehr, & Hudspeth (2002)
	Year	2002
	Type	Self-report assessment
	Number of items	65, 5-point Likert scale (1 = strongly disagree to 5 = strongly agree)
	Examples of items	"I strive to be self-reliant" (p. 464)
	Dimension	7 dimensions
	Validity	EFA and CFA were performed: χ 2 value of 4970.59 (df = 1994; p < .01).
	Reliability	Test–retest reliability of seven sub-scales ranged from .83 to .95.
	Language	English, Spanish (2007), Korean (2007)
Work Ethic Measurement of Vocational Students	Author(s)	Boatwright & Slate (2002)
	Year	2000, 2002
	Type	Self-report assessment

(Georgia Department of Technical and Adult Education (GDTAE) work ethic scale)	Number of items	61-item questionnaire consisting of three sections: Section One is for demographic with 5 items, Section Two is 16 one-word and short-phrase work ethic descriptors with 5-point Likert-type scale ((a) = Almost None, and (e) = A Great Deal), and Section Three depicts work scenarios consisting of 40 statements with 5-point Likert-type responses (1 = strongly disagree 3 = No option, to 5 = strongly agree)
	Examples of items	"Cooperativeness," "Trustworthiness," "Punctuality," "Productivity", and "Cooperation and Teamwork include speaking up when I think we are making a mistake" (p. 21).
	Dimension	4 factors
	Validity	Factor analysis with the varimax rotation, content validity, and convergent validity
	Reliability	coefficient alphas of.86, .82, .86, and .80 for factors one through four
	Language	English
	Context	Intend to assess participant's value perceptions of the eight dimensions that Georgia Department of Technical and Adult Education (GDTAE, 1991) system has brought the concept of work ethics into their curriculum
Work Ethic scale (WE)	Author(s)	Blau & Ryan (1997)
	Year	1997
	Type	
	Number of items	18 items
	Examples of items	"Hard work is fulfilling in itself" (p. 442)
	Dimension	4 dimensions
	Validity	EFA & CFA were performed
	Reliability	Cronbach's alpha ranged from .70, .75, .80, & .85
	Language	English
	Context	Based on Weber's theoretical foundation
Occupational Work Ethic Inventory (OWEI)	Author(s)	Petty (1993), Hill & Petty (1995)
	Year	1993, 1995
	Type	Self-report
	Number of items	50 one-word descriptors with a stem of "At work I can describe myself as", 7-point Likert-type scale (1 = Never, 2 = Almost never, 7 = Always)
	Examples of items	Friendly, hardworking, productive, initiating, independent, reliable, dependable, rude, and careless.
	Dimension	4 dimensions
	Validity	EFA conducted. Factors are replicable in different populations

	Reliability	R^2 Partial correlation coefficients reported
	Language	English, Korean
	Context	Intend to measure work ethic, work value, and work competencies of the occupational aspect of the work ethic
Shortened version of Mirels et al., (1971) Protestant Work Ethic scale (PWE-SF)	Author(s)	Katz & Hass (1988)
	Year	1988
	Type	Self-assessment
	Number of items	11 items: 5-point Likert-type scale (1 = strongly disagree, 5 = strongly agree)
	Examples of items	"If I work hard enough, I will likely make a good life for myself," and "Anyone able and willing to work hard has a good chance of succeeding."
	Dimension	1 dimension
	Validity	
	Reliability	Alphas: ranges from .76 to .93
	Language	English Based on the Protestant Work Ethic Scale
Deferment of Gratification	Author(s)	Ray & Najman (1985, 1987)
	Year	1985
	Type	Self-report, Yes or No answer
	Number of items	12 items
	Examples of items	"Are you good at saving your money rather than spending it straight away?" (p. 118)
	Dimension	1 dimension
	Validity	
	Reliability	Alpha =.72
	Language	English
The Eclectic Protestant Ethic scale (EPE)	Author(s)	Ray (1982)
	Year	1982
	Type	Self-assessment
	Number of items	18 items
	Examples of items	"If one works hard enough, he is likely to make a good life for himself," and "Saving always pays off in the end."
	Dimension	2 dimensions
	Validity	Congruent, and predictive
	Reliability	Cronbach's alpha = .82, .78
	Language	English
The Work and Leisure Ethic scales (WLE)	Author(s)	Buchholz (1978)
	Year	1978
	Type	Self-assessment
	Number of items	41 items in total. Work ethic consists of 7 items. 5-point, Likert-type scale (1 = strong disagreement, 2 = mild disagreement, 3 = neither

		agree nor disagree, 4 = mild agreement, and 5 =strong agreement)
	Examples of items	"By working hard, a person can overcome every obstacle that life presents," and "A man can learn better on the job by striking out boldly on his own than he can by following the advice of others" (p. 223).
	Dimension	5 dimensions and work ethic is one dimension out of them
	Validity	BMD ø8M Factor Analysis Program, Factor analysis using the varimax rotation method
	Reliability	
		Belief systems toward work, and work ethic is one dimension of five dimensions of the instrument
Affective Work Competency Inventory (AWCI)	Author(s)	Kazanas (1978)
	Year	1978
	Type	A self-report 7 Likert-type questionnaire (Beach, 1981)
	Number of items	63 descriptors in educator's version
	Examples of items	Student version & educator's version (63 descriptors)
	Dimension	15 clusters (Beach, 1981) 3 factors: continuity, reliability, and meaningfulness (Brauchle, Petty, & Morgan, 1983)
	Validity	Content validity
	Reliability	Cronbach's alpha =.97 (Beach, 1981)
		Designed to measure work attitudes, values, and habits, recognize "the social and psychological aspects of work and identify specific affective work competencies that are desirable and common for vocational education programs" (p. 6).
Spirit of Capitalism (SoC)	Author(s)	Hammond & Williams (1976)
	Year	1976
	Type	Self-assessment
	Number of items	6 items: Statement; 6-point Liker-type scale from "Strongly to Quite a bit"
	Examples of items	"Time should not be wasted" (p. 584)
	Dimension	1 dimension
	Validity	Congruent
	Reliability	None
	Language	English
		Based on Weber's thesis, "Inner-worldly ascetic"
Instrument The Survey of Work	Author(s)	Wollack, Goodale, Wijting, & Smith (1971)
	Year	1971

Values	Type	Self-report assessment
	Number of items	54 statements, two categories: extrinsic and intrinsic
	Examples of items	5-point rating scale, "A worker should feel some responsibility to do a decent job whether or not his supervisor is around" (p. 335).
	Dimension	6 dimensions
	Validity	Construct validity: Factor analysis was performed (chi-square test for the dimensionality)
	Reliability	Coefficient alpha were mainly .60s.
	Language	English
		Based on Weber's Protestant ethic. Intend to reflect an index of an individual's general attitudes toward work
The Protestant Work Ethic Scale (PES)	Author(s)	Mirels & Garrett (1971)
	Year	1971
	Type	Self-report questionnaire
	Number of items	19 items from -3 (I agree strongly) to 3 (I agree strongly) with the 0 excluded, scoring: 1-7 by adding a constant of 4
	Examples of items	"Any person who is able and willing to work hard has a good chance of succeeding," "If one works hard enough, one is likely to make a good life for oneself," and "A distaste for hard work usually reflects a weakness of character."
	Dimension	1 dimension
	Validity	Congruent and predictive
	Reliability	Spearman-Brwon = .67, Kuder-Richardson reliability = .79 Cronbach's alpha = .70
	Language	English
		Based on the Protestant work ethic. Became the most popular scale to measure an individual's work ethic.
The Pro- Protestant Ethic scale (PPE)	Author(s)	Blood (1969)
	Year	1969
	Type	Self-assessment
	Number of items	8 items: four Protestant ethic, and four pro-Protestant ethic, 6-point Likert-type scale (1 = disagree completely, 6 = agree completely)
	Examples of items	"Hard work makes a man a better person," and "People who do things the easy way are the smart ones" (p. 457)
	Dimension	2 dimensions
	Validity	Factor loadings with the varimax rotation method: Congruent and predictive validity tested
	Reliability	Multiple correlation coefficients (R & R^2)

		reported (.70)
	Language	English
		Intend to assess personal differences in work values
The Protestant Work Ethic scale (PE)	Author(s)	Goldstein & Eichhorn (1961)
	Year	1961
	Type	Self-agreement or disagreement to four statements
	Number of items	Four statements
	Examples of items	"Even if I were financially able, I couldn't stop working" (p. 558).
	Dimension	1 dimension
	Validity	Theoretical criterion as well as the Chi-square test were used based on the Protestant Ethic
	Reliability	.913 (The coefficient of reproducibility)
	Language	English

Note. The Table 2.1 was developed based on past studies published (Blau & Ryan, 1997; Blood, 1969; Boatwright & Slate, 2002; Buchholz, 1978; Goldstein & Eichhorn, 1961; Hammond & Williams, 1976; Hill, 1995; Hill & Petty, 1995; Katz & Hass, 1988; Lim, Woehr, You, & Gorman, 2007; Mann, Taber, & Haywood, 2013; McMurrary & Scott, 2003; Meriac, et al., 2013; Miller, Woehr, & Hudspeth, 2002; Mirels & Garrett, 1971; Park & Hill, 2016; Petty, 1993; Ray, 1982; Ray & Najman, 1985; Taber, Mann, & Mayfield, 2006; Wollack, et al., 1971).

Religion and Work Ethic

Even though the concept of work ethic was from Protestantism by Weber, many studies have suggested that there is no consistent relationship between certain religious beliefs and work ethic any more (Christopher & Schlenker, 2005; Hill & Petty, 1995; Mann, Taber, & Haywood, 2013; Miller, Woehr, & Hudspeth, 2002; Pascarella, 1984; Ray, 1982;) and hard work is not a distinctive characteristic of the Protestant ethic any more (Ghorpade, Lackritz, & Singh, 2006). Ray (1982) concluded that most current religions share to the same or similar degrees of the attributes related to work ethic. Most major religions emphasize the importance of work and work ethic should be considered a general work ethic not a Protestant work ethic (Pascarella, 1984). Beder (2000) added that people are motivated to work to satisfy one's needs, and support his or her family and country rather than to meet a religious calling.

Approaching the end of 20th century, the view toward leisure changed (Applebaum, 1998) as well. The demand of higher education led teens to choose more leisure time over work (Aaronson, Park, & Sullivan, 2006). For example, college students had a higher leisure ethic than workforce professionals (Ness et al., 2010). Compared to many prior scales of work ethic, Mann, Taber, and Haywood (2013)'s scale did not have a factor related to leisure. The absence of the leisure factor reflects that having leisure may not be a negative influence on people's work ethic. Therefore, the modern concept of work ethic has been developed from the Protestant work ethic to a general concept of work ethic regardless of individuals' religions and moral entitlements. Work ethic measures have been developed toward the multidimensional. Modrack (2008) proposed that there are demands of developing work ethic instruments that can be used universally with validity and generalization across cultures across generations or age cohorts. Hill and Fouts (2005) insisted that all workforce preparation programs should include comprehensive content that includes a work ethic component.

The Occupational Work Ethic Inventory and the Employability Skills Assessment

Petty (1993) and Petty and Hill (1995) used the Occupational Work Ethic Inventory (OWEI) to evaluate employability skills of students who prepare for transition from school to work and adults in many occupations. The OWEI consists of 50 items of short descriptors or phrases such as "cooperative, productive, dependable, friendly, and following directions" (Petty & Hill, 2005, p. 9). Hill and Petty performed a factor analysis using the OWEI, and identified three usable factors: "interpersonal skills, initiative, and being dependable" (Petty & Hill, 2005, p. 9). A fourth factor was added with only reversed descriptors, but not labeled for use in measuring work ethic (Hill & Petty, 1995). Ratings of the OWEI were recorded using a Likert-

type scale with seven choices: 1 = never, 2 = almost never, 3 = seldom, 4 = sometimes, 5 = usually, 6 = almost always, and 7 = always (Hill & Petty, 1995; Petty & Hill, 2005).

Since the OWEI was developed, the OWEI has been adopted by many researchers. Those studies have revealed a correlation alpha of .94 (Petty, 1993), .90 (Hatcher, 1995), .95 (Hill & Petty, 1995), and .92 (Hill, 1997), and reported reliability coefficients for each subscale: α =.91 for interpersonal skills, α = .88 for initiative, α =.83 for being dependable, and α =.77 for the reversed items (Hill, 1997). Hill and Fouts (2005) used the OWEI to examine the relationship between work ethic and employment status among job seekers. They examined the differences of the ethical attributes of dependability, initiative, and interpersonal skills among jobseekers grouped by employment status, and found that job seeking individuals employed full-time had significantly lower work ethic scores than job seekers unemployed less than 3 months and jobseekers unemployed due to layoff. Kim (2007) translated the OWEI into Korean, which is the KOWEI, and used the KOWEI for a factor analysis to identify themes in Korean workers' responses on a work ethic inventory collecting data in Korea. Kim identified six factors: *성실성 (conscientiousness), 유쾌함 (pleasantness), 겸손함 (modesty), 유능함 (efficiency), 헌신 (devotion),* and reversed items. Kim found that the six factors completely explained all 50 items in the KOWEI and accounted for 46.79% of the total variance. Kim also found that Korean male workers tended to show *유능함 (efficiency)*, and *헌신 (devotion)* more than Korean female workers; elder Korean workers showed stronger work ethic than younger Korean workers for *유능함 (efficiency)*; workers who had more full-time experience showed higher scores of work ethic on *유능함 (efficiency)*, and *헌신 (devotion)*; and workers who had higher educational level showed higher scores on *유능함 (efficiency)* (Kim, 2007). Harvell (2009) used the OWEI in her doctoral dissertation to examine differences of work ethic of workers employed in public and private business and industries located in the Shreveport Chamber of Commerce grouping participants based on their occupations, level of education, age, gender, and years of full time experience. Joseph (2010) used the OWEI in a dissertation to analyze the relationship between

work ethic and generations, gender, and personality dimension, and the results indicated that there was very little overall difference in average work ethic levels among the four generations. However, work ethic level differences among specific combinations within the population were higher than levels of difference solely among the generations (Joseph, 2010).

The Employability Skills Assessment

Hill (1995) developed the Employability Skills Assessment (ESA) as an alternative measure for the OWEI in 1995 (Hill, 1995, 2014). The ESA was developed using the same constructs that were identified by prior research that used the OWEI. The differences between the OWEI and the ESA were the format of the items. While the OWEI consists of 50 single descriptive words, the ESA consists of 23 brief statements. The OWEI's fourth factor, which is comprised of reversed items, was eliminated from the ESA. The OWEI items that were above .45 loading and cross-loading items on the OWEI factor analysis were selected for the ESA. Finally, the ESA has three subscales: interpersonal skills, initiative, and being dependable (Hill, 1995). The ESA uses a 7-point Likert scale for rating each item with 1 (*never*); 2 (*almost never*); 3 (*seldom*); 4 (*sometimes*); 5 (*usually*); 6 (*almost always*); and 7 (*always*). The survey has directions for participants to circle the number that most accurately describes their actions and attitudes for each question. All the 23 items are statements (e.g., Do you like to be with other people? Are you committed to doing good work? Are you good at following instructions?).

In the ESA, the subscale of interpersonal skills is comprised of 8 items that relate to working relationships with other people. The statements which are loaded in the ESA measure personal attributes that would build good interpersonal relationships among workers and contribute to positive job performance in the workplace in which cooperation and collaboration are needed such as "Are you a happy person? Do you have good manners? Do you look for ways to help other people?" (Hill, 1995, Park & Hill, p. 22). The subscale initiative has 9 items (e.g.,

Are you aware of what is going on around you? Do you accomplish your goals? Do you do more than is required or expected of you?). The items for this factor were sentences that described characteristics which would pursue continuous progress and development on a job rather than be satisfied with current performances (Hill, 1995; Petty & Hill, 2005). This factor also includes a few statements representing negative behaviors that might block progress or development in a job situation, such as "Is it difficult for you to find solutions to problems on your own?" (Hill, 1995; Park & Hill, 2016, p. 23). The last factor, being dependable, consists of 6 items that represent work ethic characteristics of meeting the expectations and attitudes that workers are supposed to perform particular tasks at work. This work ethic subscale involves at least satisfying the minimum expectations for satisfactory job performance but does not necessarily require doing more than expected (Hill, 1995). One item in this factor also represents a negative behavior that might cause an unsatisfactory job performance at work and should be scored by reversing the score (e.g. Do you ever disappoint people?; 1 on instrument = 7).

Generation and Work Ethic

Karl Mannheim introduced the theory of generations (aka. sociology of generations). Mannheim defined a generation as a group of persons of similar ages whose members experience significant historical or cultural events within a certain period of time (Lyons & Kuron, 2014; Mannheim, 1952). In other words, generational cohorts share important historical, cultural, and social events and movements during similar and critical developmental periods (Codrington, 2008; Moore, Grunberg, & Krause, 2014). One or more major historical events occur and those events consciously affect young people, shaping their beliefs and values, lasting later in their lives, and characterizing the cohorts (Moore, Grunberg, & Krause, 2014). For example, Millennials experienced 911 in 2001 in the U.S.A, and those in South Korea experienced the

IMF crisis in 1997. Besides, current Millennials experienced the information explosion, where the Internet became a new social communication system before they were adults. Thus, they are also called "Digital Natives" (Prensky, 2001, p. 3), which means they learn technology very fast. This is even more influential than the invention of a transforming technology like the radio in its day. Based on Mannheim's theory of generation, three generation cohorts were selected for this study: Baby Boomers, who were born between the years of 1955-1963 in South Korea, Generation X, who were born between the years of 1964-1980 and Millennials, who were born from 1981 to 1999 (Deal, Altman, & Rogelberg, 2010; Lee et al., 2012; Meriac, Woehr, & Banister, 2010; Miller, Woehr, & Hudspeth, 2002; Twenge, 2010; Twenge & Campbell, 2008; Yu & Miller, 2003; Wong et al., 2008).

Baby Boomers in South Korea

In the twentieth century, Korea had baby booms three times: the first Baby Boomers (1955-1963), 386 Boomers who were born after the middle of the 1960s, and N generation or Generation X who were born in the 1970s. Baby Boomers in this study indicate those who were born between 1955 and 1963 in South Korea. In 1958, 80,000 babies were born and a special nickname, *58's dogs* named after the Chinese zodiac symbol, was given to them. They are about 14.6 % of the Korean population, and 50.3% were male and 49.7% were female (Park & Shim, 2010). Korean Baby Boomers have some distinctive characteristics. For example, they were born after the Korean War (1950-1953) when many babies were born. Socially and economically they experienced modernization and industrialization in South Korea. Politically, they experienced the Yushin Constitution in 1972. They had to severely compete with others for education and employment even with their siblings. Most Baby Boomers' parents had five to six children on average (Park & Shim, 2010) since South Korea was experiencing severe poverty right after

freedom from being Japan's colony (1910-1945) and from the Korean War (1950-1953). They were the main part of the labor force who contributed to Korea's current economic growth (Kang, 2013). Their political social common norm was characterized as realism (Park & Jang, 2015a; Park & Shim, 2010).

In addition, they were educated ideologically against North Korean communism. Culturally they were raised under parents who followed Confucian philosophy. As Baby Boomers, supporting their parents was a common cultural norm after their parents' retirement. Despite the national hardship, many Baby Boomers were regarded as a well-educated generation compared to their parents' generation even though there exist big educational gaps among themselves: elementary 8.7 %, middle school 16.7%, high school 46.1%, colleges 24.6%, and graduate school 5.5% each. Their parents had preferences for sons because many of them believed that their son (generally the eldest son) would hold a memorial service after their deaths, so the priority of education was given to the first born son or sons. Many daughters had to yield their opportunities of education to their brothers. Instead, they used to financially support their brothers' education by working before they got married and retired. This trend resulted from the influences of both Confucianism and Buddhism since over 40% of the previous generations of Baby Boomers were Buddhists (Park & Shim, 2010).

Baby Boomers worked longer hours than other generations. They worked more than six days per week until the Ministry of Employment and Labor of Korea declared that employees should work 40 hours and five days per week in 2011(Kim et al., 2014). There was a time when employees could not take off work even the season of Lunar New Year's Day which was the traditional Korean New Year's Day. The Japanese occupation prevented Korean people from holding memorial services for ancestors and the prohibition lasted until the government officially

declared that Korean could take off work for Lunar New Year's Day in 1986, which was right after the Gwangju Democratization Movement, a civil uprising against a military junta on May 18, 1980, in South Korea.

Today, the Korean government provides every South Korean with a 9-year compulsory education by law. However, this was not the case when Baby Boomers went to primary and secondary school. Korean compulsory education was established in 1948 by the Constitution, but it was not well implemented because of the Korean War. After the Korean War, during 1953-1960, Korean government established the compulsory education law of 6 to11-year-old children, and educational environments were very poor. For example, in the first Yearbook of the Korea Educational Development Institute, Kim discussed the poor educational environment in South Korea saying, "We have not found any solutions in order to escape the hard situations of schools while there have still been 70 to 80 students on average in a class in elementary and middle school and multi-school system in our country" (Kim, 1979, p. 9). Kim's comment indicated that most schools had to run classes twice a day, which means that some students went to school in the morning and others went to school in the afternoon. Most major cities had to maintain this kind of school system until the middle of the 1980s. Free 6-year compulsory education started in 1970. In the early 1970s, the entrance exam for middle school was abolished and expanded the opportunities for middle school education to more children. Korean government began to prepare for establishing a law for 9-year compulsory education in the early 1980s and started free compulsory 3-year middle school from schools which were located in the countryside and distant islands and in 1994 9-year compulsory education was extended to major districts and in 2004, it was extended across the nation. Therefore, most Baby Boomers paid for 9-year education as well as higher education and took an entrance exam for middle school (Kim, et al., 2006).

The main educational technology for Baby Boomers was radios. In Korea, radio broad casting started in 1947. The first television broadcasting in South Korea started in 1956 as a HLKZ-TV company, but it did not last long and closed the next year. In 1961, Korean Broadcasting System (KBS), a public TV and radio broadcasting network in South Korea, officially started, and it broadcasted some educational programs, but it was rare. Munhwa Broadcasting Corporation (MBC), another main TV and radio broadcasting network in South Korea, launched its broadcasting in 1960s. Korean Educational Broadcasting System (EBS) started in 1990 in order to provide educational programs (Kim, 2011). Therefore, Baby Boomers did not receive the benefits of educational technology. Instead, most of them had to use secondhand textbooks from seniors.

In the middle of 1960s and in the late 1970s, when Korean Baby Boomer were living as teenagers and young adults, many South Korean workers were sent to West Germany and other foreign countries as miners and nurses in order to earn dollars not only because it was difficult to find jobs in South Korea but also in order to be loyal to the country. From 1963 to 1977, 7,936 Korean people went to West Germany as miners, and from 1966 to 1976, over 12,000 women went as nurses. They obtained good reputations there as hard workers with their diligence, sensitivity, perseverance, and hope. Along with that, in the mid of 1970s, many South Korean went to East Asian countries such as Saudi Arabia through the Hyundai company as oil workers (Park & Jang, 2015a). To sum up, Confucian work ethic dominated the workplace in South Korea, and Baby Boomers in South Korea were expected to be loyal to the nation and to their companies sacrificing themselves by working hard.

Generation X in South Korea

There were no consistent differentiations to define Generation X in South Korea. Some researchers categorized people who were born in the 1960s, went to college in the 1980s and entered their thirties in the1990s 386 Generation (e.g., Choi, 2013). Some researchers indicated people who were born between the years of 1964-1980 after Korean Baby Boomers and before Millennials (Lee et al., 2012). Turner and Mitchell (2009) considered people who were born between 1961 and 1980 in Korea Generation X in the same way in the Unites States. Considering important social, political, historical events, Generation X in Korea included people who were between the years of 1964 and 1980 in this study. In this period, politically a military government started to rule the country in 1963, economically Korea started to grow, *Saemaul Undong* (New Community Movement) was promoted across the country in the 1970s, and many democratic movements occurred against a series of military governments in the 1980s.

Generation X who were born in the mid and the late 1960s actively participated in democratization movement in the 1980s and in the early 1990s. They tended to vote for Democratic Party in Korea (Choi, 2013). Turner and Mitchell (2009) described Korean Generation X tended to make decisions by themselves without depending on their parents, which implies that they are independent (Choi, 2013). Generation X in Korea was born and lived relatively in a more abundant environment than Korean Baby Boomers (Lee et al., 2012). Korean Generation X was once characterized by their individualism. They tended not to care about others including their parents rather than they pursue their own goals based on their own opinions and they could afford to financially obtain whatever they wanted to since they had lived in economical abundance (Lee et al., 2012). Generation X also was well educated, but they had fewer opportunities in job markets called “sandwich generation” (Choi, 2013, p. 240; Shin et al.,

2015), which means when they graduated and entered job markets, there were not enough job openings. Many positions were already taken by Baby Boomers, and when Baby Boomers began to retire, the openings were taken by Millennials (Choi, 2013). Generation X was raised with relatively less gender discrimination in Korea, which existed for centuries in Korea because of one of the Confucian principles. Under the birth control policy that promoted to have only two children per family in the 1970s, Korean people were enlightened by a public service advertisement. One slogan of the advertisements was *A well-raised daughter is much better than ten sons* (Creative AD, 2015). In the 1980s and the 1990s, a saying became popular (*Giving birth to a daughter may bring a chance to take a flight, but giving birth to a son may lead to visiting the prison;* Shin, 2016). This saying well reflected a social political situation at that time since many male students participated in democratic movements and were put into the jail, but daughters brought more income and led to trips to abroad.

Millennials in South Korea

Studies on Korean Millennials are rare. In this study, Korean Millennials indicate those who were born between 1981 and 1999 (Park & Shim, 2010; Parker, 2015). Millennials who were born in the early 1980s are also called Eco-generation in Korea (Park & Shim, 2010). Korean Millennials are characterized by their abundant life style environments. Many of them were born after rapid economic growth and democratic movements in South Korea. They were born after the advent of birth control in Korea, which was implemented by the Korean government to control the high birth rate in the middle of the 1970s and 1980s (Rim, 2013). As children, teenagers and young adults, they experienced the Seoul Olympic Games in 1988 and the World Cup in 2002. They have one or two at most siblings. Most of them were well educated: 72% of them graduated high school, and about 68% graduated tertiary school (Park &

Shim, 2010). The average numbers of students in a class in elementary, middle, and high school were 35.7, 46.5, and 48.7 each in 1996, when Korean Millennials went to school. According to the annual report of the Korean Educational Statistic Service (KESS: KESS, 2006), in 2006, the average numbers of students in a class were 30.9, 35.3, and 32.5 each.

Many of Millennials in South Korea have already entered the workplace and become the mainstream of Korean labor force. They have led changes in consumers' patterns. They have received and internalized pluralism. They tend to show individualism as well. Most of their parents do not show gender preference toward them. They do not show certain political favor, which means that they are not interested in politics much compared to Baby Boomers (Park & Shim, 2010). They are considered to lead Korean consumer culture. Most of all, Korean Millennials have lived with the Internet with a lot of information as well as many educational TV channels. Many of them study abroad such as in the United States, Europe countries and New Zealand and Australia (Park & Shim, 2010). They work five days per week. However, they have seen elder generations suffer from 1997's IMF crisis. Therefore, Millennials themselves have become victims of the effects of IMF crisis. For example, they have seen their parents or relatives lose jobs, divorce, and seen an unstable society. They cannot guarantee their stable jobs even though they get high degrees. Also, Korean Millennials were more pessimistic than Korean Baby Boomers toward hard working and education as the way to get ahead (Parker, 2015).

Some studies suggested that there were differences in work ethic by age groups (Harvell, 2009; Hill, 1997; Kim, 2007; Tang & Tzeng, 1992). Generational differences have appeared in ideas, values, and behaviors as well as in the demonstration of respect for authority and loyalty to institutions. Baby Boomers are viewed as having a stronger work ethic, while Millennials have a different work ethic from the older generations within the individual work ethic dimensions

(Callahan, 2008; Filipczak, 1994; Kupperschmidt, 2000; Ness et al., 2010; Rossi, 2006). When interpreting the differences of work ethic among generations, however, more cautions seem to be needed focusing on what differences appear among generations instead of interpreting the differences of work ethic among generations as stronger or not.

Kim's study (2007) on Korean work ethic with the OWEI suggested that there was statistically significant difference between two age groups: Korean workers who were in 45-64 (in the 2016 fiscal year they are 55- 74 years) and Korean workers who were in the 15-24-year-old age group (in the 2016 fiscal year they are 25-34-year-old age group) indicating 45-64 age group showed higher score on 유능함 (efficiency) than that of 15-24.

Gender and Work Ethic

Research to examine work ethic by gender has been an important area of work as women's participation in the labor force has increased. Previous studies have indicated differences in work ethic by gender. Women scored higher than men on hard work and on pride in doing a job well (Cherington, 1980), and women scored higher than men on all the subscales of the OWEI in a workplace study (Hill, 1992; Hill, 1997; Hill & Rojewski, 1999). Women were more committed to the PWE than men were (Furnham & Muhiudeen, 1984).

Bandura argued that gender conceptions are constructed from complex experiences and that gender conceptions operate in concert with motivational and self-regulatory mechanisms to lead gender-linked conduct throughout one's life (Bussey & Bandura, 1999). Gender is substantially interwoven in the social and cultural influences. Bussey and Bandura viewed gender role development and functioning as "the products of a broad network of social influences operating both familiarly and in the many societal systems encountered in everyday life" (Bussey & Bandura, 1999, p. 676). In addition, according to Bussey and Bandura, rules of

gender role conduct differ to some extent across social contexts and at different stages of life, and socio-cultural and technological changes demand changes of conceptions of appropriate gender conduct. From the perspective of the social cognitive theory, gender role development and functioning occur throughout one's life (Bussey & Bandura, 1999).

Women are faced with the notion of a glass ceiling in the workplace (Powell & Graves, 2003). For example, women's participation in the labor force in the U.S. was about 46.7% compared to 53.3 % of men. Women's percentage of bachelor's degrees was higher than that of men. The percentage of women's CEOs in Fortune 500 companies, however, was only 3% in 2004 (Eagly & Carli, 2004). According to Hill and Rojewski (1999), when women perceive a glass ceiling, some may give up their jobs, others may criticize the system, and others decide to overcome any barriers and become successful. Those who choose to overcome barriers may embrace work ethics and relevant attributes toward work or values of hard work leading to success and advancement in the workplace (Hill & Rojewski, 1999).

Kim's study (2007) on Korean work ethic using the OWEI with the variable of gender suggested there were statistically significant differences between male and female workers in South Korea. The result showed a medium amount of effect size (η^2 = .041) on 유능함 (efficiency) and a small effect size (η^2= .028) on 헌신 (devotion) among selected Korean workers in South Korea (Kim, 2007).

Changes in Occupational Structure and Work Labor in South Korea

Past studies agreed that several distinctive changes occurred in occupational structure in the U.S.A (Hill, 1997; Joseph, 2010). Similar changes occurred in South Korea in the recent decades, too. One change was that the rate of economic growth has decreased, while the employment rate has increased (KMEL, 2014). This trend of growth rate is expected to be reduced in the future (Rim, 2013). However, this increase of employment varies from

generations. According to a report of Korea Ministry of Employment and Labor (KMEL), since 2005, the employment rate of young adults who were between 15 years old and 29 years old had continually decreased in South Korea, while that of adults who were above 55 years old had increased. The employment rate of young adults was 44.9% in 2005 and 39.7% in 2013. Particularly, the employment of young adults who were in the 25-29 age range was worst among them (KMEL, 2014). This decrease occurred in the industrial divisions of manufacturing; construction; transportation; information and communication; broadcast related professionals; education; and professional, scientific and technical activities (KMEL, 2014).

Another change was that in the past there were not enough occupations for workers, but now many Korean industries experience large employee vacancies. The divisions that showed a rate of vacancies above 3% to 6.5% were in mining and quarrying; professional, scientific and technical activities; human health and social work activities; maintenance and repair services; business and administration related professionals; advertising, public, survey, event planning related professionals; information and communications; human health and social work activities (KMEL, 2014).

Workers in South Korea have aged (Rim, 2013). South Korea is struggling with the problems of low birth rate and aging society (Rim, 2013). People have begun to retire later than before because of longer life span (Kim, 2007). The occupational structure has been changed from manufacturing to service (Zacharias, Masterson, & Kim, 2014). Economically active people have increased in South Korea. More people participate in workforce. The participation rate of married women has continually increased (KMEL, 2014; Zacharias, Masterson, & Kim, 2014). Since in 2011, when labor legislation changed, the work environment such as work hours and days has been improved a lot (Kim et al., 2014). The occupational titles have become more

various, and employees' education level has increased.

The quality of work environment in South Korea has dramatically changed including work hours as well. For example, according to a report by the Office of Labor Affairs (OLA: a former name of the current Korean Ministry of Employment and Labor), in 1975 the average hours worked were 25.5 days and 217. 2hours per month; in 1985, it was 227 hours per month, which was about 57 hours per week; in 1992, 25.4 days per month, 212.9 hours per month, which was 49.0 hours per week (see Table 2.2).

Table2.2

Days Worked, Hours Worked and Number of Employed in South Korea

	1970	1975	1985	1992	2006	2013
Days worked/ month	25.2	25.3	24.3	25.4	24.0	21.0
Hours worked/ month	224.2	217.0	227.0	212.9	201.4	178.0
Number of employees	1,030,612 (363,228) 35.2%	1,538,544 (586,808) 38.1%	3,135,127 (1,121,227) 35.8%	4,439,037 (1,352,450) 30.5%	23,978,000 (10,001,000) 41.7%	25, 873,000 (10,802,000) 48.8%

Note. The number of days and hours worked has decreased, and in 2013 sharply decreased because of the new labor law in 2011. Labor force has continually increased. One reason was that most new labor force in the twenty-first century were/are children of Baby Boomers even though they had or have two children on average. Another reason was because the various occupations have appeared in Korea. Based on reports of Report on Monthly Labor Survey of Ministry of Employment and Labor of Korea. The number in parenthesis indicates women.

Another big change is that the women's participation in the workplace has increased. The rate of participation in the workplace out of economically active total women has continually increased: 35.2% in 1970; 35.8% in 1985; 30.5% in 1992; 41.7% in 2006; and 48.8% in 2013. The employment rate among married women has increased, while that of single unmarried women has decreased. The employment rate of women with higher degrees has increased (Zacharias, Masterson & Kim, 2014). Even though the women's participation rate has increased,

women still face the glass ceiling in South Korea. For example, the average wage of all male employees per month was 2,664,000 Won (about 2,420.5 US dollars), while that of female employees per month was 1,705,000 Won (about 1,549.16 US dollars) in 2013, which was 65% of men's wage. Also, the women's participation rate in professional and manager's positions is small compared to men's participation rate (see Table 2.3).

Table 2.3

Women's Participation Rate in Profession

		2000 (%)	2013(%)
Medical	Doctors	17.6	23.9
	Dentists	20.7	26.1
	Oriental doctors	11.1	18.8
	Pharmacists	61.3	64.3
Legislative	Judges	3.1	27.4
	Attorneys	1.8	25.4
	Lawyers	2.3	19.4
Officers	Above lieutenant/ school principals	2.1	8.8
	Managers	2.3	10.1
Education	Elementary	66.4 (Principal: 7.0)	76.6 (Principal: 18.6)
	Middle	57.6 (Principal: 8.7)	67.5 (Principal: 20)
	High	29.7 (Principal: 4.5)	48.1 (Principal: 8.7)
	Above colleges	15.9	23

Note. This table was composed with resources from Ministry of Health and Welfare, Security & Public Administration Committee, Korean Educational Development Institute, and the Korean Bar Association. The professions that women have dominated were education and pharmacists, while higher positions were for male professionals.

Psychometric Properties of an Instrument

Validity of an Instrument

Test developers and test users want to draw inferences from the test score to larger domains of behaviors. To justify the inferences, psychometric properties such as validity and reliability of the test scores should be computed and reported (Crocker & Algina, 1986). Validity refers to the degree to which empirical evidence and theory support the interpretations of test

scores for proposed uses of tests (Messick, 1995). Validity can be the approximate truth of propositions, inferences, or conclusions. Validity is, therefore, the most fundamental consideration in developing and evaluating tests (Messick, 1995). Validity should be viewed as a unified concept of validity including content, substantive, structural, generalizability, external, and consequential aspects of construct validity. The proposed interpretation includes specifying the construct (the concept or characteristics) that a test is designed to measure (Messick, 1995). Considering content, criteria, and consequences into a construct framework for empirically testing rational hypotheses about score meaning and utility can be integrated in a unified concept of validity. Thus, construct validity is the evidence for score interpretation.

According to Messick (1995), there are two major threats to construct validity: construct underrepresentation and construct-irrelevant variance. Construct underrepresentation refers to the degree to which a test fails to capture important aspects of the construct, indicating that the assessment is too narrow and fails to include important dimensions or facets of the construct (Messick, 1995). Construct-irrelevant variance means the degree to which test scores are affected by processes that are extraneous to the test's intended purpose (Messick, 1995).

Researchers can acquire validity evidence by analyzing the relationship between a test's content and the construct it is intended to measure. Test content refers to the overall themes, choosing terms, and format of the items, tasks, or questions on a test, as well as the directions for procedures regarding administration and scoring. Researchers can also obtain validity evidence through theoretical and empirical analyses of the response processes of test takers concerning the fit between the construct and the detailed nature of performance or response actually engaged in by test takers. Analyses of the internal structure of a measure can be another validity evidence providing the degree to which the relationships among measuring items and test components

conform to the construct on which the proposed test score interpretations are based (Messick, 1995).

Content validation is for situations when test users want to draw inferences from observed test scores to performances on a larger domain of tasks similar to items on the test (Crocker & Algina, 1986). One way of conducting content validation is to ask expert judges to examine test items and judge the extent to which these items sample a specified performance domain (Crocker & Algina, 1986). There are face validity, curricular validity, and instructional validity which are similar to content validity. Criterion-related validity refers to a study of the relationship between test scores and a practical performance criterion. There are predictive validity and concurrent validity under criterion validity. The former refers to the degree to which test scores predict criterion measurements that will be made at some point in the future. Concurrent validity refers to the relationship between test scores and criterion measurements made at the time the test was given (Crocker & Algina, 1986). A test has construct validity if it accurately measures a theoretical, non-observable construct or trait. Under construct validation, convergent validity and divergent validity are discussed. A test has convergent validity if it has a high correlation with another test that measures the same construct. By contrast, a test's divergent validity is demonstrated through a low correlation with a test that measures a different construct (Crocker & Algina, 1986).

Factor Analysis

Factor analysis (FA) is a technique that identifies groups or clusters of variables (Mulaik, 2009). Factor analysis is used to find the structure of latent variables that cannot be directly measured (Mulaik, 2009). One main goal of factor analysis is for parsimony, accounting for a set of observed variables in terms of a small number of latent, underlying constructs (common

factors) (Friendly, 2008). Factor analysis enables researchers to reproduce a matrix of correlations between a set of test scores with a smaller number of underlying factors or latent variables (Cudeck & MacCallum, 2007). The origin of factor analysis traced back to Spearman (1904). When he introduced *general intelligence*, Spearman developed a conceptual framework that would lead to factor analysis (Jones & Thissen, 2006) and Thurstone (1938) developed that framework in his work.

Factor analysis aims to identify a small number of common factors to explain the pattern of correlations between all pairs of tests in a set of tests (Crocker & Algina, 1986; Johnson & Wichern, 2007). Another purpose of factor analysis is to determine the nature of the common factors that account for the test intercorrelations, which requires factor loadings. Factor analysis is also to determine the proportion of the variance for an observed variable that is associated with common factors variance, which is communality. Lastly, factor analysis can be used to reduce a data set to a more manageable size while containing as much of the original information as possible by combining variables that are collinear (Johnson & Wichern, 2007; Field, 2009). Most examples of factor analyses in the field of education are used to validate inferences based on scores obtained from various tests (Engelhard, 2013).

Factor analysis (FA) is often used as a method to study the construct represented by scores from an instrument or scale not represented by items. FA can be used as a statistical tool for testing an internal construct validation of an instrument since it focuses on the structure of the construct (Benson & Nasser, 1998; Engelhard, 2013). Common linear factor analysis is based on some statistical assumptions. That is, the Pearson Product-Moment (PPM) correlation coefficient assumes (a) continuous measurement of both independent and dependent variables (or the x and y variables), (b) each variable is normally distributed, and (c) the relationship between x and y is

linear (Benson & Nasser, 1998; John & Wichern, 2007; Wirth & Edwards, 2007). When these assumptions are met, the PPM correlation can be a reliable indicator of the association among variables. Thus, the critical assumptions in FA are linearity and normality. Also, it is assumed that unique factors are normally distributed (Benson & Nasser, 1998; John & Wichern, 2007; Wirth & Edwards, 2007).

Assumptions underlying factor analysis are that the measured variables are linearly related to the factors plus errors (Mislevy, 1986; Wirth & Edwards, 2007). In other words, common and unique factors are uncorrelated, and unique factors are all uncorrelated and centered. Thus, factor analysis attempts to account for common variance (Wirth & Edwards, 2007). Data collected by using instruments consisting of dichotomous items (e.g., agree vs. disagree) or polytomous items (e.g., strongly disagree, disagree, neither, agree, and strongly agree) such as Likert-type items are categorical in nature, and can easily violate the assumptions of factor analysis, and the PPM coefficient may be distorted resulting in parameter estimates that are biased and impossible to interpret accurately (Wirth & Edwards, 2007). To solve these problems, some suggestions have been made among researchers. Comrey and Lee (1992) suggested that the use of FA may be possible when the data are from Likert-type items show a normal distribution. Another suggestion is that item factor analysis (IFA) is an appropriate alternative to the common linear factor model when modeling categorical item responses (Mislevy, 1986; Wirth & Edwards, 2007).

Estimators with many items or factors are well explained in the study by Wirth and Edwards (2007). Most of these estimators require intensive computing procedures, and some software packages such as structural equation modeling software (EQS), LISREL (Joreskog & Sorbom, 2004), and Mplus (Muthen & Muthen, 2006; 2010) can estimate categorical factor

analysis parameters. For this study, Mplus along with SAS and SPSS was used.

Principal Component Analysis vs. Exploratory Factor Analysis

Many past studies in applied psychology over the years of 1975-1984 tended to favor the principle component analysis (PCA) model and Kaiser's eigenvalue-one procedure for applying an exploratory factor analysis in order to determine the number of factors to extract (Ford, MacCallum, & Tait, 1986). Besides the extraction method, in reporting users are encouraged to provide the initial correlation matrix including the means and standard deviations for all variables so that others can have opportunities to verify the author's findings (Benson & Nasser, 1998). Although PCA has some of the same characteristics as a factor analysis (FA), PCA is different from FA. Both PCA and FA can be used to reduce variables into a fewer number of factors which represent the original set of variables (Crocker & Algina, 1986; Mulaik, 2010).

Theoretically, however, the components in PCA are linear combinations of observed variables while the common factors in factor analysis are linear combinations of the common parts of variables (unobservable variables) (Benson & Nasser, 1998). In other words, factor analysis includes error separately in the model while PCA does not assume that no measurement error exists in the variables, and it accounts for variance of the data. Factor analysis has an underlying statistical model which can be tested and partitions the total variance into common and unique variance (Dunteman, 1989). Principal component analysis focuses on total variance, whereas exploratory factor analysis focuses on common variance, and it accounts for a pattern of correlations. In principal component analysis, components are always uncorrelated, while in factor analysis, factors may be correlated or uncorrelated. Scores on components in PCA can be computed exactly while scores on factors in FA must always be estimated (even from population correlation) (Dunteman, 1989; Mulaik, 2010). Principal component analysis can serve as a guide

to the most appropriate number of meaningful factors of a factor analysis. However, if the purpose of the study is to interpret the correlations among variables as arising from a smaller set of latent variables or factors, using more than one rotation methods is recommended for the most satisfactory factor analyses. Performing a principal component factor analysis with a varimax rotation as a guide, then performing the principal axis factor analysis or the maximum likelihood estimate method, including a varimax rotation, and then compare the solutions obtained from the two factor analyses are some recommended methods (Johnson & Wichern, 2007; Kaufman, 1975).

Factor analysis has an underlying statistical model that partitions the total variance into common and unique variance. Factor analysis focuses on explaining the common variance, rather than the total variance, in the observed variables on the basis of a relatively few underlying factors (Dunteman, 1989). The following is the fundamental equation of factor analysis:

$$Y = \Lambda X + \Psi E$$

, where Y is observed variables, Λ is common factor pattern matrix, X is common factors, Ψ is unique factor-pattern coefficients, and E is unique factors (Benson & Nasser, 1998; Johnson & Wichern, 2007; Mulaik, 2010).

When there are no underlying statistical models of the observed variables, principle component analysis is used focusing on explaining the total variation in the observed variables on the basis of the maximum variance properties of principal components. Principal component analysis is sometimes adopted prior to some factor analytic procedures to determine the dimensionality of the common factor space (Dunteman, 1989). The equation for principal component analysis is

$$Y = \Lambda X.$$

Thus, there is greater potential for inflation (bias) in the coefficients in principal component analysis (Benson & Nasser, 1998; Johnson & Wichern, 2007; Mulaik, 2010).

If the purpose of a study is not just to reduce the variables into smaller number of components, but also to interpret correlation among variables, a principal component analysis (unities in diagonals in R-matrix) can be used as a guide for estimating the number of factors and then either a principal axis factor analysis (PAF: squared multiple correlations in diagonals as final estimates of communalities) or a maximum likelihood factor analysis can be performed. Next, both solutions obtained from both a PCA and a PAF and/or a ML can be compared. Repeating those steps with a different number of factor solutions is recommended (Johnson & Wichern, 2007).

Sample Size for Factor Analysis

Factor analysis is considered a highly intensive multivariate technique. Before sample sizes are suggested, researchers should consider the number of variables, the potential number of factors, the variable to factor (*v/f*) ratio, the degree of factor loadings, and the degree of inter-factor correlation. Generally, factor analysis requires sufficient sample size for stable estimates. First, sufficiently large samples help to ignore sampling error because sampling theory for factor analysis is not extensively developed (Gorsuch, 1983; Benson & Nasser, 1998). Second, it is assumed that a population correlation matrix is used for various factor analytic procedures, and this assumption implies an infinitely large sample. Third, as the analysis becomes more exploratory, a larger sample is needed. Lastly, larger sample sizes are required with categorical data than with continuous data (Wirth & Edwards, 2007).

Many researchers have suggested a desirable sample size to conduct factor analysis. One is to use a rule of thumb of from 5 to 10 subjects per variable (Comrey & Lee, 1992). Comrey

and Lee (1992) agreed that 300 cases are good, 100 cases are poor, and 1000 cases are excellent when they conducted a study with Comrey's personality scale. Kass and Kass (1979) recommended having 10 times as many participants as variables. Tabachnick and Fidell (2007) suggested that having at least 300 samples for factor analysis is recommended. Another rule is to use the Kaiser-Meyer-Olkin measure of sampling adequacy, called KMO (Kaiser, 1970). According to Kaiser (1974), values of significance greater than 0.5 are barely acceptable. Hutcheson and Sofroniou (1999) agreed that values between 0.5 and 0.7 are mediocre, values between 0.7 and 0.8 are good, values between 0.8 and 0.9 are great, and values above 0.9 are excellent.

R-matrix

The standard deviation, and variance of a data set are measures of how spread out the data is around the mean (Crocker & Algina, 1986). These two measures are purely 1-dimensional (Crocker & Algina, 1986). However, if we have a data set with more than 2 dimensions, there is more than one covariance measurement that can be calculated (Crocker & Algina, 1986). So, it is possible to calculate the correlations between tests and factors (Crocker & Algina, 1986). An R-matrix is a correlation matrix which contains a table of correlation coefficients between each pair of variables. In a R-matrix, a principal component analysis (PCA), contains all ones in the diagonal elements, while a principal axis factoring (PAF) in exploratory factor (FA) analysis uses squared multiple correlations in diagonal as estimates of communalities (Benson & Nasser, 1998; Mulaik, 2010).

Factors and Factor Loadings

A factor is an unobservable or latent variable (Crocker & Algina, 1986). In an R-matrix, the off diagonal elements are the correlation coefficients between pairs of variables. The

existence of clusters of large correlation coefficients between subsets of variables implies that those variables could be measuring attributes of the same underlying dimension (Mulaik, 2010). These underlying dimensions are called factors or latent variables. The correlations between subsets and the factors are called factor loadings (Mulaik, 2010).

$$\rho_{ij} = a_{i1}a_{j1} + a_{i2}a_{j2}$$

A factor is an unobservable or latent variable (Crocker & Algina, 1986). In an R-matrix, the off diagonal elements are the correlation coefficients between pairs of variables. The existence of clusters of large correlation coefficients between subsets of variables implies that those variables could be measuring attributes of the same underlying dimension (Mulaik, 2010). These underlying dimensions are called factors or latent variables. The correlations between subsets and the factors are called factor loadings (Mulaik, 2010).

$$\rho_{ij} = \sum_{k=1}^{m} a_{ik}a_{jk} .$$

Communality and Uniqueness

It is possible to calculate the variance for any given variable (Mulaik, 2009). The total variance for a particular variable consists of two components: common variance which is shared with other variables or measures, and unique variance which is specific to that variable. The proportion of common variance shown in a variable is the communality. Communality for each variable is the portion of the total variance that is shared with the remaining p-1 variables (Mulaik, 2010). In other words, it is the variance that a certain variable has in common with the remaining p-1 variables.

Unique variance refers to variance that can be reliably attributed to only one measure. Unique variance consists of two parts: specific variance and error variance (Crocker & Algina,1986; Mulaik, 2010). The portion of common variance and specific variance is called true

variance. The variance which is specific to one variable but not reliably attributed is called error or random variance. By these definitions, the sum of the two components of true variance is the reliability of a variable. Thus, the communality of a variable, which is always less than or equal to the reliability of the variable, and the communality of a variable can be considered a lower bound of the reliability of the scores on test *i* (Crocker & Algina,1986; Mulaik, 2010). The following shows the relationship of those components:

Total variance = common variance (communality) + specific variance + error variance,

True variance = common variance + specific variance, and

Unique variance = specific variance + error variance.

The communality is calculated by

$$h_i^2 = \sum_{k=1}^{r} \lambda_{ik}^2.$$

For uncorrelated factors, where λ_{ik}^2 is the square of the *k*th factor loading of the *i*th variable (Crocker & Algina,1986). Since the variable Y_i is defined to be expressed in the standard score form, it follows that $\sigma_i^2 = 1$. Thus, relationship of the communality and unique variances can be expressed in the following equations,

$$h_i^2 = 1 - \Psi_i^2,$$

$$\Psi_i^2 = 1 - h_i^2, \text{ and}$$

$$\Psi_i^2 = s_i^2 + e_i^2,$$

Where Ψ_i^2 is the unique variance of a variable *i*, s_i^2 is the specific variance of variable *i*, and e_i^2 is random error variance unique to variable *i* (Crocker & Algina,1986).

The reliability, ρ_{ii}, of a variable *i* can be calculated by

$$\rho_{ii} = h_i^2 + s_i^2.$$

The Fundamental Equation of Factor Analysis

From the definitions above, the fundamental equation of factor analysis can be expressed in the following equation (Mulaik, 2010):

"Y = ΛX+ΨE (fundamental equation of factor analysis)" (Mulaik, 2010, p. 136)

, where Y is observed variables, Λ is common factor pattern matrix, X is common factors, Ψ is unique factor-pattern coefficients, and E is unique factors. For this equation, there should be some assumptions needed: "let Y be $n \times 1$ random vector of random variables whose variables are the observed variables $Y_1, \ldots, Y_n$, assuming that $E(\mathbf{Y}) = 0$, and $\mathbf{E}(\mathbf{YY}') = \boldsymbol{R}_{YY}$ is a correlation matrix with unities for the variances in its principal diagonal" (Mulaik, 2010, p. 136). "Let X be an r × 1 random vector" (Mulaik, 2010, p. 136), whose variables are the common factors, $X_1, \ldots, X_r$ assuming that "E(X) = 0 and $E(\mathbf{XX}') = \mathbf{R}_{\mathrm{XX}}$ is a correlation matrix" (Mulaik, 2010, p. 136) ; let "**E** be an $n \times 1$ random vector whose variables are the unique factors $\varepsilon_1, \ldots, \varepsilon_n$, having the property that $E(\mathbf{E}) = 0$ and $E(\mathbf{EE}') = \mathbf{I}$, having normalized unique factors" (Mulaik, 2010, p. 136) to have means of zero and variances of unity and are mutually uncorrelated; and "let Λ be an $n \times r$ matrix of common factor pattern coefficients and **Ψ** an $n \times n$ diagonal matrix of unique factor-pattern coefficients whose diagonal elements are $\Psi_1, \ldots, \Psi_n$" (Mulaik, 2010, p. 136), and the equation can expressed in the following matrices (Mulaik, 2010):

$$\begin{pmatrix} \mathrm{Y}_1 \\ \vdots \\ \mathrm{Y}_\mathrm{n} \end{pmatrix} = \begin{bmatrix} \lambda_{11} & \cdots & \lambda_{1\mathrm{r}} \\ \vdots & \ddots & \vdots \\ \lambda_{\mathrm{n}1} & \cdots & \lambda_{\mathrm{nr}} \end{bmatrix} \begin{pmatrix} \xi_1 \\ \vdots \\ \xi_\mathrm{r} \end{pmatrix} + \begin{bmatrix} \psi_{11} & \cdots & 0 \\ \vdots & \ddots & \vdots \\ 0 & \cdots & \psi_{\mathrm{nn}} \end{bmatrix} \begin{pmatrix} \varepsilon_1 \\ \vdots \\ \varepsilon_\mathrm{n} \end{pmatrix}.$$

From the fundamental equation of factor analysis, the fundamental theorem of factor analysis is expressed as the following equation:

$$\mathbf{R}_{\mathrm{YY}} = \boldsymbol{\Lambda}\mathbf{R}_{\mathrm{XX}}\,\boldsymbol{\Lambda}' + \boldsymbol{\Psi}^{\mathbf{2}}.$$

The Number of Factors

Suggestions for determining the number of factors to extract from a correlation matrix for subsequent rotation and interpretation were well provided by Benson and Nasser (1998). In principal component analysis, the number of factors can be anywhere between 1 and N-1, where N is the number of measures. The number of factors can be determined from the relationship of the correlations between pairs of tests to the loadings of these tests on the factors (Benson & Nasser, 1998; Crocker & Algina, 1986).

For principal factor analysis, methods such as Bartlett's (1950) significance test, Guttman's (1954) weakest lower bound, Kaiser's (1960) eigenvalue-one procedure, Velicer's (1976) minimum average squared partial correlation, and Horn's (1965) parallel analysis are introduced. Out of these methods, Kaiser's eigenvalue-one is one of the most frequently used methods even in a FA because most software developed contains this method and it is easy to apply. According to Kaiser (1960), principal components with variances less than one contain less information than a single standardized variable whose variance is one. Therefore, the criteria are to choose principal components with variances more than one. However, when Kaiser's eigenvalue-one is used to determine the number of factors to extract in a FA model and sample data, this procedure frequently overestimates and sometimes underestimates the number of common factors, which may lead to inconsistent results (Lee & Comrey, 1979; Benson & Nasser, 1998). Past studies such as Monte Carlo studies by Zwick and Velicer (1982, 1986) found that as the number of variables increases, the number of components retained tended to increase together. This procedure can indicate the correct number of factors only when the v/f ratio was .40-.50 and variable communalities were .60-.80 (Hakstian & Rogers, 1982).

For an exploratory factor analysis, maximum likelihood ratio (Lawley, 1943), strongest

lower bound (Guttman, 1954), visual scree (Cattell, 1966), and regression-based method (Zoski & Jurs, 1996) were suggested. Out of these methods, the visual scree procedure performs reasonably well in most cases even though the visual scree is dependent upon experienced users to effectively use. A scree is a graph that includes eigenvalues from the unrotated factor matrix plotted on the vertical axis and the factor sequence numbers plotted on the horizontal axis. That is, a scree plot visualizes common (nontrivial) factors from unique (trivial) factors (Benson and Nasser, 1998). Also, Zoski, and Jurs' (1996) standard error scree (SE scree) procedure is recommended as a most promising method (Benson & Nasser, 1998), in which the standard error of the estimate for each eigenvalue is calculated, and the number of standard error that exceeds 1/v (v denotes variables) indicates the number of factors to retain.

Factor Rotation

Once factors have been extracted, the next step is to calculate to what degree variables load onto these factors, which is factor rotation. Initial or unrotated loadings are an initial set of factor loadings that permit convenient calculation of the loadings, which result in a set of transformation equations. Factors are rotated to help psychologically interpret factors solutions based on the size of loadings (Friendly, 2008). During rotation, the variance extracted is redistributed more evenly across the factors rather than being concentrated in the first few factors as in the unrotated matrix.

Two forms of rotations are mainly used: orthogonal and oblique. Orthogonal rotations result in uncorrelated factors, while oblique rotations allow the factors to be correlated. The principle that most factor analysts use to guide a factor rotation is meet a simple structure (Mulaik, 2010; Thurstone, 1935). Simple structure is based on the premise that a variable should associated with as few factors as possible. According to Gorsuch (1983), there should be several

variables whose loadings are high on one factor and low or near zero on the other factor. In other words, one subset of variables defines one factor, but not any other factors (Benson & Nasser, 1998). Many factor analysts suggest .30 as the minimum of loading to define a factor because a variable with a loading of .03 represents only nine percent of the variance of a factor. Varimax rotation, Quartimax, and Equamax are some methods for orthogonal rotations. Varimax tries to clean up the columns of the pattern matrix, minimizing complexity of each factor. Quartimax tries to clean up the rows of the pattern matrix, minimizing complexity of each variable. Equamx tries to clean up both the columns and the row of the pattern matrix, minimizing the complexity of both factors and variables. Direct oblimin and promax are the two most frequently used oblique rotation methods. Promax uses result of an orthogonal method and tries to make it better, allowing factors to become correlated (Beson & Nasser, 1998; Mulaik, 2010).

In this study, since it is assumed that factors such as initiative, interpersonal skills, and being dependable are not correlated and in order to meet the simple structure criterion and to make interpretation of factors as simple as possible, an orthogonal rotation method using the varimax factor rotation method were applied.

Reliability

Generally, reliability refers to the consistency of scores across replications of a testing procedure regardless of how this consistency is estimated or reported (e.g., standard errors, reliability coefficients, generalizability coefficients, error/tolerance ratios, IRT information functions, or various indices of classification consistency: Crocker & Algina, 1986). A high reliability coefficient indicates that there is consistency in examinees' scores but it does not guarantee validity of the examiner's inferences (Crocker & Algina, 1986). When a test user or test developer uses a test or a measurement instrument, measurement error occurs from internal

and external sources (Jones & Thissen, 2006). Internal sources (where internal is referring to issues referring to the test takers) refers to fluctuations in the level of an examinee's motivation, interest, or attention and the inconsistent application of skills, while external sources include variations in testing conditions, such as time of day, level of distractions, and variations in scoring due to scorer subjectivity (Johnson & Christensen, 2014). However, researchers in the social, behavioral and health sciences are looking for measures that have stable and consistent meaning over replications, which means invariance (Crocker & Algina, 1986). In order to examine the hypothesis of invariant measurement, it is necessary to replicate or repeat the measurements over different assessment opportunities and conditions. Using subsets of items (parallel item subsets/forms), occasions (time/repeated measurements) with subgroups of persons (gender, race/ethnicity) and under a certain context, reliability tests can be accomplished (Crocker & Algina, 1986; Jones & Thissen, 2006).

Test-retest study. The overall reliability, given error variance due to the sampling of forms, occasions, and raters, can be estimated through a test-retest study, which uses the same form on different occasions and scored by different raters. Another is to administer an alternate form in independent testing sessions (Crocker & Algina, 1986).

Alternative forms. Alternative forms (or parallel forms) of a standardized test are designed to have the same general distribution of content and item formats, the same administrative procedure, and approximately the same score means and standard deviations. They are interchangeable because they are built to the same specifications, and interpreted as measures of the same construct from the administration of alternative forms in independent testing sessions (Crocker & Algina, 1986).

Split halves coefficient, KR-20, Cronbach's coefficient alpha. Using the split halves coefficient, KR-20, and Cronbach's coefficient alpha are other ways for analyzing reliability (Crocker & Algina, 1986). These methods use one form of the test by dividing test items. Out of them, Cronbach's alpha, α, which observes the extent of agreement between different parts of one test associated with form-to-form variability, is the most common measure of scale reliability. Cronbach's α is

$$\alpha = \frac{N^2\overline{Cov}}{\sum s^2_{item} + \sum Cov_{item}}.$$

The top half of the equation is the number of items (N) squared multiplied by the average covariance between items, which is the average of the off diagonal elements in the variance-covariance matrix. The bottom half is the sum of all the item variances and item covariance, which is the sum of everything in the variance-covariance matrix. Since the value of α depends on the number of items on the scale, α increases as the number of items on the scale increases (Crocker & Algina, 1986).

Conclusion

Chapter 2 was devoted to a literature review related to work ethic. First, historical perspectives on work both in the Western society and in South Korea were revisited. Western society placed negative value on working hard and saw labor as a punishment of God until the Protestant Reformation occurred. Since Protestantism was introduced by Luther and Calvin, interpretation of work has changed and people have placed a good value on hard work. Weber argued that the Protestant ethic contributed to the development of economies in the Western countries. In South Korea, historically affected by Confucian values and work ethic, work ethic is considered a recent concept in South Korea. Instruments developed in order to evaluate individual's work ethic were reviewed. Being short of research-based scientific instruments for

measuring individuals' work ethic in South Korea, the Employment Skills Assessment was reviewed in order to be used to measure Korean work ethic and to examine variables of generations and gender. Bandura's social cognitive theory was reviewed as a guiding theory for this research. The context of South Korea was viewed in terms of three generations, Baby Boomers, Generation X, and Millennials; and gender: women and men. Finally, literature related to factor analysis in applied studies such as educational fields was reviewed in order to guide the development of a good research design for translating instruments such as the ESA into the Korean ESA.

CHAPTER 3

METHOD

The main components of the research method for this study are described in this chapter. The major parts include research design, participants and context, instrumentation, data collection procedures, and data analysis.

Purpose Statement

The purpose of this study was to provide a Korean Employability Skills Assessment (KESA) by translating the Employability Skills Assessment (ESA; Hill, 1995) into Korean and to use this instrument to compare the work ethic of South Korean Millennials, Genereation X, and Baby Boomers and men and women in the South Korean workforce. The original English version of ESA is an alternative form of the Occupational Work Ethic Inventory (OWEI) and has three constructs: interpersonal skills, initiative, and dependability. An exploratory factor analysis was performed to identify what factors were appropriate for interpreting the KESA. Next, the work ethic of South Koreans as measured by the KESA was examined. Then, participants from three generations of people in South Korea—Baby Boomers (1995-1963), Generation X (1964-1980), and Millennials (1981-1999)—were compared based on the subscales of the KESA. Comparisons were also made between South Korean men and women.

Research Questions

1. What constructs comprise the work ethic of South Koreans in South Korea as measured by the Korean Employability Skills Assessment (KESA)?
2. What is the work ethic of South Koreans as measured by the KESA?

3. Do differences exist in the work ethic between women and men and among Baby Boomers, Generation X, and Millennials in South Korea?

Research Design

For this study, an *ex-post facto* research design using a cross-sectional survey, with exploratory factor analysis, descriptive statistics, and a multivariate analysis of variance (MANOVA) was used to analyze data which were collected using the survey method. The term *ex-post facto* means after the fact, which implies that investigators have no control over independent variables. In other words, researchers cannot directly manipulate the independent variables as the cause has already occurred. Instead, researchers must study the world as it naturally occurs (Johnson & Christensen, 2014; Rojewski, 2014; Seltman, 2013). This research design cannot definitively assure the influence of independent variables on dependent variables. Despite the limitation, this type of research design is beneficial for initial exploratory investigations where manipulation of independent variables is impossible or unethical in order to infer causal connections between variables (Gall, Gall, & Borg, 2007). This research design has been widely used in previous research similar to this study (Cennamo & Gardner, 2008; Harvell, 2009; Hill, 1997; Hill & Fouts, 2005; Kim, 2007; Meriac, Woehr, & Banister, 2010).

In this cross-sectional survey, data were collected during a single, relatively brief time period of three weeks from July 20th, 2015 to August 10th, 2015. The following major steps were taken as Fraenkel and Wallen (2003) recommended: (a) stating purpose of research and defining the research question(s); (b) identifying the population and/or sample, (c) determining the method of data collection, (d) selecting the sample from the population of interest, and (e) identifying the instrument.

Participants and Context

The population for this study was comprised of three generational cohorts in South Korea. One cohort was Millennials, who were born in the years from 1981 to 1999. Other cohorts were Generation X, who were born in the years from 1964-1980, and Baby Boomers, who were born in the years from 1955-1963 in South Korea. For purposes of this study, people who were born in the twenty-first century and those not in the Baby Boomer, Generation X, or Millennial categories were not included. Of the total legal working-age population, there are approximately 25,873,000 people between the ages of fifteen and sixty-five actually employed in South Korea; 15,071,000 were males (51.2%), and 10,802,000 were females (48.8%) (Korea Ministry of Employment and Labor of Korea, 2014). Since 51.1% of the South Korean workforce was male and 48.8% was female, it was desirable to have about the same number of male and female respondents collected from each generation: Baby Boomers, Generation X, and Millennials. In order to represent the population better, responses from participants who worked in a wide cross-section of occupations were sought.

Although there is no specific sample size agreed on by researchers for a factor analysis (e.g., Reise, Waller, & Comrey, 2000), there are some rules of thumb. According to the theorem or law of large numbers, as the number of identically distributed, randomly generated variables increases, their sample mean (average) approaches their population mean (Routledge, 2014), thus a larger sample will be better. In addition, the Central Limit Theorem supports that the sum or average of an infinite sequence of independent and identically distributed random variables, when suitably rescaled, tends to a normal distribution (Routledge, 2014). Therefore, with a large number of respondents, it is possible to infer population parameters such as the mean and standard deviation of population.

For purposes of this study, there was a goal of about four hundred (400) valid responses needed in order to ensure a minimum level of statistical significance based on the recommended sample size of 384 for a population of 100,000 and above (Johnson & Christensen, 2014). The original sample for this study included 473 persons who were 18 years old or over in 2015. Out of those, only respondents who belonged to the three generations were selected as valid respondents, which were 450 participants. The primary goal of sample size, 400, was achieved. This sample size also satisfied recommendations of other researchers for factor analysis. For example, Kass and Kass (1979) and Tinsley and Tinsley (1987) recommended having 5-10 times as many participants as variables up to a total of about 300. Reise, Waller, and Comrey (2000) suggested that when determining sample size for a factor analysis, researchers should consider the variables-to-factor ratio, the average communality of the variables, and degree to the number of variables that load on each factor (Reise, Waller, & Comrey, 2000). When communalities are high (e.g., >.6) and the factors have many large loadings, a sample size of 100 is usually adequate. However, when analyzing items and communalities are low, the number of factors is large and the number of indicators per factor is small, a sample size of 500 may not be adequate (Reise, Waller, & Comrey, 2000). In addition, data collected by the KESA were categorical in nature, so more respondents were needed than if continuous data were being used. Hill used 1,151 respondents who completed instruments for a factor analysis of data using the Occupational Work Ethic Inventory (OWEI), an instrument with 50 items and the basis for developing the ESA, and extracted four factors including one that was reversed. Kim (2007) used 816 respondents for a factor analysis of the KOWEI, and extracted six factors. Considering all the suggestions, the KESA with 23 items was expected to have from three to six factors and 450 respondents provided a satisfactory pool of data for this study.

Instrumentation

The instrument in this study consisted of two parts: (a) demographic items, and (b) the KESA with 23 items. Demographic items asked a consent question (Yes or No), gender, generation, birth year, location, employment status, job category, and education level. Some of these questions provided data for the independent variables used in the second stage of this study. Permission to use the ESA was granted by Hill (see Appendix C).

The Employability Skills Assessment

In order to assess South Korean work ethic, data were collected by using the Korean Employability Skills Assessment (KESA). This instrument was developed by translating the Employability Skills Assessment (ESA; Hill, 1995) into Korean and was named the KESA by the researcher. The ESA was developed by Hill for students or trainees to assess their own work ethic and work attitudes as well as for adults in various occupations (Hill, 1995). This instrument was developed as an alternative form of the Occupational Work Ethic Inventory (OWEI), a 50-item instrument developed by Petty in 1993, consisting of short descriptors. Interpretation of the OWEI by Hill and Petty was based on a factor analysis that identified four factors: interpersonal skills, initiative, being dependable and a fourth factor consisting of reversed descriptive words. Responses on the OWEI were recorded using a Likert-type scale with seven choices: 1 = *never*, 2 = *almost never*, 3 = *seldom*, 4 = *sometimes*, 5 = *usually*, 6 = *almost always*, and 7 = *always* (Hill & Petty, 1995).

Since the OWEI was developed, the instrument has been used in many studies. The OWEI was translated into Korean and used by Kim (2007); this version was named the Korean OWEI (KOWEI). Kim conducted a factor analysis of the KOWEI to identify themes in Korean workers' responses using data collected in Korea. Kim identified six factors: *성실성*

(conscientiousness), 유능함 (efficiency), 유쾌함 (pleasantness), 겸손함 (modesty), 헌신 (devotion), and reversed items. Kim found that the six factors completely explained all 50 items in the KOWEI and accounted for 46.79% of the total variance.

The ESA up to this point has not been translated into Korean. The ESA was developed using the same factors that were identified by prior research that used the OWEI. The ESA is comprised of 23 brief statements. These statements were based on the OWEI items that were above .45 loading and did not significantly cross load on the OWEI factor analysis. Subscales for the ESA followed the three constructs of the OWEI: interpersonal skills, initiative, and being dependable (Hill, 1995; Park & Hill, 2016). The ESA uses a 7-point Likert scale for rating each item with 1 (*never*); 2 (*almost never*); 3 (*seldom*); 4 (*sometimes*); 5 (*usually*); 6 (*almost always*); and 7 (*always*).

The ESA has been widely used in educational and training practices that are related to work ethic. For example, Hill has developed a website called *The Work Ethic Site* (URL: http://workethic.coe.uga.edu/). The purpose of the Work Ethic Site is to provide information and materials related to work ethic, affective work competencies, and employability skills for work force development (Hill, 2014). The main purpose of the site is to serve both educators and human resource professionals (Hill, 2014). The Work Ethic Site provides online versions of both the OWEI inventory and the ESA inventory that are freely available for anyone to complete. As of August 20, 2015 the online version of the OWEI had been used 237,892 times, and the online version of the ESA had been used 55,699 times. Both versions execute using a PERL script and save response data on a University of Georgia server (Hill, 2015; Park & Hill, 2016).

Researchers, including graduate students and faculty as well as teachers, coordinators, coaches, and directors across the world have inquired about using the ESA in their curriculum

activities. Records of these requests are available in the Work Ethic Curriculum Materials notebooks that are maintained in Hill's office at UGA. One of the first uses of the ESA for the research purposes was that of Wilson, a professor emeritus of counseling at the University of Cincinnati with over 35 years of service (Hill, 2014).

Wilson performed a statistical analysis in 2002 based on the ability of 69 long-term welfare recipients who had histories of chronic failures to profit from job programs. He used the ESA to collect data and reported scale reliabilities and inter-correlations. Factor 1 (interpersonal skills) had high reliability with coefficient $\alpha = .82$. The initiative and being dependable subscales had relatively low reliability with coefficient $\alpha = .63$, and coefficient $\alpha = .64$ each. Coefficient α for both subscales of initiative and being dependable would have been improved by eliminating some items. Instrument revisions have not been made but the items identified by Wilson received close scrutiny as they were translated for the KESA (Hill, 2014). Park and Hill (2016) performed a confirmatory factor analysis (CFA) on data collected through the work ethic site testing content validity and reliability of the ESA. The results demonstrated a significant overall relation between the ESA factors: interpersonal skills, initiative, and being dependable and showed that the three-factor model of the ESA was acceptable for the observed data. The reliabilities were .85, .81, and .81, respectively.

When compared to the OWEI, the ESA instrument consists of fewer items (23) than the OWEI (50 items); therefore, the ESA may be quicker for a respondent to complete than the OWEI. In addition, the ESA is written in sentences and is designed for English readers using vocabulary that is approachable and easy to understand. It was anticipated that after proper translation into Korean, the ESA would be an approachable instrument for assessing work ethic across a wide range of age levels in South Korea.

The participants for this study were South Korean, so the ESA was translated into the Korean language and was named the KESA by the researcher. In order to translate the English version of this instrument into Korean, Brislin's (1970) back-translation method was used (Brislin, 1970). Back-translation is a common method used by cross-cultural researchers to assure equivalence between English and Korean versions of a document. First, the researcher translated the English version into Korean and asked other persons who were bilingual in English and Korean to retranslate the Korean version back into English. This English version was compared to the original and edits were made to a revised Korean version where discrepancies were noted. This process was repeated until a highly consistent version resulted each time the instrument was translated back to English.

Independent Variables

The independent variables for the second stage of this study were three generation groups: Baby Boomers (1955-1963), Generation X (1964-1980), and Millennials (1981-1999); and gender: women and men.

Dependent Variables

The dependent variables for this study were determined by the results of an exploratory factor analysis for the KESA. The subscales of the KESA were labeled using factors identified considering the past OWEI, the KOWEI, and the ESA. The original ESA consists of three dimensions: interpersonal skills, initiative, and dependability. It was anticipated that the KESA would have a similar structure but that would be determined during the analysis phase of the study.

Data Collection Procedures

In order to conduct this research, approval was acquired from the Institutional Review Board (IRB) at the University of Georgia (UGA). The application was submitted in June, 2015. The approval was issued in July, 2015, the researcher started to collect data on July 20, 2015 and ended on August 10, 2015.

The method for selecting participants was non-probability convenience sampling. In convenience sampling, every member in the population does not have an equal chance to be selected as a participant (Johnson & Christensen, 2014). Instead, convenience sampling includes people who are available or want to volunteer or can be easily recruited and are willing to participate in the research survey (Johnson & Christensen, 2014). In other words, participants are selected not by chance but by other means such as personal contacts. For this study, the researcher used social and professional relationships from previous and current work experiences and social networks to initiate the collecting of data.

In order to secure a range of respondents to represent the population better, the researcher purposefully put a demographic question in the instrument to stratify potential participants into subgroups based on their occupations. Categorizing occupations followed the categories of the Korean Standard Classification of Occupations (KSCO), which Statistics Korea revised as the 6th version and published in 2007. The Korean Standard Classification of Occupations (KSCO) has recommended 10 aggregate groups for organizing jobs based on the tasks and duties required in the job to earn money (Korean Standard Statistical Classification, 2015). In order to represent each subgroup, there was a goal of more than thirty (30) respondents from each occupation and a goal of four hundred (400) total respondents. The ten groups included in the Korean Standard Classification of Occupations are:

- Managers
- Professionals and related workers
- Clerks
- Service workers
- Sales workers
- Skilled agricultural, forestry and fishery workers
- Craft and related trades workers
- Equipment, machine operating and assembling workers
- Elementary Workers
- Armed Forces

The researcher purposefully chose initial contact people who were involved with each stratified group so they could collect data from potential participants who represented each occupational subgroup. Literature suggested that when a third party administers an instrument, efforts should be made to have the administration as user-friendly as possible for both participants and administrators of the survey (Phillips & Stawarski, 2008). The initial contact people are listed including their names, titles of their professions, and expected occupations of potential participants (see Appendix G). The initial contact people consisted of the researcher's relatives, close friends who were working in various fields, former students that the researcher taught, and acquaintances. The initial contact people were not assigned to collect a certain number of responses. Instead, they sent an email to each potential participant including as many persons as they could.

A cover letter for data collection (see Appendices E and F for both English and Korean versions) including a brief introduction of the study, the purpose and significance of the study,

and a brief discussion of how confidentiality would be maintained was typed in Korean and saved as a PDF file. The KESA instrument was also typed in Korean using a Google Survey Form by the researcher including a consent question, demographic questions such as gender, age, and occupation at the beginning. For the question asking participants' occupation, they were asked to choose one occupational group out of ten. Both the PDF file for the cover letter and the link for the Google Survey Form were sent to initial contact people via email so that they could distribute them to potential participants. Responses on the questionnaire were electronically saved as Microsoft Excel files.

In order for the researcher to check the number of respondents from each occupational subgroup, initial contact people of each occupational group received the same survey form but a different URL link. For this, the researcher made copies of the original KESA Google Survey Form and assigned a different link to each occupational subgroup. Respondents from each occupational subgroup were saved in a different Excel file so that the researcher could count the number of respondents from each occupational subgroup. In order to reach the goal of four hundred (400) valid respondents, the researcher checked the number of respondents from each subgroup as well as the total number of respondents. Once the number of valid respondents from each occupational subgroup went over thirty (30) respondents and the total number of respondents reached the goal of four hundred (400), the researcher asked the initial contact people of the subgroup to stop distributing the survey link. Even though the total respondents were over 400 in two weeks after the survey began and most sub groups reached the goal of thirty, there were some subgroups that did not reach 30. To seek additional respondents, the researcher maintained the links open until August 10th, 2015.

The researcher spent three weeks in collecting data. All the initial contact people received the PDF file and the survey link at the same time and spent up to three weeks administrating the survey. Once a week, the researcher sent a reminder to the initial contact people asking them to send a reminder of the survey to potential respondents. During the fourth week, the researcher sent a Thank You email to the initial contact people.

Data Analysis

Based on the research questions, data analysis for this study included two stages: an exploratory factor analysis and a reliability test psychometric properties of the KESA, and a multivariate analysis of variance (MANOVA).

Data Coding for Descriptive Statistics

Data collected by using the KESA were electronically saved into Google Excel files. Since the electronic survey form was designed so that participants must check one choice under each item question, and then were allowed to go to the next item, missing data were not found. Once data collection was over, all the Google Excel files were put into one file and another procedure was performed to inspect for bad data, such as all the same scores of the KESA (e.g., all 3333, or all 5555), and there were no bad responses detected. For primary data analyses, SPSS 22, Mplus 7.11 (Muthén & Muthén, 2006), and SAS 9.4 were considered for use. Since there were no big differences among the different software options, SAS 9.4 statistical analytic results were employed. Mplus is recommended for categorical data in nature for it is a powerful statistical program, and enables researchers to estimate models containing latent, or unobserved variables including both continuous and categorical variables (Indiana University, 2014; Wirth & Edwards, 2007). However, in this study the KESA was not binary categorical data, but 7- point Likert scale and 23 items, which can be considered scale data and using different software tools

did not seem to make big differences (Moustaki, 2007). Descriptive statistics were used to report the essential characteristics of the data collected.

To test sampling adequacy, the Kaiser-Meyer-Olkin (KMO) tested whether a sufficient number of responses were collected. According to Kaiser (1974), values of significance greater than 0.5 are barely acceptable. Hutchen and Sofroniou (1999) agreed that values between 0.5 and 0.7 are mediocre, values between 0.7 and 0.8 are good, values between 0.8 and 0.9 are great, and values above 0.9 are excellent. Bartlett's measure was also used to test the null hypothesis that the original correlation matrix was an identity matrix, which meant that all correlation coefficients would be zero (Field, 2009).

Exploratory Factor Analysis

In order to properly answer the first research question, factor analysis was selected as a data analysis method. Factor analysis (FA) is a technique that enables researchers to identify the underlying constructs that cannot be directly observed (Mulaik, 2009) and requires a researcher's subjective decisions by its nature (Benson & Nasser, 1998). Past studies indicated that work ethic was multidimensional (e.g., Hill & Petty, 1995; Mann, Taber, & Haywood, 2013; Miller, Woehr, & Hudspeth, 2002). Exploratory factor analysis identified response patterns of South Korean participants in South Korea and identified a new set of factors for work ethic.

R-matrices were produced for the factor analysis. An R-matrix is a correlation matrix which contains a table of correlation coefficients between each pair of variables (Mulaik, 2010). First, principal component analysis (PCA; all ones in the diagonal elements of an R-matrix), followed by both varimax rotation and direct oblimin methods with eigenvalues greater than 1, were performed prior to an exploratory factor analysis using SPSS 22, Mplus 7.11, and SAS9.4 software tools. This technique of PCA provided an objective solution to the number of factors to

rotate serving as a guide to the most appropriate number of meaningful factors (Benson & Nasser, 1998; Dunteman, 1989; Kaufman, 1975). Then, a variety of factor solutions and rotations were tried including principal axis factoring (PAF) and the maximum likelihood (ML). The maximum likelihood method estimates the number of factors, and efficient computer programs now exist that enable researchers to obtain these factors rather easily (Johnson & Wichern, 2007). A principle axis factoring (PAF; squared multiple correlations in diagonal as final estimates of communalities) was performed, followed by the varimax factor rotation method to generate 1-, 2-, 3-, 4-, and 5-factor solutions. This orthogonal technique was the main method used to examine the factor structure of the KESA, meeting the simple structure principle. To define a factor, loadings of .32 were used as other researchers have suggested (Benson & Nasser, 1998). Then, principal axis factoring (communalities in the diagonal) were conducted, followed by an oblique rotation, direct oblimin, of 1-, 2-, 3-, 4-, and 5- factor solutions in the same procedures used in the varimax rotation method. This additional rotation method helped to assess whether the factor structure with the varimax rotation was stable or not. Examining all the results, the results of a principal axis factoring were used to decide the number of factors assuming that the common factors and the specific factors were normally distributed. Next, extracted factors were examined, and the final constructs of the KESA were labeled. After performing an exploratory factor analysis, coefficient alphas (Cronbach alpha, α) for each sub-scale were calculated in order to measure the reliability of the KESA.

Descriptive Statistics

For the second research question, descriptive statistics including mean and standard deviation were used. The goal of descriptive statistics was to describe and summarize a particular data set in order to convey the key characteristics (Johnson & Christensen, 2014). The common

procedures of descriptive statistics are (a) to identify a population or sample; (b) identify variable(s); (c) collect data; and (d) describe the data (Mendenhall & Sincich, 2012).

Multivariate Analysis of Variance (MANOVA)

For the third research question, a multivariate analysis of variance (MANOVA) was completed to examine the relationship between work ethic and gender, generation, and interaction of gender and generation. MANOVA can be used when there are several dependent variables with one or two independent variables, and when interactions between independent variables are examined (Field, 2009). There are assumptions in MANOVA. The first assumption is the normal distribution of a dependent variable within groups. Another assumption, linearity, is that all pairs of dependent variables are linearly related. Another assumption, homogeneity of variance, is that the dependent variables have equal levels of variances across the independent variables. The last assumption, the homogeneity of variances and covariances, is that the intercorrelations among factors as well as homogeneity of variances among dependent variables are homogeneous (Dunteman, 1984). The factors of the KESA were expected to be more than two, and they represented the dependent variables. Gender with two levels and generation with three levels comprised the independent variables. In order to test for the homogeneity of variance assumption as a preliminary test for a MANOVA, Levene's test, Brown-Forsythe *F,* and Welch's *F* were calculated. The homogeneity of variance assumes that the variances in each group for each dependent variable and the correlation between any two dependent variables are the same in all groups, which is called "homogeneity of covariance matrices" (Field, 2009, p. 603). The total variability can be described in the following:

$$SS_T = SS_M + SS_R$$

, where SS_T means the total variability, SS_M indicates variance explained by the experiment, and SS_R is unexplained variance.

In this study, the two independent variables were generation and gender. Variable 1, Generation, has three levels: Baby Boomers, Generation X and Millennials, and Variable 2, Gender, has two levels: Male, and Female. The following shows the total variability for research question three:

$$SS_{Total} = (SS_{Gender} + SS_{Generation} + SS_{Gender \times Generation}) + SS_{Within\ Error}.$$

Each portion of the equation above can be calculated in the following way.

$SS_T = s^2_{grand}$ (N -1), where N is the total number of participants,

$SS_{Gender} = \sum n_k \ (\bar{x}_k - \bar{x}_{grand})^2$,

$SS_{Generation} = \sum n_k \ (\bar{x}_k - \bar{x}_{grand})^2$,

, where n is the number of participants in each group.

$SS_R = s^2_{group\ 1}\ (n_1 - 1) + s^2_{group\ 2}\ (n_2 - 1) + s^2_{group\ 3}\ (n_3 - 1) + \ldots + s^2_{group\ n}\ (n_n - 1)$, and

$SS_{Gender \times Generation} = SS_M - SS_{Gender} - SS_{Generation}$.

The third research question was also described in a linear regression model:

Work ethic = $(b_0 + b_1 Gender_i + b_2 Generation_i + b_3 Interaction_i) + \varepsilon_i$.

Wilk's lamda (λ) was produced to interpret the results of a MANOVA. Wilk's λ indicates the variance that is not explained by the dependent variables (Dunteman, 1984). Table 3.1 shows the coding scheme for the MANOVA for the research question three. There were two independent variables and possible interaction between the two variables. Gender had two levels: women and men and were coded as dummies: female = 0, male = 1; Generation has three levels and were coded: Baby Boomers = 1, Generation X = 2, and Millennials = 3. The F test was applied to identify the mean differences for the independent variables. The F-ratio (Fisher-Snedecor F) is a

measure of the ratio of the variance explained by the model and the variation explained by unsystematic factors (Field, 2009). F-ratio can be used to compare two estimates of variance, and it is mainly used to compare groups of means and to examine the combined effect of several factors in analysis of variance (Field, 2009).

Table 3. 1

Coding Scheme for a MANOVA

		SS	MS	F	*P*-value	Effect size
Between	Generation	$\sum \mathrm{n_k}\ (\bar{x}_k - \bar{x}_{\mathrm{grand}})^2$	$\frac{SS_{\mathrm{Generation}}}{df_M}$	$\frac{\mathrm{MS}_{Generation}}{\mathrm{MS_R}}$		
	Gender	$\sum \mathrm{n_k}\ (\bar{x}_k - \bar{x}_{\mathrm{grand}})^2$	$\frac{SS_{\mathrm{Gender}}}{df_M}$	$\frac{\mathrm{MS_{MGender}}}{\mathrm{MS_R}}$		
	Generation*Gender	$\mathrm{SS_M}$ - $\mathrm{SS_{Gender}}$ - $\mathrm{SS_{Gen.}}$	$\frac{SS_{\mathrm{Interatcion}}}{df_M}$	$\frac{\mathrm{MS}_{Interaction}}{\mathrm{MS_R}}$		
Within	Residual	$s^2_{group\ 1}\ (n_1$ -1) +..+$s^2_{group\ n}\ (n_n$ -1)	$\frac{SS_{\mathrm{R}}}{df_R}$			
Total		s^2_{grand} (N -1)				

Note. SS = sums of squares. MS = mean square.

The F-ratio can be calculated by dividing the model mean squares by the residual mean squares:

$$\mathrm{F} = \frac{\mathrm{MS_M}}{\mathrm{MS_R}}, \text{ and where}$$

$$\mathrm{MS_M} = \frac{SS_{\mathrm{M}}}{df_M}, \text{ and}$$

$$\mathrm{MS}_R = \frac{SS_{\mathrm{R}}}{df_R}.$$

When degrees of freedom are small, larger F values are required to reach significance (Field, 2009). To make inferences about the practical significance of the results, effect sizes were

calculated. An effect size is a statistical measure of the strength of a relationship between the dependent and independent variables. It indicates how big an effect is present. The effect size statistics can help interpret the results of a study from a practical point of view (Gall, Gall, & Borg, 2007). It indicates how big an effect is present. In other words, the higher the effect size is, the greater the difference is between the two groups. Cohen's standardized effect size (Cohen's *d*), eta squared (η^2), omega squared (ω^2), Cramer's V, and the correlation coefficient squared (r^2) are some effect size indicators (John & Christensen, 2014). The higher the effect size is, the greater the difference is between the two groups.

Cohen's rule of thumb for effect size (denoted in *d*) suggested that small = .2; medium = .5; large = .8 and for effect size eta squared (η^2), small = .01; medium = .06; and large = .15 (Field, 2009). In this study, omega squared (ω^2) was applied since it is usually used when there are two groups. Table 3.2 describes the data analysis strategy of planned statistical tests for this study. A post hoc test was performed to examine if there were any significant effects for generation since that variable had three levels. The Tukey HSD test was conducted for this. Table 3.2 shows the planned statistical tests.

Table 3. 2

Analysis Strategy of Planned Statistical Tests

Research Questions	IV	DV	Analyses
What constructs comprise the work ethic of Korean people in South Korea as measured by a Korean translation of the ESA (KESA)?	N/A	N/A	PCA (KMO and Bartlett's test of sphericity, eigenvalues), PAF & ML (*R*-marix, communalities, a scree plot, model fit indices, factor loadings, varimax factor rotation, number of factors, labeling, & interpretation, and correlation coefficient, α
Describe the work ethic of South Korean measured by the KESA	Korean people	The subscales of the KESA extracted	Mean, *SD*, frequency, skewness, & kurtosis
Are there any significant effects of gender, generation (Baby Boomers, Generation X, and Millennials) and the interaction of gender and generation on work ethic detected?	Gender (Categorical) Female = 0, Male = 1/ Generation (categorical: three levels)	The subscales of the KESA extracted	Levene's test, MANOVA (Wilk's lambda, pairwise comparisons, SS, *df*, MS, *F*-ratio, *p*-value, CI, partial η^2, Tukey HSD test

Note. EFA: exploratory factor analysis, IV: independent variable, DV: dependent variable, PCA: principal component analysis, PAF: principal axis factor analysis, ML: maximum likelihood estimate, *SD*: standard deviation, *df*: degree of freedom, CI: confidence interval, MANOVA: multivariate analysis of variance, SS: sums of squares, MS: mean squares.

CHAPTER 4

ANALYSIS AND RESULTS

The purpose of this research was to provide a Korean Employability Skills Assessment (KESA) by translating the Employability Skills Assessment (ESA; Hill, 1995) into Korean and to use this measure to compare the work ethic of South Korean Millennials, Generation X and Baby Boomers and men and women in the South Korean workforce. More specifically, this research attempted to examine separate correlations between work ethic and generation, work ethic and gender, and any interactions between generation and gender for work ethic. An exploratory factor analysis was conducted to identify appropriate factors for interpreting the constructs of the KESA. Next, the work ethic of South Koreans as measured by the KESA was examined. Then, participants from three generations of people in South Korea—Baby Boomers (1995-1963), Generation X (1964-1980), and Millennials (1981-1999)—were compared based on the subscales of the KESA. Comparisons were also made between South Korean men and women.

Research Question One

The first stage of this research study focused on identifying the constructs of work ethic of Korean people measured using the KESA. The research question was:

1. What constructs comprise the work ethic of Korean people in South Korea as measured by a Korean translation of the ESA (KESA)?

Exploratory Factor Analysis

Sample and Demographic Variables

Table 4.1 displays characteristics of the sample used in this study. All of the respondents were 18 years old or over, employed in South Korea, and able to respond to instrument items written in the Korean language. The researcher communicated with 22 initial contact persons, and the researcher also recruited participants. Thus, 23 people worked to recruit participants. The 23 initial contact people sent the electronic KESA survey links to 1562 people in total. Out of them, 946 responded to the KESA survey questions with a response rate of around 61%. Information about the initial contact people and the respondents who each contact person recruited are presented in Appendix G. Data were collected using an electronic survey form that required all items to be completed before submitting so there no missing values. The researcher randomly divided the data set into two parts: one for this study and the other for a subsequent study, which will be a confirmatory factor analysis for the KESA. The half of the data were 473 people. Out of them, 23 respondents were born before 1955. Since this study focused on three defined generations of Korean workers, the surveys for these older respondents were removed. Thus, in this study, 450 usable responses were available. Demographic variables included gender, generation, employment status, education level, and occupation. There were 214 (47.56%) female respondents, and 236 (52.44%) male respondents, and this composition well represented the contemporary South Korean gender ratio. The overall ratio of males and females was 1.00 in South Korea in 2015 (Korean Minister of the Interior, 2015). However, for the age group between 0 and 59, the male population exceeds the female population in South Korea (Korean Ministry of the Interior, 2016). By generation, there were 101 (21.1%) Baby Boomer respondents, 218 (48.4%) Generation X respondents, and 131 (27.7 %) Millennial respondents.

A total of 228 (50.7%) were full-time employees, 58 (12.9%) were part-time employees, 91 (20.2%) were self-employed, and 73 (16.2%) were not employed.

Table 4.1

Demographic Variables of the Total Sample

Variable	Category	*n*	%
Gender	Women	214	47.6
	Men	236	52.4
	Missing	0	0
Generation	Baby Boomer	101	22.4
	GX	218	48.4
	Millennial	131	29.1
Employment status	Full-time	228	50.7
	Part-time	58	12.9
	Employed as owners	91	20.2
	Unemployed	73	16.2
Education level	Middle-School	6	1.3
	High-School	86	19.1
	Junior-College	57	12.7
	Bachelor	180	40.0
	Master	83	18.4
	Doctorate	38	8.4
Occupations	Managers	47	10.4
	Professionals	138	30.7
	Clerks	71	15.8
	Service-workers	43	9.6
	Sales-workers	37	8.2
	Skilled-agricultural-forestry	3	.7
	Craft-trades-workers	22	4.9
	Machine-operating	5	1.1
	Elementary-Workers	9	2.0
	Armed-Forces	1	.2
	Housekeeper	41	9.1
	Unemployed	18	4.0
	Undergraduate-Students	15	3.3
Total		450	100

Note. Baby Boomers in Korea include people who were born between 1955 and 1963, and Generation X (GX) were born between 1964 and 1981, and Millennials were born between 1982 and 1999. The category of occupation was based on the ten groups of the Korean Standard Classification of Occupations (KSCO, 2015) and categories of housekeeper, unemployed, and undergraduate students were separately added to occupations.

Respondents' demographic data for level of education showed that 38 (8.4%) had doctorate degrees, 83 (18.4%) had master's degrees, 180 (40%) had bachelor's degrees, 57 (12.7%) finished junior colleges (2- or 3-year colleges), 86 (19.1%) had high school diplomas as their highest educational degree and 6 (1.3%) respondents finished middle school as their highest level of education. Categorized by occupation, 138 (30.7%) were professionals, 47 (10.4%) were managers, 71 (15.8%) were clerks, 43 (9.6%) were service workers, 37 (8.2%) were sales workers, 22 (4.9%) were craft workers, and the others were machine-operators, elementary school workers, armed forces, housekeepers, undergraduate students, and some were unemployed. Thus, the sample consisted of people from various occupations, different generations, and different educational levels.

Descriptive Statistics

Descriptive statistics including means, standard deviations, skewness, and kurtosis for each item of the KESA were calculated (see Table 4.2). In order to check the modality of the distribution and detect outliers, both skewness and kurtosis were analyzed. Next, the correlation matrix (see Appendix A) was used to check the correlation between instrument items.

Kurtosis can be defined as the degree of peakedness of a distribution, and described as a normalized form of the fourth central moment of a distribution indicating data's degree of outlierness or data's peakedness (Liang et al., 2008). If the value of skewness is less than 2.0, the items are normally distributed. If the value of kurtosis is less than 7.0, variables are considered normally distributed (DeCarlo, 1997). All the values of skewness in Table 4.2 indicated that items of the KESA can be considered normally distributed. The values of kurtosis of all the items are not greater than .70. The correlation matrix was used to check the correlation between test items.

Table 4.2

Descriptive Statistics of Items of the KESA (N=450)

			Skewness		Kurtosis	
Item	Mean	*SD*	Statistic	Std. Error	Statistic	Std. Error
Q1	5.18	1.201	-.737	.115	1.067	.230
Q2	5.37	1.367	-.739	.115	.610	.230
Q3	4.44	1.223	.313	.115	-.223	.230
Q4	5.05	1.084	-.660	.115	.602	.230
Q5	5.40	.965	-.371	.115	.354	.230
Q6	5.16	1.066	-.334	.115	.198	.230
Q7	5.18	1.104	-.182	.115	-.363	.230
Q8	5.61	1.016	-.554	.115	.370	.230
Q9	5.39	1.013	-.858	.115	1.767	.230
Q10	5.07	1.082	-.588	.115	.636	.230
Q11	5.62	.920	-.393	.115	.309	.230
Q12	5.27	1.024	-.708	.115	1.201	.230
Q13	5.42	1.023	-.860	.115	1.520	.230
Q14	5.30	.909	-.401	.115	.380	.230
Q15	5.12	.992	-.288	.115	.057	.230
Q16	4.88	1.350	-.426	.115	-.357	.230
Q17	5.51	.901	-.793	.115	1.748	.230
Q18	5.68	.954	-.463	.115	.028	.230
Q19	5.17	1.111	-.597	.115	.405	.230
Q20	4.71	1.231	-.780	.115	.611	.230
Q21	4.94	.917	-.351	.115	.871	.230
Q22	4.95	1.037	-.371	.115	.158	.230
Q23	5.13	.917	.034	.115	-.130	.230

KMO and Bartlett's Tests

The sample used for this study had 450 respondents, which was over 10 times the number of instrument items as recommended by Kass and Kass (1979). Other researchers have recommended a minimum of 300 respondents for conducting a factor analysis (e.g., Comrey & Lee, 1992; Tabachnick & Fidell, 2007). Kaiser-Meyer-Olkin (KMO) actually developed a test of sampling adequacy (Kiaser, 1970). In this study, a Kaiser-Meyer-Olkin (KMO) test of sampling adequacy was performed to test the sampling adequacy. The value of the KMO test of this data set was .904, which was considered excellent (Hutchen & Sofroniou, 1999). This demonstrated

that the sample size collected for this study was enough to conduct a factor analysis. Bartlett's test of sphericity was also employed to determine if the original data set was eligible for factoring. Bartlett's test of sphericity tests the null hypothesis that the original correlation matrix is an identity matrix, which means that all correlation coefficients between variables would be zero (Field, 2009). Since the results on Bartlett's test were highly significant with $p = .000$ (see Table 4.3), the null hypothesis was rejected, which meant that the *R-matrix* (aka. correlation matrix, see Appendix A) was not an identity matrix, and there were some relationships between the variables. Thus, Barnett's test of sphericity χ^2 (253) = 3440.5119, $p = .000$, indicated that correlations between items existed with the data set collected. All of the criteria used to evaluate the adequacy of the sample showed that a factor analysis for the data set collected should yield reliable factors.

Table 4.3

Sampling Adequacy and Significance Tests

Kaiser's measure of sampling adequacy (MSA): Overall MSA	.904
Chi-Square	3440.5119
df	253
Sig.	.000

Note. *df* = degrees of freedom. Sig. indicates *p*-value. Total observations = 450.

Factor Extraction Method

As an initial step, several factor extraction methods were used to find the best possible number of factors. First, principal component analysis (PCA) was performed with both varimax rotation and direct oblimin of factors with eigenvalues greater than 1 in order to obtain an objective determination of the number of factors to rotate. This technique can serve as a "guide

to the most appropriate number of meaningful factors" (Kaufman, 1975, p. 136). Principle component analysis explains the total variation in the observed variables on the basis of the maximum variance properties of principal components and initially assumes that all variance is common so that before extraction the communalities are all 1. Thus, in PCA, components include both the common variance of variables and the unique variance (Mulaik, 2010). This technique is sometimes adopted prior to additional factor analytic procedures to determine the dimensionality of the common factor space (Dunteman, 1989). This technique was used by Petty and Hill (2005) to determine the number of meaningful factors for the OWEI. Next, principal axis factoring (PAF) and maximum likelihood (ML) analyses with both varimax and direct oblimin were performed without determining the number of factors to be retained following the same procedures of PCA. The results of the PCA, PAF and ML analyses were based on all 23 items and are presented in Tables 4.4. Factor structures were assessed to examine (a) "cross-loading items" (Krishnan, 2011, p. 10) to find items that loaded at .32 or higher on two or more components (Costello & Osborne, 2005; Tabachnick & Fidell, 2011); and (b) items that did not load on any of the factors (Park, 2006). As reviewed in Chapter 2 researchers on factor analysis recommended loading values greater than .40 for PCA and .32 for common factor models. For this study, loading values greater than .32 were set to be more liberal and to include as many items as possible.

Communality and Factor Extraction Method

Communalities represent the amount of variance in each variable that can be explained by the retained factors. Three extraction methods were compared: principal component analysis, principal axis factoring, and maximum likelihood (ML). Principal component analysis uses 1.0 in matrix diagonals as the initial value of the communalities in the correlation matrix R, which

means that 100% of the variance is to be factor analyzed, while both principal axis factoring and maximum likelihood extraction methods do not use the value of 1.0 as the initial communalities. Instead, both principal axis factoring and maximum likelihood extraction set the initial communality estimate for each variable to its squared multiple correlation with all other variables (SAS 9.4). Common factor models such as principal axis factoring (PAF) and maximum likelihood (ML) factor analysis are suitable for examining theoretically latent constructs, while principal component analysis is for determining the dimensions of an instrument with principal components. However, PAF uses "a least-squares estimation of the common factor model" (de Winter & Dodou, 2012, p. 696), making "no assumption about the type of error", and minimizing the unweighted sum of the squares" (de Winter & Dodou, 2012, p. 696), while ML uses the normal distribution theory and assumes that "all error is sampling error" (de Winter & Dodou, 2012, p. 696).

Using SAS 9.4, principal component extraction method produced communalities that ranged between .347 and .692, and the mean of communalities was .545. By default, SAS 9.4 specified the prior communality estimate for each variable to its squared multiple correlation (SMC) with all other variables for computing prior communality estimates for principal axis factoring (PAF; also known as principal factor analysis: PFA) and maximum likelihood (ML) (SAS 9.4, User's Guide). Using SMC, extracted communalities using principal axis factoring ranged between .182 and .607, and the mean of communalities was .384. Maximum likelihood extraction method produced communalities that ranged from .194 to .758, and the mean was .412. Although principal component analysis is useful for determining dimensions, researchers on factor analysis agree that this method is not proper for common factor analysis (e.g., Crocker & Algina, 1986; Mulaik, 2010). After a PAC, both PAF and ML were examined, and then

maximum likelihood (ML) was chosen for use as a common factor model in this study. Table 4.4 shows comparisons of communalities between PCA, ML, and PAF.

Table 4.4

Comparison of Communalities between PCA, PAF, and ML

	Principal component analysis		PAF		Maximum likelihood	
Item	Initial	Extraction	Initial	Extraction	Initial	Extraction
1	1.000	.347	.303	.273	.303	.258
2	1.000	.370	.232	.194	.232	.198
3	1.000	.622	.200	.193	.200	.261
4	1.000	.506	.375	.379	.375	.363
5	1.000	.558	.434	.462	.434	.477
6	1.000	.574	.386	.359	.386	.506
7	1.000	.614	.344	.364	.344	.306
8	1.000	.478	.441	.424	.441	.430
9	1.000	.526	.471	.455	.471	.436
10	1.000	.449	.304	.326	.304	.339
11	1.000	.611	.511	.547	.511	.559
12	1.000	.590	.465	.450	.465	.505
13	1.000	.578	.345	.311	.345	.422
14	1.000	.692	.610	.607	.610	.758
15	1.000	.526	.436	.436	.436	.463
16	1.000	.496	.133	.182	.133	.194
17	1.000	.425	.346	.353	.346	.352
18	1.000	.588	.472	.489	.472	.504
19	1.000	.599	.227	.298	.227	.380
20	1.000	.610	.258	.297	.258	.367
21	1.000	.623	.480	.512	.480	.537
22	1.000	.505	.393	.338	.393	.385
23	1.000	.638	.547	.569	.547	.637
Mean		.545	.379	.384	.303	.412

Note. Extraction methods: Principal component analysis, principal axis factoring, and maximum likelihood. By default, SAS 9.4 used SMS function to produce prior and final communalities for both PAF and ML.

Table 4.5

Total Variance Explained (Eigenvalues) by a PCA

Eigenvalues of the Correlation Matrix: Total = 23 Average = 1				
Factors	Eigenvalue	Difference	Proportion	Cumulative
1	**7.244**	5.86872684	0.3204	**0.3204**
2	**1.537**	0.13011331	0.0653	**0.3857**
3	**1.423**	0.19316554	0.0596	**0.4453**
4	**1.227**	0.09382626	0.0512	**0.4965**
5	**1.095**	0.08306610	0.0471	**0.5436**
6	.992	0.08979171	0.0435	0.5871
7	.867	0.08868492	0.0396	0.6267
8	.822	0.02605979	0.0358	0.6625
9	.794	0.07895477	0.0346	0.6971
10	.718	0.02643178	0.0312	0.7283
11	.701	0.03389221	0.0300	0.7583
12	.663	0.03072941	0.0286	0.7869
13	.652	0.06390291	0.0272	0.8141
14	.542	0.03343379	0.0244	0.8386
15	.536	0.00781226	0.0230	0.8615
16	.523	0.05513942	0.0227	0.8842
17	.476	0.00763586	0.0203	0.9045
18	.448	0.04381640	0.0199	0.9244
19	.423	0.00971567	0.0180	0.9424
20	.385	0.06385915	0.0176	0.9600
21	.344	0.02188943	0.0148	0.9748
22	.327	0.05905903	0.0139	0.9887
23	.263		0.0113	1.0000

Note. A principal component analysis was used to produce eigenvalues (Prior communality estimates = 1.0), and produced by using SAS 9.4. Eigenvalues greater than 1.0 and their corresponding cumulative variances explained are in boldface.

Table 4.6

Initial Eigenvalues and Rotation Sums of Squared Loading by a PAF and ML

Factor	Initial Eigenvalue			Rotation sums of squared loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	**7.244**	31.494	31.494	**2.493**	**10.837**	10.837
2	**1.537**	6.681	38.175	**2.398**	**10.425**	21.262
3	**1.423**	6.186	44.361	**1.875**	**8.152**	29.415
4	**1.227**	5.333	49.694	**1.800**	**7.827**	37.242
5	**1.095**	4.761	**54.454**	**1.074**	**4.670**	**41.912**
6	.992	4.312	58.767			
7	.867	3.770	62.537			
8	.822	3.574	66.111			
9	.794	3.450	69.561			
10	.718	3.120	72.681			
11	.701	3.048	75.729			
12	.663	2.881	78.611			
13	.652	2.833	81.444			
14	.542	2.356	83.799			
15	.536	2.332	86.132			
16	.523	2.276	88.408			
17	.476	2.069	90.477			
18	.448	1.949	92.426			
19	.423	1.841	94.267			
20	.385	1.673	95.940			
21	.344	1.494	97.435			
22	.327	1.420	98.855			
23	.263	1.145	100.000			

Note. A principal axis factoring and a maximum likelihood were performed to produce eigenvalues (Prior communality estimates were not 1.0). Eigenvalues greater than 1.0 and their corresponding rotation sums of squared loading variance explained are in boldface.

Method for Factor Rotation

In order to identify what variables loaded onto each factor, orthogonal rotation methods were employed. Orthogonal rotations usually are employed when there are no theoretical assumptions that factors or latent variables are highly correlated, while oblique methods are used when high correlations exist between theoretical constructs (Mulaik, 2010). Since there were no theoretical assumptions that the KESA had a certain number of constructs or how they were correlated with each other, Kaiser's varimax rotation method, which is one of orthogonal rotation methods, was employed to produce a set of transformation equations.

Number of Factors

In order to decide the number of factors, several factor analytic procedures were implemented including principal component analysis (PCA) with both orthogonal and oblique rotation methods, principal axis factoring (PAF) and maximum likelihood (ML) estimate analysis with both orthogonal and oblique rotation methods. In addition, several software tools (SAS 9.4, SPSS 22, and Mplus 7.11) were used as well. Table 4. 5 presents the eigenvalues that principal component analysis (PCA) with the varimax rotation method produced. First, eigenvalues greater than 1.0 were examined. The results of initial eigenvalues greater than 1.0 using a principal component analysis suggested a five-factor solution (see Table 4.5), accounting for 54.36 % of the total variance. Both principal axis factoring and maximum likelihood suggested a five-factor solution and rotation sums of squared loadings accounted for 41.912 % of the common variance of items excluding the unique variance. In order to understand the pattern of factor loadings better, separate factor solutions were generated for from two to five factors. For a five-factor solution, all the 23 items loaded on at least one factor. However, a PCA had different numbers of loadings on two factors from a PAF and a ML, while a PAF and a ML

produced the same results even though the loading values after extraction were a little different. The result of a five-factor solution of a PCA had a factor, Factor 5, which had only two items loaded. At least three items to five items or variables are recommended for a subscale as a minimum number of items or variables for a factor (Comrey & Lee, 1992; Benson & Nasser, 1998; Gorsuch, 1983). The results of five-factor solutions of a PAF and a ML had a factor, Factor 5, which had three items. This factor consisted of all of the reversed items, items 3, 16, and 19. Next, a four-factor solution was identified in the same manner as was the five-factor solution. The results of a PCA, a PAF, and a ML showed that items 2, 16, 19, and 21 had low loading values less than .32, and did not load on any factors. Next, three-factor solutions produced by a PCA, PAF, and ML were examined. The result of a PAF and a PCA had all the 23 items loaded on at least one factor with loading values greater than .32. The result of a ML had three items (2, 15, and 19) of which loading values were less than .32.

Several further examinations were performed. First, items 2, 16, 19, and 21, which had loading values less than .32 for four-factor solutions, were removed, and then another set of eigenvalues was calculated. Without these items, a PAF suggested a four-factor solution using eigenvalues greater than 1.0. However, Factor 4 had only one item loaded with a value greater than .32. Without these items, three-factor solutions were performed. Except a PAF, the results of both a PCA and a ML had more items of low loading values than the results of a PCA and a ML with these items included. Along with each factor-solution, the item questionnaire of each factor of the three-factor, four-factor, and five-factor solutions were carefully examined when they sorted into each factor. Certain items were always combined together in the same factor even though the number of factors changed. Items 12, 13, 17 and 20 always belonged to the same factor; items 7, 9, 14, and 23 loaded on the same factor; items 1, 4, 18, 21, and 22 were in the

same factor and items 16, and 19 loaded on the same factor. Items 2, 8, 11, and 15 loaded on different factors when the number of factors was changed. Figure 4.1 shows a scree plot.

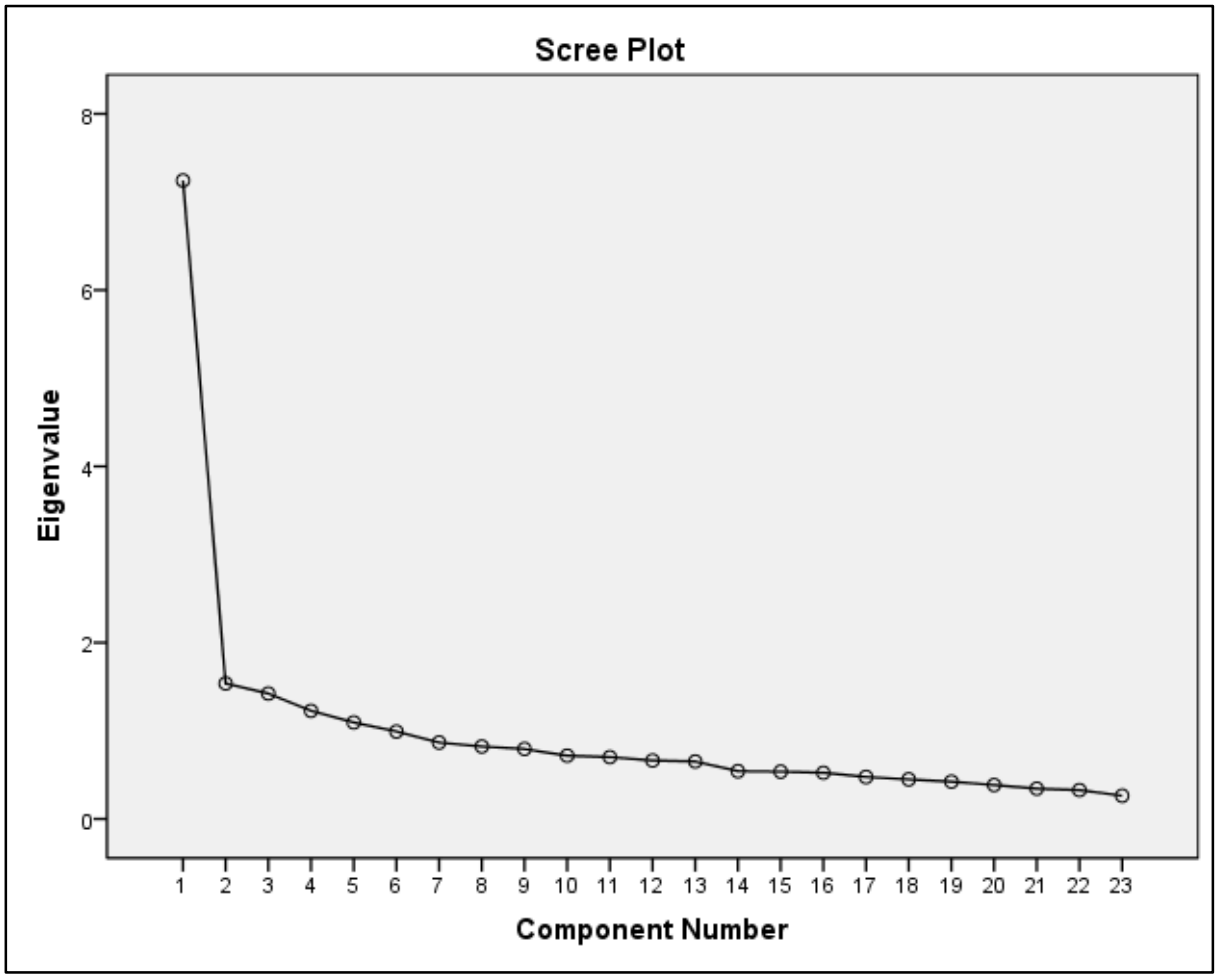


Figure 4. 1. Scree Plot. Produced by SPSS 22

Model Fit Indices

Using Mplus 7.11 and SAS 9.4, several model fit indices for 1-factor through 6-factor models were calculated. The results from both software tools produced almost identical values, so the results produced by SAS 9.4 were reported in Table 4.7. Model fit indices calculated were chi-square index (aka. normed fit index: NFI; Bentler & Bonett, 1980), Akaike information criterion (AIC) index, the root-mean-square error of approximation (RMSEA), the standardized root-mean-square residual (SRMR), and Tucker and Lewis's index. Considering all the results, a

five-factor solution using a maximum likelihood estimate with all the 23 items included appeared to be stable. For Tucker and Lewis's index, a value greater than .9 is good. For RMSEA, if values are less than or equal to .05, the approximations are acceptable (Mulaik, 2010). For RMSR (Root Mean Square Residual), values less than .05 or equal to .05 are good. Noncentrality parameters (Mulaik, 2010) for each factor were also calculated, with which Marsh et al., (1988) replaced the NFI, and obtained by subtracting the degree of freedom from the chi-square. The hypothesis of one-factor solution was rejected using the chi-square index, and it was assumed that more than two factors would exist.

Table 4.7

Comparison of Model Fit Indices for EFA of the KESA

Factor solution	Chi-Square (χ^2) (*df*) *p*	$\chi^2 - df$	AIC	RMSEA	SRMR	TLI
1	943.6842 (230) p < .0001	713.6482	473.747	.093001	.064	.76372
2	700.9787 (208) p < .0001	492.9787	300.674	.081899	.054	.8188
3	518.0245 (187) p < .0001	331.0245	156.429	.0720323	.047	.8595
4	421.2279 (167) p < .0001	254.2279	97.9710	.059453	.038	.87917
5	332.9289 (148) p < .0001	184.9289	45.9407	.055824	.034	.90082

Note. N = 450. Both a principal axis factoring (PAF) and maximum likelihood (ML) estimate were performed. Rotation method = varimax. *df* = degrees of freedom, AIC = Akaike information criterion, RMSEA = the root-mean-square error of approximation, SRMR = the standardized root-mean-square residual, and TLI = Tucker and Lewis index. Number of items = 23. Produced by SAS 9.4.

Considering eigenvalues for all 23 items, the amount of the variance explained by factors extracted and considering the model-fit indices and reliabilities for each subscale of each solution, a five-factor solution was finally interpreted as the best possible common factor model for the KESA. All the 23 items were retained in the five-factor solution since in the five-factor solution using a principal axis factoring and a maximum likelihood estimate all the 23 items

loaded on at least one factor with values greater than .32. An average of the communalities in the five-factor solution was .412. The five factors explained 54.45% of the total variance in combination (PCA) and explained 41.91% of the common variance excluding the unique variance (PAF and ML). After factors rotated using a PAF and a ML, Factor 1 accounted for 10.84%, Factor 2 explained 10.43%, Factor 3 explained 8.15%, Factor 4 accounted for 7.83%, and Factor 5 explained 4.67% of the common variance, each.

Factor loadings of a ML are presented in Table 4.8. Considering terms used for the past OWEI, KOWEI, and the ESA, these factors were labeled: *진취성 (Initiative)* for Factor 1, *대인관계기술 (Interpersonal Skills)* for Factor 2, *신뢰성 (Dependability)* for Factor 3, *사려깊음 (Thoughtfulness)* for Factor 4, and *부정적 문항 (Reversed Items)* for Factor 5. Comparisons of items between the KESA and the ESA were made to see which items belonged to each subscale (see Table 4.9). For 진취성 (initiative), out of the eight items of Factor 1 in the KESA, five items were the same as *initiative* on the ESA. For 대인관계기술 (interpersonal skills), all the four items in the KESA belonged to *Interpersonal Skills* on the ESA. Thus, it was natural to name Factor 2 대인관계기술 (interpersonal skills) after the ESA. For Factor 3, out of the four items in the KESA, three items were the same as *dependability* on the ESA, and the other one item was from *initiative* on the ESA. Thus, for Factor 3, it made a sense to follow dependability of the ESA. For this factor, 신뢰성 (dependability) was selected as a label. For Factor 4, out of the four items, two were the same as interpersonal skills on the ESA, one was the same as dependability on the ESA, and the other one was the same as initiative on the ESA. Considering the item questions, it was labeled 사려깊음 (thoughtfulness) for Factor 4. Factor 5 consisted of only negative items. Two items were the same on Initiative, and one was the same as dependability on the ESA. For Factor 5, it was labeled 부정적 문항 (Reversed Items*)*.

Table 4.8

Factor Loadings after the Varimax Factor Rotation with Principal Axis Factoring

Item	Factor1	Factor2	Factor3	Factor4	Factor5
Q21	**.62**	.19	.22	.14	.21
Q18	**.59**	.22	.24	.16	.19
Q22	**.56**	.20	.11	.13	.09
Q4	**.50**	.11	.19	.06	.25
Q15	**.43**	.34	.25	.32	-.01
Q8	**.42**	.23	.28	.34	.11
Q1	**.34**	.25	.18	.14	.18
Q2	**.32**	.23	.02	.21	-.03
Q14	.18	**.78**	.25	.15	.17
Q23	.29	**.72**	.07	.10	.15
Q7	.23	**.48**	.04	.14	-.03
Q9	.27	**.37**	.36	.31	.04
Q13	.09	.20	**.60**	.11	.03
Q20	.19	-.00	**.56**	.04	-.11
Q12	.25	.18	**.53**	.30	.20
Q17	.28	.16	**.37**	.26	.22
Q6	.28	.16	.12	**.62**	-.00
Q5	.14	.39	.17	**.51**	.14
Q11	.13	.44	.31	**.49**	.12
Q10	.21	.04	.32	**.39**	.20
Q19	.07	.07	.04	.22	**.57**
Q16	.09	.05	-.05	.03	**.42**
Q3	.20	.04	.14	-.22	**.39**
Eigenvalues (ML)	2.493	2.398	1.875	1.800	1.074
% of common variance	10.84	10.43	8.15	7.83	4.67
α	.80	.77	.68	.72	.51

Note. Varimax rotation method. All items =23. Total observations =450. The percentage (%) of variance is rotation sums of squared loadings using a maximum likelihood estimate. Factor loadings > .32 are in boldface.

Table 4.9

Comparisons of Items that Belong to Each Subscale between the KESA and the ESA

Factor	KESA	ESA: Interpersonal Skills	ESA: Initiative	ESA: Dependability
KESA: Factor 1 (8 items)	**Q21**		**Q21**	
	Q18		**Q18**	
	Q22		**Q22**	
	Q4			Q4
	Q15	Q15		
	Q8		**Q8**	
	Q1	Q1		
	Q2		**Q2**	
KESA: Factor 2 (4 items)	**Q14**	**Q14**		
	Q23	**Q23**		
	Q7	**Q7**		
	Q9	**Q9**		
KESA: Factor 3 (4 items)	**Q13**			**Q13**
	Q20			**Q20**
	Q12		Q12	
	Q17			**Q17**
KESA: Factor 4 (4 items)	Q6		Q6	
	Q5	Q5		
	Q11	Q11		
	Q10			Q10
KESA: Factor 5 (3 items)	Q19			Q19
	Q16		Q16	
	Q3		Q3	

Note. Items that belonged to the same factor of the KESA and the ESA are in boldface.

Interpretation of Factors

Factor 1 explained 10.84% of the common variance. Items Q21, Q18, Q22, Q4, Q15, Q8, Q1, and Q2 loaded on Factor 1, and loading values ranged from .32 to .62 (see Table 4.10). Items in Factor 1 represented attributes of initiative such as accomplishing goals, completing the work that must be done, helping others, and trying to do a good job. Factor 1 was labeled as 진취성 (initiative).

Table 4. 10

Factor1. 진취성 (Initiative)

Item	Korean	English	Loading	Mean	*SD*
Q21	당신은 당신의 목적들을 성취합니까?	Do you accomplish your goals?	.62	4.94	0.92
Q18	당신은 당신이 해야 하는 일을 완성하려고 간절히 열망합니까?	Are you eager to complete the work that you have to do?	.59	5.68	0.95
Q22	다른 사람들이 당신과 함께 있는 것을 즐거워합니까?	Do other people enjoy being with you?	.56	5.13	0.92
Q4	당신이 무엇인가를 할 것이다라고 말할 때, 그것을 실행 합니까?	When you say you will do something, do you do it?	.50	5.05	1.08
Q15	당신은 다른 사람들을 돕기 위한 방법들을 찾습니까?	Do you look for ways to help other people?	.43	5.12	0.99
Q8	당신은 일을 잘 하려는 데 헌신적입니까?	Are you committed to doing good work?	.42	5.61	1.02
Q1	당신은 행복한 사람입니까?	Are you a happy person?	.34	5.18	1.20
Q2	당신은 성공하기를 간절히 열망하십니까?	Are you eager to be successful?	.32	5.37	1.37

Factor 2 included four items: Q7, Q9, Q14, and Q23. Factor 2 accounted for 10.43% of the common variance with item loading values ranging from .37 to .78 (see Table 4.11). Factor 2 reflected work ethic characteristics that make good relationships among people with good collaboration and cooperation skills, and likeability. Factor 2 was labeled 대인관계기술 (interpersonal skills).

Table 4.11

Factor 2. 대인관계기술 (Interpersonal Skills)

Item	Korean	English	Loading	Mean	*SD*
Q14	사람들이 당신을 좋아합니까?	Do people like you?	.78	5.30	0.91
Q23	다른 사람들이 당신과 함께 있는 것을 즐거워합니까?	Do other people enjoy being with you?	.72	5.13	0.92
Q7	당신은 다른 사람들과 같이 있는 것을 좋아합니까?	Do you like to be with other people?	.48	5.18	1.10
Q9	당신은 다른 사람들과 같이 일을 잘 합니까?	Do you work well with others?	.37	5.39	1.01

Factor 3 included four items: Q12, Q13, Q17, and Q20. Factor 3 accounted for 8.15% of the common variance with item loading values ranging from .37 to .60 (see Table 4.12). Factor 3 reflected work ethic attributes exhibited by people performing tasks at work as they are supposed to do. Included were following instructions and rules, telling the truth, and doing the right things. This factor was labeled 신뢰성 (dependability).

Table 4.12

Factor 3. 신뢰성 (Dependability)

Item	Korean	English	Loading	Mean	*SD*
Q13	당신은 지시사항을 따르는 것을 잘 합니까?	Are you good at following instructions?	.60	5.42	1.02
Q20	당신은 당신이 규칙에 동의하지 않을 지라도 그 규칙들을 따릅니까?	Do you follow the rules even if you disagree with them?	.56	4.71	1.23
Q12	당신은 처음부터 일을 올바르게 합니까?	Do you do things right the first time?	.53	5.27	1.02
Q17	당신은 진실을 말합니까?	Do you tell the truth?	.37	5.51	0.90

Factor 4 included four items: Q5, Q6, Q10, and Q11. Factor 4 accounted for 7.83% of the common variance with item loading values ranging from .39 to .62 (see Table 4.13). Factor 4 reflected work ethic attributes exhibited by people performing tasks at work as they are supposed

to do. Included were being awareness of situation, thoughtfulness of others, having good manners, and carefulness. This factor was labeled 사려깊음(thoughtfulness).

Table 4.13

Factor 4. 사려깊음 (Thoughtfulness)

Item	Korean	English	Loading	Mean	*SD*
Q6	당신은 주변에 무슨 일이 일어나고 있는 일을 인지하십니까?	Are you aware of what is going on around you?	.62	5.16	1.07
Q5	당신은 다른 사람들에 대해 사려깊으십니까?	Are you thoughtful of others?	.51	5.40	0.97
Q11	당신은 좋은 예절을 가지고 있습니까?	Do you have good manners?	.49	5.62	0.92
Q10	당신은 여유를 가지고 부주의한 실수를 만드는 것을 피합니까?	Do you take your time and avoid making careless mistakes?	.39	5.07	1.08

Factor 5 included three items: Q3, Q16, and Q19. Factor 5 accounted for 4.67% of the common variance with item loading values ranging from .39 to .57 (see Table 4.14). Factor 5 consisted of only reversed items. These items reflected characteristics that may cause negative influences on persons' work ethic and work performances at work. The three reversed items of the ESA are designed in order to prevent "potential participants from responding the questions by quickly selecting ratings perceived to be positive without reading the actual items (Park & Hill, 2016, p. 15)". This factor was labeled 부정적 문항 (Reversed Items)

Table 4.14

Factor 5. 부정적 문항 (Reversed Items)

Item	Korean	English	Loading	Mean	*SD*
Q19	당신은 평소에 다른 사람들을 실망시킵니까?	Do you ever disappoint people?	.57	5.17	1.11
Q16	당신은 문제들에 대한 해결책들을 당신 스스로 찾는 것이 어렵습니까?	Is it difficult for you to find solutions to problems on your own?	.42	4.88	1.35
Q3	당신은 시간을 낭비합니까?	Do you waste time?	.39	4.44	1.22

Factor Correlation

The exploratory factor analysis resulted in low or moderate correlation between the three identified factors. Inter-factor correlation coefficients ranged from .118 to .835 (see Table 4.15).

Table 4.15

Orthogonal Transformation Matrix

	진취성 (Initiative)	대인관계기술 (Interpersonal Skills)	신뢰성 (Dependability)	사려깊음 (Thoughtfulness)	부정적 문항 (Reversed Items)
진취성 (Initiative)	.51	.59	.41	.41	.23
대인관계기술 (Interpersonal Skills)	.41	-.80	.39	.19	.11
신뢰성 (Dependability)	.54	.03	-.35	-.61	.46
사려깊음 (Thoughtfulness)	.12	-.11	-.72	.65	.17
부정적 문항 (Reversed Items)	-.52	-.05	.18	.06	.84

Note. Maximum likelihood was used as an extraction method, and the varimax was employed as an orthogonal rotation method.

Reliability Analysis

Cronbach's coefficient alpha, which is the consistency of scores across replications of a measure under the condition of assumption that taking one form has no impact on performance for the second (Crocker & Algina, 1986), was performed to analyze reliabilities of each subscale. This is the method of splitting one instrument into two parts and observing the extent of agreement between different parts of one test associated with form-to-form variability (Crocker & Algina, 1986).

Since the KESA is multidimensional with five subscales, coefficient alphas were produced separately for each subscale (Cortina, 1993; Grayson, 2004) and presented in Table

4.16. For Factor 1, 진취성 (initiative), coefficient α = .80, Factor 2, 대인관계기술 (interpersonal skills), coefficient α = .77, Factor 3, 신뢰성 (dependability), coefficient α = .68, Factor 4, 사려깊음 (thoughtfulness), coefficient α = .72, and Factor 5, 부정적 문항 (reversed items), coefficient α = .51.

Table 4.16

Reliability Coefficients

Factor	Items retained	Coefficient α
진취성 (Initiative)	8 items: Q1, Q2, Q4, Q8, Q15, Q18, Q21, and Q22	.80
대인관계기술 (Interpersonal Skills)	4 items: Q7, Q9, Q14, and Q23	.77
신뢰성 (Dependability)	4 items: Q12, Q13, Q17, and Q20	.68
사려깊음 (Thoughtfulness)	4 items: Q5, Q6, Q10, and Q11	.72
부정적 문항 (Reversed Items)	3 items: Q3, Q16, and Q19	.51

Multivariate Analysis of Variance

Research Questions Two and Three

The second stage of this research study focused on comparing the work ethic of Korean people measured using the KESA. The research questions are:

2. What is the work ethic of South Koreans as measured by the KESA?
3. Do differences exist in the work ethic between women and men and among Baby Boomers, Generation X, and Millennials in South Korea?

Sample

In the second stage of this study, the same data set was used. In Table 4.17 shows the information for the sample based on gender and generation. Participants who were from 18 years old to 61 years old in 2015 were included since this age range were active workers in Korea. Out of respondents, participants from Generation X were the most (48.4%), Millennials were the second (29.1%), and Baby Boomers were 22.4%. Considering that people in Generation X were active workers, Baby Boomers started to retire, and some Millennials did not enter the job market, the composition of responses is understandable.

Table 4.17

Frequency of Participants by Gender and Generation

Variable	Category	Frequency	%
Gender	Women	214	47.6
	Men	236	52.4
	Missing	0	0
	Total	450	100.0
Generation	Baby Boomer	101	22.4
	GX	218	48.4
	Millennial	131	29.1
	Total	450	100.0

Note. Baby Boomer were people who were born between 1955 and 1964, Generation X (GX) people were born between 1964 and 1981, and Millennials were born between 1982 and 1999 in South Korean. Total observations = 450.

Work Ethic of South Korean

In order to answer the second research question, descriptive statistics were calculated including means and standard deviations for the five subscales of the KESA. Table 4.18 shows the means and standard deviations of the work ethic subscales of South Koreans as measured by the KESA. The mean of 사려깊음 (thoughtfulness) scored the highest of the five subscales of the KESA with mean = 5.31 and *SD* = 0.75. 대인관계기술 (interpersonal skills) scored the second with mean = 5.25 and *SD* = 0.76. 진취성 (initiative) scored the third with mean = 5.24 and *SD* =

0.69. 신뢰성 (dependability) scored the fourth with mean = 5.23 and *SD* = 0.75. 부정적 문항 (reversed items) had the lowest mean of the five subscales with mean = 4.83 and *SD* = 0.85.

Table 4.18

The Work Ethic of South Koreans Measured by the KESA

Subscale	Mean	*SD*	n
진취성 (Initiative)	5.24	0.69	450
대인관계기술 (Interpersonal Skills)	5.25	0.76	450
신뢰성 (Dependability)	5.23	0.75	450
사려깊음 (Thoughtfulness)	5.31	0.75	450
부정적 문항 (Reversed Items)	4.83	0.85	450

Multivariate Analysis of Variance (MANOVA)

The third research question of this study was to examine the relationship between work and gender, generation and interaction: *Are there any significant effects of gender, generation (Baby Boomers, Generation X, and Millennials) and the interaction of gender and generation on work ethic detected?* The five subscales of the KESA were dependent variables. The independent variables were gender and generation. Also, any interaction effect between the two independent variables on work ethic were examined. In order to answer the third research question, a multivariate analysis of variance was implemented using SPSS 22.

Test of Assumptions. In order to see if there were statistically significant differences in means of each subscale of KESA between gender and the three generations, a MANOVA was performed. For this, preliminary tests were performed to test ANOVA assumptions: independence and homogeneity of variance. Levene's test was employed for test of homogeneity of variances (see Table 4.19). Levene's test uses a null hypothesis that the variance of one

variable is equal at all levels of another variable. Like ANOVA, to perform a MANOVA, this null hypothesis should not be significant so that the null hypothesis can be rejected. The results of the test were not statistically significant with *p*-values greater than .05 and indicated that the variances were not equal.

Table 4.19

Levene's Test of Homogeneity of Variances

Subscale	F	*df*1	*df*2	Sig.
진취성 (Initiative)	1.051	5	444	.39
대인관계기술 (Interpersonal Skills)	2.950	5	444	.01
신뢰성 (Dependability)	2.038	5	444	.07
사려깊음 (Thoughtfulness)	0.541	5	444	.75
부정적 문항 (Reversed Items)	4.535	5	444	.00

Note: Total observations = 450.

Wilk's lambda was used to test whether there were differences between the means of three generations and two genders in the overall work ethic as measured by the KESA. The results of multivariate tests using Wilks' Lambda are presented in Table 4.20. Wilks' statistic suggested there was no statistically significant difference in the overall KESA between men and women, Wilk's $\Lambda = .981$, $F(5, 440) = 1.715$, $p = .130$, partial $\eta^2 = .019$. However, Wilk's lambda suggested that there was a statistically significant difference between the means of the KESA between generations, Wilk's $\Lambda = .875$, $F(10, 880) = 6.080$, $p < .001$, and partial $\eta^2 = .065$. However, there was no statistically significant interaction effect of gender and generation on the overall KESA, Wilk's $\Lambda = .962$, $F(10, 880) = 1.704$, $p = .075$. partial $\eta^2 = .019$, but the *p*-value is close to .05.

Table 4.20

Multivariate Tests: Wilks' Lambda

Effect		Value	*F*	Hyphothesis *df*	Error *df*	Sig.	Partial η^2	Observed power
Intercept	Wilks' Lambda	.012	7386.812	5.00	440.00	.000	.988	1.000
Gender	Wilks' Lambda	.981	1.715	5.00	440.00	.130	.019	.872
Generation	Wilks' Lambda	.875	6.080	10.00	880.00	.000	.065	1.000
Gender * Generation	Wilks' Lambda	.962	1.704	10.00	880.00	.075	.019	.269

Note: Total observations = 450, and * = the interaction between gender and generation

Descriptive statistics of the five subscales are presented in Table 4.21. Participants from Generation X scored the highest on 진취성 (initiative) (M = 5.31, *SD* = 0.69), Baby Boomers did the second (M = 5.30, *SD* = 0.66), and Millennials scored the third (M = 5.07, *SD* = 0.70). On 대인관계기술 (interpersonal skills) Generation X scored the highest (M = 5.29, *SD* = 0.75), Baby Boomers did the second (M = 5.21, *SD* = 0.69), and Millennials did the third (M = 5.20, *SD* = 0.83). On 신뢰성 (dependability) Baby Boomers scored the highest (M = 5.41, *SD* = 0.65), Generation X had the second highest score (M = 5.32, *SD* = 0.73), and Millennials scored the third (M = 4.95, *SD* = 0.78). On 사려깊음 (thoughtfulness) participants from Generation X had the highest score (M = 5.39, *SD* = 0.72), Baby Boomers had the second highest score (M = 5.29, *SD* = 0.71), and Millennials had the third (M = 5.20, *SD* = 0.81). On 부정적 문항 (reversed items) Baby Boomers scored the highest (M = 5.02, *SD* = 1.04), participants from Generation X scored the second (M = 4.95, *SD* = 0.73), and Millennials scored the third (M = 4.49, *SD* = 0.77). However, these results were not interpreted based on the statistical significance level.

Table 4.21

Descriptive Statistics of the Five Subscales of the KESA

Subscale	Gender	Generation	Mean	*SD*	n
진취성(Initiative)	Female	BB	5.25	0.55	38
		GX	5.32	0.75	99
		ML	4.99	0.67	77
		Total	5.19	0.71	214
	Male	BB	5.34	0.72	63
		GX	5.30	0.64	119
		ML	5.17	0.71	54
		Total	5.28	0.68	236
	Total	BB	5.30	0.66	101
		GX	5.31	0.69	218
		ML	5.07	0.70	131
		Total	5.24	0.69	450
대인관계기술	Female	BB	5.24	0.52	38
(Interpersonal Skills)		GX	5.40	0.79	99
		ML	5.19	0.80	77
		Total	5.30	0.76	214
	Male	BB	5.19	0.77	63
		GX	5.20	0.71	119
		ML	5.23	0.88	54
		Total	5.21	0.77	236
	Total	BB	5.21	0.69	101
		GX	5.29	0.75	218
		ML	5.20	0.83	131
		Total	5.25	0.76	450
신뢰성	Female	BB	5.35	0.63	38
(Dependability)		GX	5.30	0.81	99
		ML	4.90	0.82	77
		Total	5.17	0.81	214
	Male	BB	5.44	0.67	63
		GX	5.33	0.65	119
		ML	5.02	0.71	54
		Total	5.29	0.69	236
	Total	BB	5.41	0.65	101
		GX	5.32	0.73	218
		ML	4.95	0.78	131
		Total	5.23	0.75	450

Subscale	Gender	Generation	Mean	*SD*	n
사려깊음 (Thoughtfulness)	Female	BB	5.18	0.75	38
		GX	5.45	0.73	99
		ML	5.10	0.78	77
		Total	5.27	0.77	214
	Male	BB	5.37	0.69	63
		GX	5.34	0.71	119
		ML	5.34	0.84	54
		Total	5.35	0.73	236
	Total	BB	5.30	0.71	101
		GX	5.39	0.72	218
		ML	5.20	0.81	131
		Total	5.31	0.75	450
부정적 문항 (Reversed Items)	Female	BB	4.76	1.18	38
		GX	5.10	0.77	99
		ML	4.48	0.73	77
		Total	4.82	0.88	214
	Male	BB	5.17	0.91	63
		GX	4.82	0.67	119
		ML	4.49	0.85	54
		Total	4.84	0.82	236
	Total	BB	5.02	1.04	101
		GX	4.95	0.73	218
		ML	4.49	0.77	131
		Total	4.83	0.85	450

Note. BB = Korean Baby Boomers, GX = Generation X, and ML = Millennials.

To examine how difference existed in the means of the five identified subscales of the KESA, effects of between subjects were analyzed and the results are presented in Table 4.22. The results indicated that there were not statistically significant differences in the five subscales between women and men, and it was consistent with the result of Wilk's lambda. The results also showed that there were statistically significant differences in 진취성 (initiative), 신뢰성 (dependability) and 부정적 문항 (reversed items) between generations with $F(2, 444) = 4.613$, $p < .001$, partial $\eta^2 = .020$, $F(2, 444) = 12.585$, $p < .001$, partial $\eta^2 = .054$, and $F(2, 444) = 15.611$, p

< .001, partial η^2 = .066 each. There were no statistically significant difference in 대인관계기술 (interpersonal skills) and 사려깊음 (thoughtfulness) among generations with $F(2, 444) = .822$, $p = .440$, partial $\eta^2 = .004$, and $F(2, 444) = 2.319$, $p = .100$, partial $\eta^2 = .010$.

Table 4.22

Tests of Between-Subjects Effects

IV	DV	SS	*df*	MS	*F*	Sig.	Partial η^2
Gender	진취성 (Initiative)	.649	1	.649	1.372	.242	.003
	대인관계기술 (Interpersonal Skills)	.435	1	.435	.748	.388	.002
	신뢰성 (Dependability)	.595	1	.595	1.120	.291	.003
	사려깊음 (Thoughtfulness)	1.110	1	1.110	2.014	.157	.005
	부정적 문항 (Reversed Items)	.195	1	.195	.296	.587	.001
Generation	**진취성 (Initiative)**	4.366	2	2.183	4.613	**.010**	.020
	대인관계기술 (Interpersonal Skills)	.955	2	.478	.822	.440	.004
	신뢰성 (Dependability)	13.385	2	6.692	12.585	**.000**	.054
	사려깊음 (Thoughtfulness)	2.557	2	1.278	2.319	.100	.010
	부정적 문항 (Reversed Items)	20.522	2	10.261	15.611	**.000**	.066
Gender * Generation	진취성 (Initiative)	.832	2	.416	.879	.416	.004
	대인관계기술 (Interpersonal Skills)	1.290	2	.645	1.109	.331	.005
	신뢰성 (Dependability)	.202	2	.101	.190	.827	.001
	사려깊음 (Thoughtfulness)	2.757	2	1.379	2.501	.083	.011
	부정적 문항 (Reversed Items)	8.001	2	4.001	6.086	**.002**	.027
Error	진취성 (Initiative)	210.139	444	.473			
	대인관계기술 (Interpersonal Skills)	258.074	444	.581			
	신뢰성 (Dependability)	236.102	444	.532			
	사려깊음 (Thoughtfulness)	244.725	444	.551			
	부정적 문항 (Reversed Items)	291.837	444	.657			
Total	진취성 (Initiative)	12559.438	450				
	대인관계기술 (Interpersonal Skills)	12659.125	450				
	신뢰성 (Dependability)	12560.625	450				
	사려깊음 (Thoughtfulness)	12946.938	450				
	부정적 문항 (Reversed Items)	10818.667	450				
Corrected Total	진취성 (Initiative)	216.614	449				
	대인관계기술 (Interpersonal Skills)	261.249	449				
	신뢰성 (Dependability)	251.820	449				
	사려깊음(Thoughtfulness)	250.726	449				
	부정적 문항 (Reversed Items)	322.272	449				

Note. Total observations = 450, and *p*-values < .05 are in boldface.

In terms of the interaction effect of gender and generation, when the overall work ethic was examined, Wilk's lambda suggested that there was no significant interaction effect of gender and generation on the overall work ethic. When the work ethic was examined based on the five subscales of the KESA, the first four subscales were not affected by the interaction between gender and generation as Wilk's lambda suggested. However, the results indicated that there was a significant interaction effect between gender and generation on 부정적 문항 (reversed items) with $F(2, 444) = 6.086$, $p < .05$, and partial $\eta^2 = .027$. This indicates that Korean women and men responded to the reversed items differently based on different generations. Specifically, males of Baby Boomers (M = 5.17, *SD* = 0.91) had higher scores on the subscale, 부정적 문항 (reversed items), than females of Baby Boomers (M = 4.76, *SD* = 1.18); but females of Generation X (M = 5.10, *SD* = 0.77) scored higher than males of Generation X (M = 4.82, *SD* = 0.67) on 부정적 문항 (reversed items). However, the subscale, 부정적 문항 (reversed items), of Korean Millennials was similar in females (M = 4.48, *SD* = 0.73) and males (M = 4.49, *SD* = 0.85). The graph of the interaction effect of gender and generation on 부정적 문항 (reversed items) is presented in Figure 4.2.

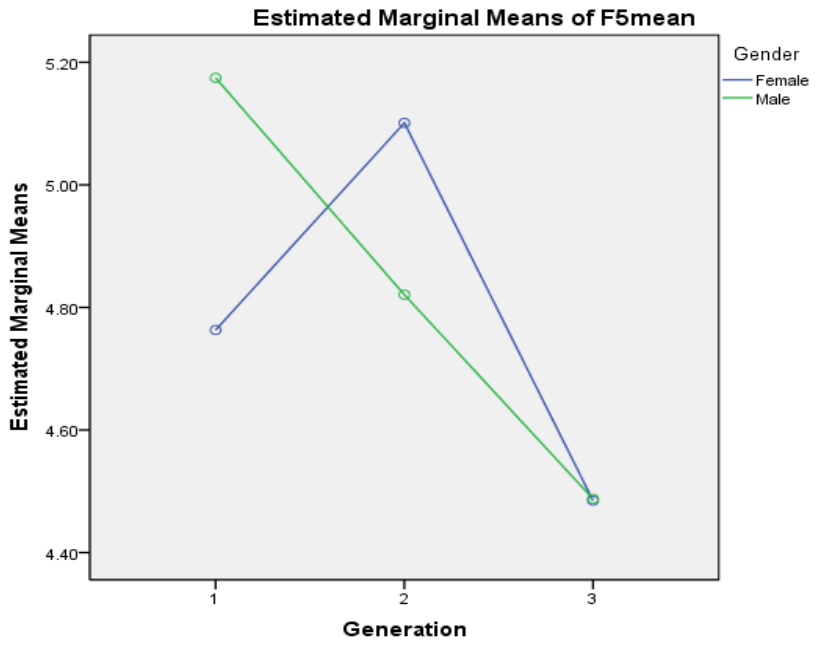


Figure 4. 2. Graph of the interaction of gender and three generations in 부정적 문항 (reversed items). 1 = Baby Boomers, 2 = Generation X, and 3= Millennials.

To examine how differences in the five subscales existed among generations, multiple comparisons were conducted, using Tukey HSD. The results are presented in Table 4.23. There were significant differences in the subscales of 진취성 (initiative), 신뢰성 (dependability), and 부정적 문항 (reversed items) between Baby Boomers and Millennials. There were significant differences in the subscales of 진취성 (initiative), 신뢰성 (dependability), and 부정적 문항 (reversed items) between Generation X and Millennials. However, there were no significant differences in 진취성 (initiative), 신뢰성 (dependability), and 부정적 문항 between Baby Boomers and Generation X. There were no significant differences in 대인관계기술 (interpersonal skills) and 사려깊음 (thoughtfulness) among generations.

Table 4.23

Multiple Comparisons Using Tukey HSD

DV	Gen. (I)	Gen. (J)	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower bound	Upper bound
진취성 (Initiative)	**BB**	GX	-.007	.083	.997	-.201	.188
		ML	.233*	.091	**.029**	.019	.448
	GX	BB	.007	.083	.997	-.188	.201
		ML	.240*	.076	**.005**	.061	.419
	ML	**BB**	-.233*	.091	**.029**	-.448	-.019
		GX	-.240*	.076	**.005**	-.419	-.061
대인관계기술 (Interpersonal Skills)	BB	GX	-.087	.092	.612	-.303	.129
		ML	.004	.101	.999	-.234	.241
	GX	BB	.087	.092	.612	-.129	.303
		ML	.091	.084	.531	-.108	.289
	ML	BB	-.004	.101	.999	-.241	.234
		GX	-.091	.084	.531	-.289	.108
신뢰성 (Dependability)	**BB**	GX	.093	.088	.539	-.113	.300
		ML	.458*	.096	**.000**	.231	.685
	GX	BB	-.093	.088	.539	-.300	.113
		ML	.365*	.081	**.000**	.175	.555
	ML	**BB**	-.458*	.097	**.000**	-.685	-.231
		GX	-.365*	.081	**.000**	-.555	-.175
사려깊음 (Thoughtfulness)	BB	GX	-.092	.090	.559	-.302	.118
		ML	.094	.098	.604	-.137	.325
	GX	BB	.092	.089	.559	-.118	.302
		ML	.186	.082	.062	-.007	.379
	ML	BB	-.094	.098	.604	-.325	.137
		GX	-.186	.082	.062	-.379	.007
부정적 문항 (Reversed Items)	**BB**	GX	.072	.098	.742	-.158	.301
		ML	.534*	.107	**.000**	.281	.786
	GX	BB	-.072	.098	.742	-.301	.158
		ML	.462*	.090	**.000**	.251	.673
	ML	**BB**	-.534*	.107	**.000**	-.786	-.281
		GX	-.462*	.090	**.000**	-.673	-.251

Note. BB = Korean Baby Boomers, GX = Generation X, and ML = Millennials. Total observations =450, and * indicates that the mean difference is significant at the .05 level and *p*-values < .05 are in boldface.

Table 4.24 shows the means and standard deviations of the three subscales of the KESA in which there existed statistically significant differences among generations. Generation X scored the highest on 진취성 (initiative), Baby Boomers the second, and Millennials the third. On

신뢰성 (dependability) and 부정적 문항 (reversed items), Baby Boomers scored the highest, Generation X the second, and Millennials the third. Between Baby Boomers and Generation X, there were no statistically significant differences in the subscales of the KESA.

Table 4.24

Descriptive Statistics of the Three Subscales of the KESA among Generations

Subscale	Generation	Mean	*SD*	n
진취성 (Initiative)	BB	5.29	0.07	101
	GX	5.31	0.05	218
	ML	5.08	0.06	131
신뢰성	BB	5.40	0.08	101
(Dependability)	GX	5.31	0.05	218
	ML	4.96	0.07	131
부정적 문항	BB	4.97	0.08	101
(Reversed Items)	GX	4.96	0.06	218
	ML	4.49	0.07	131

Note. BB = Korean Baby Boomers, GX = Generation X, ML = Millennials, and total observations = 450.

CHAPTER 5

SUMMARY, CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

This chapter provides a summary of the study, conclusions based on the results, implications, recommendations considering the relevant theories, and the practical applications of the Korean Employment Skills Assessment as a work ethic measurement for use in South Korea.

Summary

This study consisted of two main stages. The first stage was to examine the dimensions of the Korean Employability Skills Assessment (KESA), which was a translated Korean version of the Employability Skills Assessment (ESA). Since South Korea is a non-Western culture, the constructs of work ethic measured by the KESA were examined. A common factor model guided this stage. An exploratory factor analysis was performed and factors of the KESA were extracted, the construct validity was examined, and reliabilities of each factor extracted were tested. At the second stage of this study, the extracted factors of the KESA were dependent variables and gender and generation were independent variables. Gender had two levels: women and men. Generation had three levels: Korean Baby Boomers, Generation X, and Millennials. Data collected from a sample of convenience consisting of South Korean workers were examined to describe South Korean work ethic and determine the relationship between dependent variables and independent variables. Results of the data analyses were provided in Chapter IV and the interpretation of the results are presented in this chapter.

Research Questions and Findings

Research Question 1: *What constructs comprise the work ethic of South Koreans in South Korea as measured by the Korean Employability Skills Assessment (KESA)?*

The first research question for this study was to examine the constructs of South Korean work ethic as measured by the KESA in South Korea, a non-Western culture. A common factor model was applied to examine the constructs of South Korean work ethic. Responses to the 23 KESA items were collected and only respondents who were from 18 years old to 60 years old in 2015 were used as valid data for this stage since this is the age group range for active working people in South Korea. The total number of valid responses were 450. Using the 450 responses, a factor analysis was performed to answer the first research question. Various factor analytic procedures were performed including a principal component analysis (PCA) as a guide for the dimensions of factors, a principal axis factoring (PAF) and a maximum likelihood (ML) with both orthogonal and oblique analytic rotation methods. Several model indices were examined as well. Finally, a maximum likelihood with the varimax orthogonal rotation method was adopted and it suggested a five-factor model for the KESA that retained all the 23 items of the Employability Skills Assessment (ESA) and all had loading values greater than .32. Model indices were chi-square (χ^2) = 332.9289 with *df* = 148 and $p < .0001$, AIC = 45.941, RMSEA = .056, RMSR = .034, and Tucker and Lewis's index = .901. The five factors were named *진취성 (Initiative)* for Factor 1, *대인관계기술 (Interpersonal Skills)* for Factor 2*, 신뢰성 (Dependability)* for Factor 3*, 사려깊음 (Thoughtfulness)* for Factor 4, and *부정적 문항 (Reversed Items)* for Factor 5. 진취성 (Initiative) retained eight items: Q1, Q2, Q4, Q8, Q15, Q18, Q21, and Q22. 대인관계기술 (Interpersonal skills) retained four items: Q7, Q9, Q14, and Q23. 신뢰성 (Dependability) had four items: Q12, Q13, Q17, and Q20. 사려깊음 (Thoughtfulness) had four

items: Q5, Q6, Q10, and Q11. 부정적 문항 (Reversed items) had three reversed items: Q3, Q16, and Q19. The mean of the communalities was .412. The five factors generated by an exploratory factor analysis accounted for 41.91 % of the common variance.

Using Cronbach's alpha, reliability coefficients of the five factors of the KESA were calculated. Reliability coefficients of the five factors were coefficient's α = .80 for 진취성 (initiative), coefficient α =.77 for 대인관계기술 (interpersonal skills), coefficient α =.68 for 신뢰성 (dependability), coefficient α =.72 for 사려깊음 (thoughtfulness) and coefficient α =.51 for 부정적 문항 (reversed items). Considering that the reliability of each subscale in measurement development should be more than a minimum level of .70 (e.g., Cortina, 1993; Kline, 2000; Nunnally, 1978), the reliability coefficients of three factors derived from the EFA were higher than .70, but those of two factors were lower than .70.

Research Question 2: *What is the work ethic of South Koreans as measured by the KESA?*

A part of the second stage of this study was to describe South Korean work ethic as measured by the KESA. Descriptive statistics including mean scores and standard deviations of the five subscales of the KESA were calculated to answer the second research question. The average of 사려깊음 (thoughtfulness) had the highest score of the five subscales of the KESA (M = 5.31, *SD* = 0.75). 대인관계기술 (Interpersonal skills) scored the second highest (M = 5.25, *SD* = 0.76). 진취성 (Initiative) had the third highest mean score (M = 5.24, *SD* = 0.69). 신뢰성 (Dependability) scored the fourth (M = 5.23, *SD* = 0.75). 부정적 문항 (Reversed items) had the lowest mean score of the five subscales (M = 4.83, *SD* = 0.85).

Research Question 3: *Do differences exist in the work ethic between women and men and among Baby Boomers, Generation X, and Millennials in South Korea?*

As the last part of the second stage of this study, South Korean work ethic was compared for the independent variables of gender and generation. For this step, a MANOVA was performed with the five subscales of the KESA as dependent variables and gender and generation as independent variables. Gender had two levels: women and men, and generation had three levels: Korean Baby Boomers, Generation X, and Millennials. The results of a MANOVA suggested that there were no statistically significant differences in the work ethic subscales between women and men. However, the results of a MANOVA indicated there were statistically significant differences for generation on three subscales of the KESA: 진취성 (initiative), 신뢰성 (dependability) and 부정적 문항 (reversed items). First, Generation X scored higher than Millennials on 진취성 (initiative), 신뢰성 (dependability) and 부정적 문항 (reversed items). Also, Korean Baby Boomers had higher scores than Millennials on the same three subscales: 진취성 (initiative), 신뢰성 (dependability) and 부정적 문항 (reversed items). However, between Baby Boomers and Generation X, there was no statistically significant difference in the three subscales. Generation X had the highest score on 진취성 (initiative), Baby Boomers had the second, and Millennials were the last. Baby Boomers had highest scores out of the three generations on 신뢰성 (dependability) and 부정적 문항 (reversed items), Generation X had the second highest scores and Millennials had the lowest scores on the two subscales. For the other subscales: 대인관계기술 (interpersonal skills) and 사려깊음 (thoughtfulness), there were no statistically significant differences among the three generations. Also, when the interaction effect between gender and generation on the five subscales of the KESA were examined, there were no significant differences in the means of the first four subscales of 진취성 (initiative), 대인관계기술 interpersonal skills), 신뢰성 (dependability), and 사려깊음 (thoughtfulness), but there was a statistically significant interaction effect detected on 부정적 문항 (reversed items).

Conclusions

Research Question One: Factor Analysis and Reliability Coefficients

A five-factor model comprising the Korean work ethic was uniquely identified as measured by the KESA. The five-factor model was selected based on several model fit indices, a scree plot, maximum likelihood estimate, uniqueness of the meanings of each item, comparability with the original version of the ESA, and interpretability through Korean cultural norms, and values. The researcher selected labels for each factor considering past terms used in the OWEI, the KOWEI, and the ESA. Factor 1was labeled 진취성 (initiative) and retained eight items. This factor described characteristics of workers who accomplish their goals, are enthusiastic to complete the assigned work, complete their plans, do more work than required, do not waste time, solve problems on their own, are happy and do not disappoint other people.

Factor 2 was labeled 대인관계기술 (interpersonal skills). This factor reflected work ethic characteristics of interpersonal skills such as communication skills where collaboration and cooperation are emphasized. 대인관계기술 (Interpersonal skills) retained four items that exhibited people's likeability by others and likeability for others. Employees who have this work ethic attribute are socially likeable and acceptable in their appearances, and behave by being in good harmony with other people.

Factor 3 was labeled 신뢰성 (dependability) and this factor had four items. 신뢰성 (Dependability) included items that represented workers' care and effort in the workplace such as following rules and instructions, telling the truth, working well with others, and doing the right thing.

Factor 4 was labeled 사려깊음 (thoughtfulness) and retained four items. People who have this work ethic attribute have good manners, are aware of what is happening in their

surroundings, try to do good work, think of others, are careful, and help other people by looking for ways to help. This work ethic attribute explains contemporary Korean people considering that the Korean culture is based on Confucianism and collectivism (Seth, 2011). In order to be successful in the Korean society, having a good rapport with other people is critical. We can see this attribute in funerals and wedding ceremonies. When a colleague faces a funeral, coworkers visit the funeral and comfort the colleague. It is common to see colleagues stay days and nights together comforting their colleague in Korean society.

Factor 5 was labeled 부정적 문항 (reversed items) and consisted of three items. All the three items were negative questions that may block a person's good performances at work, such as wasting time and having a difficulty in finding solutions. As described by Park and Hill (2016), the three reversed question of the ESA are designed to prohibit potential respondents from quickly selecting ratings perceived to be positive without understanding the actual questions, and the KESA has the same reversed questions. Factor 5 of the KESA only consists of these three negative questions. Future researchers are recommended to use all the 23 item questions but consider including only the first four factors when scoring of each factor since Factor 5 produced a relatively low reliability coefficient alpha (α =.51).

Petty and Hill (1995) extracted four factors using the OWEI and identified them as consisting of reversed items, and the three factors labeled *interpersonal skills, initiative, and being dependable*. When Kim (2007) examined the constructs of Korean work ethic measured by the Korean version of the OWEI (KOWEI), six factors were extracted. That study implied that the dimensions of work ethic could be different from culture to culture (Strickland, 2003). Hill (1995) suggested a three-factor model when he developed the Employability Skills Assessment (ESA) based on the OWEI and labeled the subscales as measuring: *interpersonal skills,*

initiative, and dependability. The KESA indicated multi-dimensions of work ethic as other past studies on work ethic suggested (Mann, Taber, & Haywood, 2013; Petty & Hill, 2005; Kim, 2007). Interpersonal skills in both the ESA and the OWEI described relationships with other people in the workplace such as being likeable by others, having good manners, helping other people, being thoughtful of others, and doing good work. Initiative represented the characteristics of being ambitious, accomplishing goals, not wasting time, completing the assigned work, and doing more work than expected. Dependability included attributes such as telling the truth, keeping promises, following rules and instructions, and trying to avoid making mistakes.

진취성 (Initiative) retains five items (2, 8, 18, 21, and 22) from the Initiative subscale of the ESA, and the English factor has nine items in it. 대인관계기술 (Interpersonal skills) retains four items (7, 9, 14, and 23) from the interpersonal skill subscale of the ESA, and the English factor has eight items in it. 신뢰성 (Dependability) in the KESA was viewed to be similar to the ESA subscale labeled dependability, and three items of the English construct (items 13, 17, and 20) out of six items in the construct, dependability, of the ESA were included in the Korean construct labeled with the same name, 신뢰성 (dependability). 사려깊음 (Thoughtfulness) consisted of items from the three subscales of the ESA, and two items were from interpersonal skills, one item from initiative, and the other one from dependability.

As each construct of the ESA has a different number of items, the KESA retained a different number of items in each construct. The five factors combined explained 54.45% out of the total variance and 41.91 % of the common variance. This was similar to the results of the OWEI, which was 38.86%, and the KOWEI, which was 46.79%, and both the OWEI and the KOWEI used a PCA and the variances explained were the variances out of the total variance.

Considering that this study employed a common factor model using a maximum likelihood estimate and the variance explained here did not include the unique variance, 41.91% can be viewed as evidence of validity.

The KESA had model indices with chi-square (χ^2) (148, N =450) = 332.9289 with $p <$ .0001, which was statistically significant, AIC = 45.9407, RMSEA = .056, SRMR = .034, and Tucker and Lewis's index = .901, while the ESA had model indices with χ^2 (227, N=14045)= 11712.114; $p <$ .0001; RMSEA = 0.060; SRMR = 0.040; and AIC =11810.114 (Park & Hill, 2016). Finally, in this study, a maximum likelihood estimate was employed to extract factors for a common factor model of the KESA. Not only results of a PCA, a PAF, a ML but also a scree plot and several model indices were examined to select a five-factor model, which made the factor analysis in this study robust and rigorous.

Using Cronbach's alpha, reliabilities of each factor were calculated. Out of the five factors, the first four factors showed acceptable reliabilities, and the last factor showed a low reliability: coefficient α = .80 for 진취성 (initiative), coefficient α =.77 for 대인관계기술 (interpersonal skills), coefficient α =.68 for 신뢰성 (dependability), coefficient α =.72 for 사려깊음 (thoughtfulness) and coefficient α =.51 for 부정적 문항 (Reversed Items). Since the estimate of reliability depends on the size of a sample and the number of items (Hattie, Jaeger, & Bond, 1999), as the number of items increase and the sample size becomes bigger, the reliability tends to increase as well. Thus, considering that the second, third, and the fourth factors retained four items each and the last factor had three items, it is understandable that the results of the reliabilities of those factors showed acceptable reliabilities and a relatively low reliability.

Research Question Two

In order to answer the second research question related to describing South Korean work ethic, a questionnaire with 23 KESA items and a 7-point Likert scale was used to collect data from South Korean workers. The total usable number of responses was 450. Descriptive statistics were used to answer the second research question such as the means of each factor of the KESA and standard deviations. It was concluded that the highest mean score was 사려깊음 (thoughtfulness), (M = 5.31, *SD* = 0.75), 대인관계기술 (interpersonal skills), the second (M = 5.25, *SD* = 0.76), 진취성 (initiative), the third (M = 5.24, *SD* = 0.69), 신뢰성 (dependability), the fourth (M = 5.2300, *SD* = 0.75), and 부정적 문항 (reversed items) had the lowest mean score (Mean = 4.83, *SD* = 0.85). This conclusion that Korean workers showed a relative higher scores on 사려깊음 (thoughtfulness) and 대인관계기술 (interpersonal skills) reflects the current Korean culture that Korean workers care for co-workers and having good relationships with them in the workplace, and Korean culture is based on collectivism (Seth, 2011). Also, the result that 진취성 (initiative) had a relatively higher score than the other two subscales may suggest that this work ethic contributed to Korea accomplishing significant economic growth relatively very fast for the last five decades.

Research Question Three: Multivariate Analysis of Variance (MANOVA)

In order to answer the third research question, a MANOVA was performed. The results indicated that there were no statistically significant differences in the work ethic subscales between women and men. This result was slightly different from other studies of work ethic in South Korea in the past. For example, Kim's study (2007) suggested that Korean male workers tended to show higher scores on 유능함 (efficiency) and 헌신 (devotion) as measured by the OWEI. Also, this conclusion was different from the findings of Hill (1992), which indicated that

women scored higher than men on all the subscales as measured by the OWEI. However, the results of the current study were consistent with the findings of Joseph (2010) that there were not significant differences of work ethic between women and men in America as measured by the OWEI. This conclusion suggested that the work ethic of women and men have changed over the decades. It has been almost ten years since Kim's study (2007), and more than two decades since Hill's study (1992). One of the latest studies on work ethic was Joseph (2010) and its finding related to gender differences in the work ethic was similar to the finding of this study. This implies that over the years, the environment in South Korea changed. For example, many women who worked ten years ago are now retired. Women of Generation X and Millennials have careers and appear to have a different work ethic. The social cognitive theory (Bandura, 1986, 2005) provides an explanation for this change. Based on the different experiences, a changed environment with new policies and legislation, and shifting cultural expectations, women's work ethic for these later generations formed under different influencing factors. This conclusion also suggests that South Korean cultural norms are similar to those in the western world as the findings of this study followed the ones of Joseph's study (2010). Particularly, women of Generation X had relatively good opportunities for education. They were also part of the more recent extremely competitive society in South Korea. Those of Generation X, who were born in the early 1970s, were part of another wave of expanding population in South Korea. Regardless of gender status, they had to compete for better education and better jobs. Today, Generation X workers are the mainstream in the Korean workplace. Thus, expecting the same or similar work ethic from women and women employees is not surprising anymore in South Korea.

Another conclusion was that there were no statistically significant effects of the interaction between gender and generation on the first four subscales of work ethic when

measured by the KESA. That is, we cannot say that male workers are more initiative than female workers, that female have stronger interpersonal skills than male workers, that male workers are more dependable than female workers, and that male workers are more conscious than female workers in South Korea, even when examining data that spans the three generations studied. However, it was concluded that there were statistically significant effects of the interaction between gender and generation on the fifth factor, 부정적 문항 (reversed items). Based on different generations, women and men had different scores on 부정적 문항 (reversed items). Between women and men in Baby Boomers, Baby Boomer males (M = 5.17, *SD* = 0.92) had higher scores on the subscale, 부정적 문항 (reversed items), than Baby Boomer females (M = 4.76, *SD* = 1.18). However, between women from Generation X and men from Generation X, females of Generation X (M = 5.10, *SD* = 0.77) scored higher than males of Generation X (M = 4.82, *SD* = 0.67) on 부정적 문항 (reversed items). It is interesting that scores on the subscale, 부정적 문항 (reversed items), of Korean Millennials were similar in females (M = 4.48, *SD* = 0.73) and males (M = 4.49, *SD* = 0.85) not like the other two generations. This conclusion also well explains that a person's work ethic can be affected by the environment that he or she belongs to as the social cognitive theory explains. Specifically, females from Generation X were raised and educated in quite different social and cultural expectations compared to those from the other two generations as the literature indicated in Chapter 2. That is, Baby Boomer females experienced discrimination in the cultural expectations of their time, but parents of Generation X were educated not to distinguish sons from daughters when they planned how many children they would have, and Millennials were raised without acknowledging the discrimination between sons and daughters.

Based on the findings of this study, it was concluded that there were statistically significant differences for generation on the three subscales of 진취성 (initiative), 신뢰성 (dependability) and 부정적 문항 (reversed items) as measured by the KESA in South Korea. Between Generation X and Millennials, Generation X had higher scores than Millennials. Between Baby Boomers and Millennials, Baby Boomers scored higher than Millennials. Between Generation X and Baby Boomers, there were no statistically significant differences in the same factors, 진취성 (initiative), 신뢰성 (dependability) and 부정적 문항 (reversed items). Generation X had the highest mean on 진취성 (initiative), Baby Boomers the second, and Millennials the third. On 신뢰성 (dependability) and 부정적 문항 (reversed items), Baby Boomers scored the highest, Generation X the second, and Millennials the third. However, there were no statistically significant differences in the three subscales of the KESA between Baby Boomers and Generation X. This conclusion was understandable considering that Generation X and Baby Boomers must have already experienced failures and successes in their workplace. They had also spent the most time in industry, had more responsibilities in the workplace and for their families considering their higher positions in the workplace, and they may have learned more about how to be successful in the workplace. Millennials might also be learning and experiencing these things but they have spent relatively less time in the workplace than the other two generations. In addition, many Millennials are not married and do not have families to support, so they may not be as driven to be successful in the workplace to make more income. In terms of dependability, responsibilities for family and for society, past experiences, and expectations from the nation, company, family, and relatives may have led to different work ethic attributes for persons of different generations in South Korea. This conclusion was similar to the findings of Kim's study (2007). Kim suggested that the age group of 15-24, who were approximately 23-32 in the fiscal

year 2015 and are now Millennials, had lower scores on the subscale 유능함 (efficiency) in the KOWEI than the age group of 45-64, who were approximately 53-72 in 2015 and are part of the Korean Baby Boomers. Also, this conclusion is consistent with the findings of Joseph's study (2010) that Millennials had the lowest score for work ethic as measured by the OWEI.

Implications for Theory

This research study was guided by Bandura's social cognitive theory (SCT; Bandura, 1986, 2005). Based on the SCT, a person, a person's behavior, and the environment that the person belongs to affect one another and are affected by one another. As the social cognitive theory suggested (Bandura, 1986, 2005), behaviors of members of a culture and/or a society are affected by the environment which they belong to and influenced by politics, legislation, the economy (Furnham, 1990), cultural norms, and cultural and societal expectations. Also, persons' behaviors are influenced by their own self-efficacy, motivation, and past experiences. The SCT explains the different dimensions of work ethic as measured by the KESA in South Korea since South Koreans live in a different culture and society. Social and cultural incentives can motivate human's motivation and moral standards (Bandura, 2005). People cultivate their beliefs, interests, and competencies by observing models, using their self-efficacy, using past experiences and regulating self, and then people organize their lives, create new behaviors and manage their circumstances in new ways. The results of an exploratory factor analysis in this study suggested a five-factor model of the KESA while Hill (1995) identified three subscales for the ESA based on the prior study of the OWEI. Cultural differences may explain the inconsistent number of dimensions of work ethic. This empirical research study suggested that work ethic should be viewed through a culturally appropriate lens when international research is conducted.

Environmental, personal, and behavioral factors collectively influence work ethic since it is a cultural norm and is formed and learned through societal influences (Hill & Fouts, 2005).

Implications for Practice

In the twenty-first century workplace, work ethic is continually emphasized as one of the most important soft skills to maintain a job. It is important to foster work ethic and educate job seekers, employees, and students who want to be hired in the near future to develop a strong or positive work ethic. As the literature suggested, various factors affect work ethic and its formation (Hill, 1993; Hill & Fouts, 2005; Joseph, 2010; Kim, 2007). This dissertation can serve to help educators, employers, leaders, job trainers, and evaluators of employees' performance understand the influences on work ethic formation, understand each generation better, and know what to expect of different genders in the workplace as well. Strong work ethic may lead to an overall increase in productivity in organizations (Huang & Capelli, 2007). Understanding each generation and gender, fitting jobs to employees, and shaping working groups and teams may lead to achieving the best possible working environments for employees and their organizations.

In addition, educators of students in Career and Technical Education (CTE) and trainers in the human resource development (HRD) departments in South Korea can use the KESA in their practices. Educators and trainers may develop curricula or programs based on the three factors of the KESA and use them to teach students and new employees about work ethic in schools and organizations. Students themselves can acknowledge the importance of the work ethic as a preparation for a job application and for maintaining a job after getting hired. They can learn from the work ethic attributes represented by the 23 KESA items. Job seekers can also diagnose their personal work ethic by assessing their own work ethic using the KESA, finding

their limitations, and fostering the work ethic attributes that they lack based on the results of the KESA.

Hill provides several online lessons and a curriculum unit through a work ethic website (URL:http://workethic.coe.uga.edu/) that he developed (Park & Hill, 2016). The purpose of the website is to provide and disseminate work ethic resources for work ethic instruction, employability skills for workforce development, and work competencies that educators and human resource professionals can use in their practice at no cost (Park & Hill, 2016). The work ethic site also provides online versions of both the ESA and the OWEI for anyone to complete for free and respondents can receive the results of their scores at the end of surveys.

The website serves the Korean language as well. Park, the researcher of this study, translated major portions of the resources on the website into the Korean language with permission from Hill so that Korean people can freely use those materials without limitations language differences. The Korean version of the ESA, the KESA, is also electronically available through the website.

Diagnosing, assessing, and understanding women's work ethic is important in the contemporary Korean society as well. Decades ago in South Korea, women were particularly expected to devote themselves to support their brothers for their education. However, over the past decades, expectations toward women changed in many ways. As the literature review shows, it has already been a long time since women became a part of the workforce in South Korea. In addition, many famous CEOs are women today in South Korea: the Hyundai Group's Chairwoman, Ms. Hyun Jung-Un (since 2003), and Lee Boo-Jin, the chairwoman of *Hotel Shilla* (since 2010). A news report examined the change in the number of women CEOs in the top 100 leading companies in South Korea from 2004 through 2014 (MuhwIlBo, 2013). In 2004, there

were only 13 women executives in the 100 top companies; in 2006, there were 22 women executives; in 2011, 77 women executives; and in 2012, there were 114 women executives in the top 100 companies in South Korea. Included were companies such as *Hanjin, Hanhwa, Samsung, LG, SK, GS, Lotte,* and *Hyundai Motors* (MuhwIlBo, 2013). This suggested that new Korean policies in the twenty-first century, such as Gender Discrimination Prevention and Relief Act, Child Care Support Act, Gender Equality Policy, the Compatibility in Work and Family Policy, maternity leave for new mothers, and parental leave for new fathers have positively affected women's participation in the workplace and the maintenance of jobs among women (Korean Ministry of Gender Equality and Family, 2016). Also, expectations from Korean society and Korean culture have led to this result as well. In addition, the desegregation of gender and negative stereotypes toward women in the workforce have decreased over recent decades (Munhwa Ilbo, 2013). This trend is expected to continually increase in the future.

Understanding differences in the work ethic among different generations in South Korea today is very meaningful and important. South Korea has its own unique history and has changed in many ways in the latest several decades. Right after the independence from Japan's 36-year colonization through a series of civil and Korean wars, without anything left, Korean people began to build a new country out of nothing literally. Baby Boomers dedicated themselves to their nation sacrificing their own private lives for their country. Generation X had to survive an extremely competitive environment. The tendency of segregation rooted from Confucianism between sons and daughters began to fade away from South Korea. Daughters as well as sons were expected to be well educated and participated in the workplace too. Generation X persons have benefited from the rapid economic growth in Korea and the impact of globalization. Also, Generation X experienced many democratic social movements against military governors such

as the Gwangju Democratic Movement in 1980. They also experienced several worldwide sports games held in South Korea such as the 1986 Asian Games and the 1988 Seoul Olympic Games while they were young. They experienced the beginning of the era of new Presidents from non-military governmental backgrounds in the 1990s. Millennials, however, had limited siblings because of the governmental birth control policy as well as because of the low birth rate caused by financial hardships of households and the high cost of raising children. They watched their parents' difficulties due to actions by the IMF crisis in 1997 when they were still young.

South Korea is becoming a super-aged society (Kang, 2013; Rim, 2013). According to the Korean minister of Health and Welfare of the Korean Government (Rim, 2013), contemporary South Korea has faced three big socio-economic problems: (a) Korea has to manage the aging society well, (b) The Korean government has to maintain its current fiscal sustainability, and (c) Korea should maintain its ongoing economic growth (Rim, 2013). Rim suggested that changing the attitudes of people would be one possible solution (Rim, 2013). The Korean government introduced a new law called the Framework Act on Low Birthrate in an Aging Society in 2006, which can be a great help to families as they seek a balance between work and family for both female and male workers (Rim, 2013). The Korean government is trying to include more female workers and foreign workers as well (Rim, 2013). The Korean government is acting to embrace baby boomers in the workplace who are approaching retirement age (Rim, 2013) by delaying retirement and creating new opportunities for them (Rim, 2013). Rim suggested that if Baby Boomers work longer, tensions caused by the burden of supporting elder people between young generations and Baby Boomers could be reduced (Rim, 2013). This study supports the benefits of keeping Baby Boomers in the workforce because of their strong work ethic and the contributions they can make to Korean society.

Implications for Further Research

This study can serve as a basis for future studies on work ethic in South Korea. In South Korea, there have not been many studies on work ethic until now. Based on this scientific research-based study, South Korean researchers have one more instrument with sound psychometric properties including construct validity and reliability that was developed through empirical research. For testing the common factor model fit, the researcher has started to conduct a confirmatory factor analysis on a different data set collected using the KESA in South Korea. The results of that work will be published in a future manuscript.

Research Limitations

While the results of this study make several contributions to theory and practice in the field of work ethic, several limitations must be considered in this research as well. First, the findings from this study are not necessarily generalizable to all workers, to all generations, and to all women and men in South Korea. The researcher used the non-probability convenience sampling method to collect data. Even though the researcher included initial contact people from various occupation categories, from different geographic areas, and from different age groups, research participants may not reflect workers from all occupations, from all age groups, and from all geographic areas in South Korea. Thus, a different data set collected using a different data collection method could result in different findings. Second, research participants responded to an instrument that focused on workers' work ethic behaviors, but the instrument cannot measure all work ethic attributes. Third, factor analysis is very subjective in its nature. Although the researcher followed recommendations of researchers on factor analysis and the best knowledge that the researcher had when applying an exploratory factor analysis, the results of a comparable

study conducted by a different researcher might result in different findings since EFA techniques "involve a number of subjective decisions" (Van Prooijen & Van der Kloot, 2001, p. 778).

Recommendations

The Employability Skills Assessment could be translated into other languages, such as Chinese, Japanese, Spanish, German, French, Italian, and Arabic. Other factor analytical procedures applied to the ESA in those languages would be meaningful to explore and enable researchers to compare work ethic in international work settings. Particularly, a Chinese version and/or a Japanese version of the ESA are recommended to be developed since Korea, China and Japan have many similar cultural backgrounds as well as Confucian values. If data collection using a China version and/or a Japanese version could be analyzed, meaningful comparative research studies could be done.

Teachers, trainers, and researchers related to career preparation and career development in South Korea can also utilize the KESA and the online materials that the work ethic site provides (URL:http://workethic.coe.uga.edu/kwe) and conduct experimental research studies. Since free online lessons and curriculum materials are available in the Korean language via the work ethic site, teachers and/or trainers working with students and/or employees can use these materials and compare the results before and after work ethic instructions using the KESA. Availability of the KESA online can enhance future work ethic instructions, career development, and career preparation with Korean-speaking populations.

A further study using a qualitative research method through interviews and/or observations to explore the relationship between gender and work ethic is recommended. Gaining deeper understanding about how men and women differ with respect to work ethic would bring more understanding of the role of work ethic in South Korea.

Another recommendation is that a qualitative study using interviews of people from each generation could enrich understanding of the differences in the work ethic among generations in South Korea.

A cross-cultural comparative research study of work ethic between South Korea and the United States could be done as well. Even though subscales generated by the English and Korean versions of the ESA are somewhat different, comparisons of potential work ethic differences could be explored using the subscales that overlap.

The last recommendation is to analyze results across years in a longitudinal study to see how individuals' work ethic changes in both the Unites States and South Korea. While such a study would require considerable resources, the results would be very informative and valuable as a contribution to scholarship in the field of workforce education.

REFERENCES

Aaronson, D., Park, K. H., & Sullivan, D. (2006). The decline in teen labor force participation. *Economic Perspectives*, *30*(1), 2-18.

Applebaum, H. (1998). *The American work ethic and the changing work force: An historical perspective*. Contributions in Labor Studies, Number 52.

Artino, A. J. (2007). Bandura, Ross, and Ross: Observational learning and the Bobo doll. *Online Submission*. EBSCOhost.

Bancino, R., & Zevalkink, C. (2007). Soft skills: The new curriculum for hard-core technical professionals. *Techniques*, *82*(5), 20-22.

Bandura, A. (1971). *Psychological modeling: conflicting theories*. Chicago, MI: Aldine-Atherton.

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory.* Englewood Cliffs, NJ: Prentice Hall.

Bandura, A. (1989). Social cognitive theory. In R. Vasta (Ed.), *Annals of child development*. (Vol. 6). *Six theories of child development* (pp. 1-60). Greenwich, CT: JAI Press.

Bandura, A. (2001). Social cognitive theory: An agentic perspective. *Annual Review of Psychology*, *52,* 1-26. Palo Alto: Annual Reviews, Inc. doi:10.1146/annurev.psych.52.1.1

Bandura, A. (2005). The evolution of social cognitive theory. In K. G. Smith, & M. A. Hitt (Eds.), *Great Minds in Management*. (pp. 9-35). Oxford, NY: Oxford University Press.

Bandura, A. (Ed.). (1995). Exercise of personal and collective efficacy in changing societies. In A. Bandura. (Ed.)., *Self-efficacy in changing societies* (pp. 1-45). New York, NY: Cambridge University Press.

Bartlett, M. S. (1950). Tests of significance in factor analysis. *British Journal of Psychology*, 377-85. doi:10.1111/j.2044-8317.1950.tb00285.x

Beach, D. P. (1981). Preliminary development of an affective work competencies testing program. Retrieved from http://files.eric.ed.gov/fulltext/ED205532.pdf

Beder, S. (2000). *Selling the Work Ethic*. New York, NY: St. Martin's Press.

Benson, J., & Nasser, F. (1998). On the use of factor analysis as a research tool. *Journal of Vocational Education Research*, *23*(1), 13-33.

Bentler, P, M, & Bonett, D. G. (1980). Significance tests and goodness of fit in the analysis of covariance structures, *Psychological Bulletin, 88*, 588-606.

Blau, G. & Ryan, J. (1997). On measuring work ethic: A neglected work commitment facet. *Journal of Vocational Behavior, 51*, 435-448.

Blood, M. (1969). Work values and job satisfaction. *Journal of Applied Psychology*, *53*(6), 456-459. doi:10.1037/h0028653

Boatwright, J. R., & Slate, J. R. (2002). Development of an instrument to assess work ethics. *Journal of Industrial Teacher Education*, *39*(4).

Brislin, R. W. (1970). Back-translation for cross-cultural research. *Journal of Cross-Cultural Psychology, 1*(3), 185. doi:10.1177/135910457000100301

Buchholz, R. (1977). The belief structure of managers relative to work concepts measured by a factor analytic model. *Personnel Psychology, 30*, 567-587.

Bussey, K., & Bandura, A. (1999). Social cognitive theory of gender development and differentiation. *Psychological Review*, *106*(4), 676-713. doi:10.1037/0033-295X.106.4.676

Callahan, S. (2008). Customer-centric differentiation: The key to market success. *LOMA Resource*: 22-25.

Casner-Lotto, J. (Lead author) (2006). Are they really ready to work? Employers' perspectives on the basic knowledge and applied skills of new entrants to the 21st century U.S. workforce. [United States]: Conference Board: Partnership for 21st Century Skills: Corporate voices for working families: Society for human resource management. Retrieved from http://www.p21.org/storage/documents/FINAL_REPORT_PDF09-29-06.pdf

Cattell, R. B. (1966). The scree test for the number of factors. *Multivariate Behavioral Research*, *1*(2), 245-276. doi:10.1207/s15327906mbr0102_10

Cennamo, L., & Gardner, D. (2008). Generational differences in work values, outcomes and person-organisation values fit. *Journal of Managerial Psychology*, *23*(8), 891-906. doi:10.1108/02683940810904385

Chang, H. (2007). 한국인의 직업의식과 직업윤리 (Korean work values and work ethic: the title was translated by the researcher). *Korea Research Institute for Vocational Education and Training*. Seoul: Korea.

Cherrington, D. J. (1980). *The work ethic: Working values and values that work*. New York, NY: American Management Association.

Choi, E. (2013). Political issues, generation gap, and voting behavior in South Korea: The 2010 Seoul mayoral election. East Asia: *An International Quarterly, 30*(4), 237-254. doi:10.1007/s12140-013-9197-4

Christopher, A. N., & Schlenker, B. R. (2005). The Protestant work ethic and attributions of responsibility: Applications of the triangle model. *Journal of Applied Social Psychology*, *35*(7), 1502-1518.

Codrington, G. (2008). Detailed introduction to generational theory. Tomorrow today [Web blog] Retrieved from http://www.tomorrowtoday.uk.com/articles/pdf/TomorrowToday_detailed_intro_to_Generations.pdf

Comrey, A. L., & Lee, H. B. (1992*). A first course in factor analysis* (2nd ed.). Hillsdale, NJ: L. Erlbaum Associates.

Cortina, J. M. (1993). What is coefficient alpha? An examination of theory and applications. *Journal of Applied Psychology, 78*, 98-104.

Costello, A. B. & Osborne, J. W. (2005). Best practices in explanatory factor analysis: Four recommendations for getting the most from your analysis. *Practical Assessment, Research & Evaluation, 10*(7), 1-8.

Creative AD_CH2. (2015). 가족계획 출산억제 저출산 장려 1970 년대 광고 (Public service advertisements for the birth control policy in the 1970s). [YouTube channel]. Retrieved from https://www.youtube.com/watch?v=rgnwJaqY9tM

Crocker, L. M., & Algina, J. (1986). *Introduction to classical and modern test theory*. New York, NY: Holt, Rinehart, and Winston.

Cudeck, R., & MacCallum, R. C. (Eds.) (2007). *Factor analysis at 100: Historical developments and future directions.* Mahwah, NJ: Lawrence Erlbaum Associates.

de Winter, J. C., & Dodou, D. (2012). Factor recovery by principal axis factoring and maximum likelihood factor analysis as a function of factor pattern and sample size. *Journal of Applied Statistics, 39*(4), 695-710. doi:10.1080/02664763.2011.610445

Deal, J. J., Altman, D. G., & Rogelberg, S. G. (2010). Millennials at work: what we know and what we need to do (if anything). *Journal of Business Psychology*, *25*, 191–199. doi:10.1007/s10869-010-9177-2

DeCarlo, L. T. (1997). On the meaning and use of kurtosis. *Psychological Methods, 2*(3), 292-307. doi:10.1037/1082-989X.2.3.292

Dunteman, G. H. (1984). *Introduction to multivariate analysis*. Thousand Oaks, CA: Sage.

Dunteman, G. H. (1989). *Principal components analysis.* Newbury Park, CA: Sage.

Eagly, A. H., & Carli, L. L. (2004). Women and men as leaders. In J. Antonakis, R. J. Sternberg, & A. T. Cianciolo (Eds.), *The nature of leadership* (pp. 279-301). Thousand Oaks, CA: Sage.

Engelhard, G. (2013). *Invariant measurement: Using Rasch models in the social, behavioral, an d health sciences*. New York, NY: Routledge.

Eriksen, T. H. (2014). *Globalization: the key concepts*. London; NY: Bloomsbury Academic.

Field, A. P. (2009). *Discovering statistics using SPSS* (3rd ed.). Los Angeles, London: Sage.

Filipczak, B. (1994). It's just a job: Generation X at work. *Training, 31*(4), 21-30.

Flynn, G. (1994). Attitude more valued than ability. *Personnel Journal*, *73*, 16.

Ford, J. K., MacCallum, R. C., & Tait, M. (1986). The application of exploratory factor analysis in applied psychology: A critical review and analysis. *Personnel Psychology*, *39*(2), 291-314. doi:10.1111/j.1744-6570.1986.tb00583.x

Fraenkel, J. R., & Wallen, N. E. (2003). *How to design and evaluate research in education* (5th ed.). New York, NY: McGraw-Hill.

Friedman, T. L. (1999). *The Lexus and the olive tree*. New York, NY: Anchor.

Friendly, M. (2008, March). Notes for a lecture on exploratory and confirmatory factor analysis. Psychology 6140 resources. Retrieved from http://www.datavis.ca/courses/factor/efacfa-handout1-2x2.pdf

Furnham, A. (1990). A content, correlational, and factor analytic study of seven questionnaire measures of the Protestant work ethic. *Human Relations*, *43*, 383−399. doi:10.1177/001872679004300406

Furnham, A., & Muhiudeen, C. (1984). The Protestant work ethic in Britain and Malaysia. *Journal of Social Psychology*, *122*, 157-161.

Gall, M., Gall, J., & Borg, W. (2007). *Educational research: An introduction* (8th ed.). Boston, MA: Allyn & Bacon.

Ghorpade, J., Lackritz, J., & Singh, G. (2006). Correlates of the Protestant ethic of hard work: Results from a diverse ethno-religious sample. *Journal of Applied Social Psychology*, *36*(10), 2449-2473. doi:10.1111/j.0021-9029.2006.00112.x

Goldstein, B., & Eichhorn, R. L. (1961). The changing Protestant Ethic: Rural patterns in health, work, and leisure. *American Sociological Review, 26*(4), 557-565.

Gorsuch, R. L. (1983). *Factor analysis* (2nd ed.). Hillsdale, NJ: L. Erlbaum Associates.

Grayson, D. (2004). Some myths and legends in quantitative psychology. *Understanding Statistics, 3*(1), 101-134.

Guttman, L. (1954). Some necessary conditions for common-factor analysis. *Psychometrika, 19*(2), 149. doi:10.1007/BF02289162

Hakstian, A. R., & Rogers, W. T. (1982). The behavior of number-of-factor rules with simulated data. *Multivariate Behavioral Research*, *17*(2), 193. doi:10.1207/s15327906mbr1702_3

Hammond, P. E., & Williams, K. R. (1976). The Protestant ethic thesis: A social-psychological assessment. *Social Forces, 54*(3), 579-589.

Harvell, K. D. (2009). A new study of work ethic as determined by occupation, education, age, gender, and work experience. Dissertation written at the University of Georgia. Retrieved from http://dbs.galib.uga.edu/cgi-bin/getd.cgi?userid=galileo&action=search

Hatcher, T. (1995). From apprentice to instructor: Work ethic in apprenticeship training. *Journal of Industrial Teacher Education*, *33*(1), 24-45.

Hattie, J., Jaeger, R.M., & Bond, L. (1999). Persistent methodological questions in education testing. *Review of Research in Education, 24* (1999), pp. 393-446.

Hill, R. B. (1992). The work ethic as determined by occupation, education, age, gender, work experience, and empowerment (Doctoral dissertation, The University of Tennessee, Knoxville). *Dissertation Abstracts International*, *53*, 2343A.

Hill, R. B. (1995, 2014). *Development of the Employability Skills Assessment*. Unpublished manuscript, Department of Career and Information Studies, The University of Georgia, Athens, GA, the U.S.A.

Hill, R. B. (1997). Demographic differences in selected work ethic attributes. *Journal of Career Development*, *24*(1), 3-23.

Hill, R. B. (2004). Introduction to ethical issues in a technological world. In R. B. Hill (Ed.), *Ethics for citizenship in a technological world*. (pp.1-19). 53rd yearbook. *Council on Technology Teacher Education*. New York, NY: McGraw-Hill. Retrieved from http://vtechworks.lib.vt.edu/handle/10919/19153

Hill, R. B. (2004). *Work ethic and employability skills*. Work ethic curriculum materials. Retrieved with permission from http://workethic.coe.uga.edu/mp.html

Hill, R. B., & Petty, G. C. (1995). A new look at selected employability skills: A factor analysis of the occupational work ethic. *Journal of Vocational Education Research*, *20*(4), 59-73.

Hill, R. B. (2015, November). A framework for 21st century work preparation. Keynote presentation for the North Georgia Technical College Industrial Summit, Clarkesville, Georgia.

Hill, R.B., & Fouts, S. (2005). Work ethic and employment status: A study of jobseekers. *Journal of Industrial Teacher Education*, *42*(3), 48-65.

Hill, R. B., & Rojewski, J. W. (1999). Double jeopardy: Work ethic differences in youth at risk of school failure. *The Career Development Quarterly*, *47*, 267-280. doi:10.1002/j.2161-0045.1999.tb00736.x

Hill, R. B., & Rojewski, J. W. (2014, April 18). *A framework for CTE research and practice.* Poster presentation at the UGA College of Education Student-Faculty Conference, Athens, GA.

Ho, R., & Lloyd, J. (1984). Development of the Australian work ethic scale. *Australian Psychologist*, *19*, 321-332. doi:10.1080/00050068408255438

Horn, J. L. (1965). A rationale and test for the number of factors in factor analysis. *Psychometrika, 30*, 179-185.

Horn, J. L., & Engstrom, R. (1979). Cattell's scree test in relation to Bartlett's chi-suqare test and other observations on the number of factors problem. *Multivariate Behavioral Research*, *14*, 283-300.

Huang, F., & Capelli, P. (2007). Employee screening: Theory and evidence. *Research Collection School of Economics*. Retrieved from http://ink.library.smu.edu.sg/cgi/viewcontent.cgi?article=2029&context=soe_research doi:10.2139/ssrn.893261

Hutcheson, G. D., & Sofroniou, N. (1999). *The multivariate social scientist: Introductory statistics using generalized linear models*. Thousand Oaks, CA: Sage Publications.

Indiana University. (2014, December 23). What is Mplus, and where can I access it at IU? [Web log post]. Retrieved from https://kb.iu.edu/d/aupj

International Monetary Fund. (2000). *Globalization: Threat or opportunity?* Retrieved from https://www.imf.org/external/np/exr/ib/2000/041200to.htm#II

Jöreskog, K. G., & Sörbom, D. (2004). *LISREL (Version 8.71)*. Chicago: Scientific Software International.

Johnson, B., & Christensen, L. B. (2014). *Educational research: quantitative, qualitative, and mixed approaches* (5th ed.). LA: Sage.

Johnson, R. A., & Wichern, D. W. (2007). *Applied multivariate statistical analysis* (6th ed.). Upper Saddle River, NJ: Pearson Prentice Hall.

Jones, L. V., & Thissen, D. (2006). 1 A History and overview of psychometrics. *Handbook of Statistics, 26*(Psychometrics), 1-27. doi:10.1016/S0169-7161(06)26001-2

Joseph, J. A. (2010). How generation, gender, and personality affect work ethic; Guiding managers in leading a diverse workforce. (Doctoral dissertation, Argosy University). Retrieved from http://search.proquest.com/docview/922420812

Kaiser, H. F. (1960). The application of electronic computers to factor analysis. *Educational and Psychological Measurement, 20*(1), 141. doi:10.1177/001316446002000116

Kaiser, H. F. (1970). A second generation little jiffy. *Psychometrika, 35*(4), 401-415. doi:10.1007/BF02291817

Kaiser, H. F. (1974). A computational starting point for Rao's canonical factor analysis: Implications for computerized procedures. *Educational and Psychological Measurement*, *34*(3), 691. doi:10.1177/001316447403400322

Kang, J. M. (2013). Retirement of baby boomers in Korea and its impact on the financial market. *KIF Weekly Financial Brief*, *13*(20), 6-8.

Kass, R. A., & Kass, R. A. (1979). Factor analysis (Book Review). *Journal of Leisure Research*, *11*(2), 120-138.

Katz, I. & Hass R. (1988). Racial ambivalence and American value conflict: Correlational and priming studies of dual cognitive structures. *Journal of Personality and Social Psychology, 55*(6), 893-905.

Kaufman, A. S. (1975). Factor analysis of the WISC-R at 11 age levels between 6 &1/2 and 16 &1/2 years. *Journal of Consulting and Clinical Psychology*, *43*(2), 135-147. doi:10.1037/h0076502

Kazanas, H. C. (1978). Affective work competencies for vocational education. *Information Series No. 138.*

Kim, A. E. (2004). The social perils of the Korean financial crisis. *Journal of Contemporary Asia*, *34*(2), 221-237. doi:10.1080/00472330480000061

Kim, A. E., & Park, G. (2003). Nationalism, Confucianism, work ethic and industrialization in South Korea. *Journal of Contemporary Asia*, *33*(1), 37-49. doi:10.1080/00472330380000041

Kim, H., Kim, G. S., Kim, M. Y., Park, J. S., Oh, S. B., Jung., H. B., & Jung, Y. H. (2014). 노동시장 이중구조 해소를 위한 고용법제 국제비교 연구 (*Joint Research Report 2014*: Comparison the employment legislations of 5 countries–Germany, France, Japan, UK, and US to suggest the direction for improving Korea's current employment-related legislations so as to mitigate the labor market dualism). Seoul, Korea: National Research Council for Economics, Humanities and Social Sciences.

Kim, J. (2012). *A history of Korea: From "Land of the Morning Calm" to states in conflict*. Bloomington, IN: University Press

Kim, S. H. (1979). Korean education: Is it all right? *Educational Development* 1. 9-11. Seoul, Korea: Korean Educational Development Institute. Retrieved from https://www.kedi.re.kr/khome/main/journal/selectJournalForm.do

Kim, S. J. (2007). *Identifying work ethic constructs using a Korean translation of the OWEI*. (Doctoral dissertation, The University of Georgia). Retrieved from http://dbs.galib.uga.edu/cgi-bin/getd.cgi?userid=galileo&action=search

Kim, W. S., & Huh, J. U. (2007). Comparisons of lifestyles and consuming patterns of Korean generations.

Kim, Y. C., Park, J. Y., Kim, H. J., Yoon, J. H., & Kim, T. U. (2006). 미래사회에 대비한 학제개편방안 (Educational report: Suggestions for future educational system reformation). Korean Educational Development Institute. Retrieved from https://www.kedi.re.kr/khome/main/research/selectPubForm.do?plNum0=5906

Kim, Y. H. (2011, September). 한국 텔레비전 50 년과 대중문화: 텔레비전과 대중음악 간 관계를 중심으로 (50 years of Korean television history and culture: the relationship between television and pop music). In H. M. Yang (Chair), *History of Korean broadcasting: 50*

years. Symposium conducted at the meeting of Korean Broadcasters Association, Seoul, South Korea.

Kline, P. (2000). *The handbook of psychological testing*. London; New York, NY: Routledge.

Korea Ministry of Employment and Labor. (2014). *Yearbook of employment and labor statistics* [Serial number: 11-149000-000005-10]. Seoul, South Korea: Korea Ministry of Employment and Labor.

Korean Ministry of Gender Equality and Family (2016). Retrieved from http://www.mogef.go.kr/eng/policy/index06_01.jsp

Korean Ministry of the Interior. (2015). Retrieved from http://rcps.egov.go.kr:8081/jsp/stat/ppl_stat_jf.jsp

Korean Educational Statistics Service. (2006). *Statistical yearbook of education*. Seoul, South Korea: Ministry of Education Human Resources Development Retrieved from http://cesi.kedi.re.kr/index

Korea Research Institute for Vocational Education and Training. (2011). 베이비붐 세대의 일자리 창출 방안, *The HRD review*. *14*(1), 125-145.

Korean Standard Classification of Occupations. (2015, May 19). Introduction of classification of occupations in South Korea [Web blog post]. Retrieved from https://kssc.kostat.go.kr:8443/ksscNew_web/ekssc/main/main.do#

Krishnan, V. (2011). A comparison of principal components analysis and factor analysis for uncovering the early development instrument (EDI) domains. Unpublished manuscript, Early Child Development Mapping (ECMap) Project, Alberta, University of Alberta, Edmonton, Canada. Retrieved from http://www.cup.ualberta.ca/wp-content/uploads/2013/04/ComparisonPCACUPWebsite_10April13-1.pdf

Kupperschmidt, B. (2000). Multigeneration employees: Strategies for effective management. *The Health Care Manager*, *19*, 65-76. doi:10.1097/00126450-200019010-00011

Lawley, D. N. (1943). The application of the maximum likelihood method to factor analysis. *British Journal of Psychology. General Section, 33*(3), 172. doi:10.1111/j.2044-8295.1943.tb01052.x

Lee, H. B., & Comrey, A. L. (1979). Distortions in a commonly used factor analytic procedure. *Multivariate Behavioral Research*, *14*(3), 301. doi:10.1207/s15327906mbr1403_2

Lee, H. Y., Cho, S. U., Oh, J. H., Kim, S. H., & Lee, Y. S. (2012). A comparative study of modes of thought and behavior between digital and older generations. Korea Communications Commission. Policy Study 12-12.

Lee, H. Y., Go, H. S., Kim, S. H., Lee, Y. S, & Huh, M. H. (2013). A comparative study of the digital generation and the Baby-Boom generation. Ministry of Science, ICT and Future Planning. *Policy Research, 13*(49). Retrieved from https://www.kisdi.re.kr/kisdi/common/premium?file=1%7C13328

Liang, Z., Wei, J., Zhao, J., Liu, H., Li, B., Shen, J., & Zheng, C. (2008). The statistical meaning of kurtosis and its new application to identification of persons based on seismic signals. *Sensors, 8*(8), 5106-5119.

Lim, D. H., Petty, G., Fontan, J., & Yoon, S. W. (2008). The effect of self-directed work teams on work ethic. *Online Submission*.

Lim, D. H., Woehr, D. J., You, Y. M., & Gorman, C. A. (2007). The translation and development of a short form of the Korean language version of the multidimensional work ethic profile. *Human Resource Development International*, *10*(3), 319-331. doi:10.1080/13678860701515406

Luekitinan, W. (2014). Employability and job mobility: Critical skills for new graduates in ASEAN. *Global Journal of Business Research*, *8*(5), 1-8. Retrieved from http://www.theibfr.com/ARCHIVE/GJBR-V8N5-2014.pdf

Lyons, S., & Kuron, L. (2014). Generational differences in the workplace: A review of the evidence and directions for future research. *Journal of Organizational Behavior*, *35*(1), 139-157. doi:10.1002/job.1913

Mann, M. J., Taber, T. D., & Haywood, K. J. (2013). Work ethic revisited: Identifying and operationalizing new dimensions of work ethic a century after Weber. *Journal of Business Disciplines*, *11*(1), 65-101.

Mannheim, K. (1952). *Essays on the sociology of knowledge*. Routeledge and Kegan Paul

McMurray, A. & Scott, D. (2003). Work values ethic: A new construct for measuring work commitment. *Journal of American Academy of Business, 2*(2), 505-509.

Mendenhall, W., & Sincich, T. (2012). *A second course in statistics: Regression analysis* (7th ed.). Boston, MA: Prentice Hall.

Meriac, J., Woehr, D., & Banister, C. (2010). Generational differences in work ethic: An examination of measurement equivalence across three cohorts. *Journal of Business and Psychology*, *25*(2), 315-324. doi:10.1007/s10869-010-9164-7

Meriac, J. P., Woehr, D. J., Gorman, C. A., & Thomas, A. L. (2013). Development and validation of a short form for the multidimensional work ethic profile. *Journal of Vocational Behavior, 82*, 155-164. doi:10.1016/j.jvb.2013.01.007

Messick, S. (1995). Validity of psychological assessment: Validation of inferences from persons' responses and performances as scientific inquiry into score meaning. *American Psychological Association, 50* (9). 741-749. doi:10.1037/0003-066X.50.9.741

Midrace, S. (2008). The protestant work ethic revisited: a promising concept or an outdated idea? Retrieved from. http://hdl.handle.net/10419/43972

Miller, M. J., Woehr, D. J., & Hudspeth, N. (2002). The meaning and measurement of work ethic: Construction and initial validation of a multidimensional inventory. *Journal of Vocational Behavior*, 59, 1-39. doi:10.1006/jvbe.2001.1838

Ministry of the Interior. (March 2016). Monthly census of population in South Korea. Retrieved from http://rcps.egov.go.kr:8081/jsp/stat/ppl_stat_jf.jsp

Mirels, H., & Garret, J. (1971). Protestant ethic as a personality variable. *Journal of Consulting and Clinical Psychology*, *69*, 40-44. doi:10.1037/h0030477

Mislevy, R. J. (1986). Recent developments in the factor analysis of categorical variables. *Journal of Educational Statistics*, *11*, 3-31. doi:10.2307/1164846

Modrack, S. (2008). The protestant work ethic revisited: a promising concept or an outdated idea? Retrieved from http://hdl.handle.net/10419/43972

Moonhwailbo. (February 2013). 재계도 '여임원 전성시대'.100 대 기업서 114 명 맹활약. (114 women COEs actively working in the top 100 companies in South Korea) Retrieved from http://news.naver.com/main/read.nhn?mode=LSD&mid=shm&sid1=101&oid=021&aid=0002146223

Moore, S., Grunberg, L., & Krause, A. J. (2014). Generational differences in workplace expectations: A comparison of production and professional workers. *Current Psychology: A Journal for Diverse Perspectives on Diverse Psychological Issues*, doi:10.1007/s12144-014-9261-2

Moustaki, I. (2007). Factor analysis and latent structure of categorical and metric data. In R. Cudeck. & R. C. MacCallum (Ed.). *Factor analysis at 100: historical developments and future directions,* (pp. 293-314). Mahwah, NJ: Lawrence Erlbaum Associates

Mulaik, S. A. (2009). *Linear causal modeling with structural equations*. Boca Raton, FL: Chapman and Hall/CRC.

Mulaik, S. A. (2010). *Foundations of factor analysis* (3rd ed.). Boca Raton, FL: Chapman and Hall/CRC

Nunnally, J. C. (1978). *Psychometric theory* (2nd ed.). New York, NY: McGraw-Hill.

Muthén, B. O., & Muthén, L. K. (2006). *Mplus: Statistical analysis with latent variables, version 4.1.* Los Angeles, CA: Muthén and Muthén.

Muthén, L. K., & Muthén, B. O. (2010). *Mplus user's guide* (6th ed.). Los Angeles, CA: Muthén and Muthén.

National Museum of Korean Contemporary History (대한민국역사박물관). (2014, May 17). 대한민국가족계획의 변천사 (Contemporary history of Korean family planning) [Web log post]. Retrieved from http://muchkorea.tistory.com/196

Ness, R. V., Melinsky, K., Buff, C. L., & Seifert, C. F. (2010). Work ethic: Do new employees mean new work values? *Journal of Managerial Issues*, *22*(1), 10-34.

Ormrod, J. E. (2004). *Human learning* (4th ed.). Upper Saddle River, NJ: Pearson Education.

Overtoom, C., & ERIC Clearinghouse on Adult, C. O. (2000a). Employability skills: An update. ERIC Digest No. 220. Retrieved from http://files.eric.ed.gov/fulltext/ED445236.pdf

Park, H. & Hill, R. B. (2016 in press). Psychometric properties of the Employability Skills Assessment as a measure of work ethic. *Career and Technical Education Research.*

Park, H. J. (Writer), &. Jang, M. H (Host). (2015a). A leading group for Korean industries: Baby Boomers in South Korea [Radio documentary series Episode 10]. In K. H. Yoo (Executive producer), *Independence 70 years: Stories of South Korea*. Seoul, South Korea: KBS World Radio. Retrieved from http://world.kbs.co.kr/korean/program/program_kpanorama_detail.htm?No=10036882

Park, H. J. (Writer), &. Jang, M. H (Host). (2015b). Korean young adults who went to Germany [Radio documentary series Episode 11]. In K. H. Yoo (Executive producer), *Independence 70 years: Stories of South Korea*. Seoul, South Korea: KBS World Radio. Retrieved from http://world.kbs.co.kr/korean/program/program_kpanorama_detail.htm?No=10037179

Park, J. H. (2006). Measurement and validation of Seng's learning organization model in Korean vocational high schools. (Doctoral dissertation, The University of Georgia). Retrieved from http://dbs.galib.uga.edu/cgi-bin/getd.cgi?userid=galileo&action=search

Park, H. & Hill, R. B. (2016). Psychometric properties of the employability skills assessment as a measure of work ethic. Manuscript submitted for publication.

Park, S., & Shim, K (2010). 베이비 붐 세대의 현황 및 은퇴효과 분석 (The first half year report: Study on Baby Boomers' situation and effects of their retirement in South Korea). Seoul, Korea, Korea Statistical Research Institute.

Parker, B. (February 2015). South Korea's Millennials downbeat abut payoff of education, future. Pew Research Center [Online] Retrieved from http://www.pewresearch.org/fact-tank/2015/02/25/south-koreas-millennials-downbeat-about-payoff-of-education-future/

Pascarella, P. (1984). *The new achievers: creating a modern work ethic*. New York, NY: Free Press.

Petty, G. C. (1992). Development of the occupational work ethic inventory. Unpublished manuscript, The University of Tennessee at Knoxville.

Petty, G. C. (1993). Development of the occupational work ethic inventory. Unpublished manuscript, The University of Tennessee at Knoxville.

Petty, G. C., & Hill, R. B. (1994). Are women and men different? A study of the occupational work ethic. *Journal of Vocational Education Research, 19*(1), 71-89.

Petty. G. C., & Hill, R. B. (2005). Work ethic characteristics: Perceived work ethics of supervisors and workers. *Journal of Industrial Teacher Education, 42*(2), 5-20.

Phillips, P., & Stawarski, C. (2008). *Data collection: Planning for and collecting all types of data*. San Francisco, CA: Pfeiffer.

Powell, G. N., & Graves, L. M. (2003). *Women and men in management* (3rd ed.). Thousand Oaks, CA: Sage.

Prensky, M. (2001). Digital Natives, Digital Immigrants Part 1. On The Horizon, 9(5), 1. doi:10.1108/10748120110424816

Ray, J. J. (1982). The Protestant ethic in Australia. *Journal of Social Psychology*, *116*, 127-138. doi:10.1080/00224545.1982.9924402

Ray, J.& Najman, J. (1985). The generalizability of deferment of gratification. *The Journal of Social Psychology, 126*(1), 117-119.

Reise, S. P., Waller, N. G., & Comrey, A. L. (2000). Factor analysis and scale revision. *Psychological Assessment, 12*(3), 287-297. doi:10.1037/1040-3590.12.3.287

Rim, C. (2013). Korea's age boom: How South Korea is addressing the reality of low fertility and a rapidly aging society. *AARP International The Journal* [Online] Retrieved from http://journal.aarpinternational.org/file%20library/journals/aarpthejournal_2013.pdf

Robinson, J. P. (2000). What are employability skills? *The workplace*, *1*(3), 1-3. Retrieved from http://www.fremont.k12.ca.us/cms/lib04/CA01000848/Centricity/Domain/189/employability-skills.pdf

Rojewski, J. W. (2004). The role of globalization and context. In J. W. Rojewski (Ed.), *International perspectives on workforce education and development,* (pp.1-16). Greenwich, CT: Information Age.

Rojewski, J. W. (2014, January 20). Notes for a lecture on research design and methods in workforce education. WFED 9100 course resources. Department of Career and Information Studies, University of Georgia, Athens, GA, the U.S.A.

Rojewski, J. W., & Hill, R. B. (2014). Positioning research and practice in career and technical education: A framework for college and career preparation in the 21st Century. *Career and Technical Education Research, 39*(2), 137-150. doi:10.5328/cter39.2.137

Rose, M, (1985). Reworking the work ethic: Economic values and socio-cultural politics. London: Schocken.

Rossi, J. (2006). Twenty-some things in training. *Training and Development*, 51-53.

Routledge, R. (2014a). Central limit theorem. *Encyclopedia Britannica*.

Routledge, R. (2014b). Law of large numbers. *Encyclopedia Britannica*.

Salt, B., Cervero, R. M., & Herod, A. (2000). Workers' education and neoglobalization: An adequate response to transnational corporations? *Adult Education Quarterly*, *51*(1), 9.

Schenker, J. D., & Rumrill, P. D. J. (2004). Causal-comparative research designs. *Journal of Vocational Rehabilitation*, *21*(3), 117-121.

Seltman, H. (2013). *Experimental design and analysis* (e-book) Retrieved from http://www.stat.cmu.edu/_hseltman/309/Book/Book.pdf

Seth, M. J. (2011). *A history of Korea: from antiquity to the present*. Lanham: Rowman and Littlefield.

Shin, A. Y. (March 2016). 어머니의 어머니 노릇 (Mother's roles of a mother). [Web magazine]. *중년에 쓰는 에세이 15 (Essays that are written in the middle ages 15), 64*. Retrieved from http://www.mainage.kr/bbs/board.php?bo_table=news_column&wr_id=456

Shin, J. C., Kim, Y., Lim, H., Shim, B., & Choi, Y. (2015). The 'sandwich generation' in Korean academe: between traditional academic authority and meritocratic culture. *Studies in Higher Education, 40*(8), 1406-1422.

Spearman, C. (1904). General intelligence, objectively determined and measured. *The American Journal of Psychology*, *15*(2), 201-292. doi:10.2307/1412107

State of Nevada Department of Education. (2014). Employability skills for career readiness standards. Retrieved from http://cte-escr.org/

Steger, M. B. (2013). *Globalization: a very short introduction*. Manfred B. Steger. Oxford: Oxford University Press.

Stogdill, R. M. (1974). *Handbook of leadership: A survey of theory and research*. New York, NY: Free Press.

Strickland, O. L. (2003). Cultural considerations and issues in measurement. *Journal of Nursing Measurement*, *11*(1), 3-4. doi:10.1891/jnum.11.1.3.52064

Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics* (5th ed.). Boston, MA: Allyn and Bacon/Pearson Education.

Tang, T. L., & Tzeng, J. Y. (1992). Demographic correlates of the Protestant work ethic. *The Journal of Psychology*, *126*(2), 163-170. doi:10.1080/00223980.1992.10543351

The Holy Bible, New International Version. (1984). *Genesis*. Grand Rapids: Zondervan Publishing House.

Thurstone, L. L. (1935). *The vectors of the mind: multiple-factor analysis for the isolation of primary traits.* Chicago, MI: University of Chicago Press.

Thurstone, L. L. (1938). *Primary mental abilities*. Chicago, MI: University of Chicago Press.

Tinsley, H. E. A., & Tinsley, D. J. (1987). Uses of factor analysis in counseling psychology research. *Journal of Counseling Psychology, 34*(4), 414-424. doi:10.1037/0022-0167.34.4.414

Turner, G., & Mitchell, M. (2009). Xers evaluate education, occupation and financial wealth: A generational comparison of the United States and Korea. *Society for Marketing Advances Proceedings*, 123-126.

Twenge, J. M. (2010). A review of the empirical evidence on generational differences in work attitudes. *Journal of Business Psychology*, *25*, 201–210. doi:10.1007/s10869-010-9165-6

Twenge, J. M., & Campbell, S. M. (2008). Generational differences in psychological traits and their impact on the workplace. *Journal of Managerial Psychology*, *23*, 862–877. doi:10.1108/02683940810904367

Tydings, F. W. (2003). *A comparison of work ethic descriptors among technical college advisory committee members, instructors, and students.* (Doctoral dissertation, The University of Georgia). Retrieved from https://getd.libs.uga.edu/pdfs/tydings_flora_w_200305_edd.pdf

U.S. Department of Labor. (2014, December 19) Soft Skills: The Competitive Edge [Web log post] Retrieved from http://permanent.access.gpo.gov/gpo24770/softskills.htm

Van Prooijen, J., & Van der Kloot, W. (2001). Confirmatory analysis of exploratively obtained factor structures. *Educational and Psychological Measurement, 61*, 777–792. doi:10.1177/00131640121971518

Velicer, W. F. (1976). Determining the number of components from the matrix of partial correlations. *Psychometrika, 41*, 321-327.

Virginia's CTE resource center. (2014, December 10). *Introduction to leadership*. [Retrieved from http://www.cteresource.org/verso/courses/9091/introduction-to-leadership-tasklist

Wayne, F. (1989). An instrument to measure adherence to the Protestant work ethic and contemporary work values. *Journal of Business Ethics*, *8*, 793–804.

Weber, M. (2005). *The Protestant ethic and the spirit of capitalism*. New York, NY: Routledge. Retrieved from http://www.d.umn.edu/cla/faculty/jhamlin/1095/The%20Protestant%20Ethic%20and%20the%20Spirit%20of%20Capitalism.pdf . The first version was published in 1904 and 1905.

Wirth, R. J., & Edwards, M. C. (2007). Item factor analysis: Current approaches and future directions. *Psychological Methods*, *12*(1), 58-79. doi:10.1037/1082-989X.12.1.58

Wollack, S., Goodale, J., Wijting, J., & Smith, P. (1971). Development of the survey of work values. *Journal of Applied Psychology, 55*(4), 331-38

Wong, M., Gardiner, E., Lang, W., & Coulon, L. (2008). Generational differences in personality and motivation: Do they exist and what are the implications for the workplace? *Journal of Managerial Psychology*, *23*, 878–890. doi:10.1108/02683940810904376

Workplace Readiness Skills - Employability Skills for Career Readiness. (2014, December 13). Employability skills for career readiness [Web log post]. Retrieved from http://cte-escr.org/about/

Yancey, G. B. (2014). Self-efficacy. Salem Press *Encyclopedia of Health*, Retrieved from http://dbs.galib.uga.edu/cgi-bin/getd.cgi?userid=galileo&action=search&_cc=1

Yeh, Q., & Xu, X. (2010). The effect of Confucian work ethics on learning about science and technology Knowledge and morality. *Journal of Business Ethics*, *95*(1), 111-128. doi:10.1007/s10551-009-0352-1

Yu, H.C., & Miller, P. (2003). The generation gap and cultural influence – a Taiwan empirical investigation, *Cross Cultural Management*, *10*(3), 23-41.

Zacharias, A., Masterson, T., & Kim, K. (2014). The measurement of time and income poverty in Korea: The levy institute measure of time and income poverty Korea. *Employment Information Service (KEIS)* Retrieved from http://www.levyinstitute.org/pubs/rpr_8_14.pdf

Zoski, K. W., & Jurs, S. (1996). An objective counterpart to the visual scree test for factor analysis: The standard error scree. *Educational and Psychological Measurement*, *56*(3), 443. doi:10.1177/0013164496056003006

Zwick, W. R., & Velicer, W. F. (1982). Factors influencing four rules for determining the number of components to retain. *Multivariate Behavioral Research*, *17*(2), 253. doi:10.1207/s15327906mbr1702_5

Zwick, W. R., & Velicer, W. F. (1986). Comparison of five rules for determining the number of components to retain. *Psychological Bulletin*, *99*(3), 432-442. doi:10.1037/0033-2909.99.3.432

APPENDICES

Appendix A

CORRELATION MATRIX FOR THE FACTOR ANAYSIS

CORRELATION MATRIX FOR THE FACTOR ANALYSIS

Correlation	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20	Q21	Q22	Q23
Q1	1.000																						
Q2	.210*	1.000																					
Q3	.153*	.010*	1.000																				
Q4	.407*	.255*	.267*	1.000																			
Q5	.271*	.251*	.018*	.285*	1.000																		
Q6	.274*	.230*	-.068*	.201*	.444*	1.000																	
Q7	.289*	.324*	.102*	.205*	.312*	.252*	1.000																
Q8	.303*	.215*	.116*	.276*	.390*	.402*	.405*	1.000															
Q9	.252*	.174*	.077*	.248*	.300*	.348*	.115*	.489*	1.000														
Q10	.248*	.310*	.025*	.227*	.530*	.432*	.274*	.334*	.352*	1.000													
Q11	.297*	.139*	.152*	.281*	.373*	.336*	.157*	.423*	.422*	.359*	1.000												
Q12	.235*	.144*	.057*	.221*	.271*	.185*	.165*	.382*	.398*	.442*	.476*	1.000											
Q13	.355*	.230*	.131*	.267*	.458*	.306*	.424*	.310*	.411*	.250*	.319*	.382*	1.000										
Q14	.318*	.259*	.045*	.280*	.404*	.426*	.257*	.394*	.470*	.238*	.554*	.386*	.360*	1.000									
Q15	.100*	.043*	.129*	.134*	.116*	.035*	.007*	.412*	.378*	.276*	.439*	.410*	.282*	.480*	1.000								
Q16	.303*	.215*	.116*	.276*	.390*	.402*	.405*	.106*	.040*	.073*	.073*	.106*	.060*	.114*	.031*	1.000							
Q17	.289*	.142*	.130*	.283*	.331*	.295*	.178*	.378*	.402*	.287*	.363*	.468*	.268*	.319*	.323*	.081*	1.000						
Q18	.267*	.309*	.196*	.440*	.267*	.311*	.227*	.495*	.376*	.295*	.354*	.386*	.255*	.408*	.449*	.118*	.398*	1.000					
Q19	.157*	.065*	.239*	.159*	.220*	.199*	.078*	.214*	.119*	.228*	.215*	.180*	.106*	.215*	.133*	.278*	.239*	.219*	1.000				
Q20	.116*	.099*	.107*	.153*	.124*	.164*	.093*	.209*	.198*	.185*	.214*	.337*	.392*	.149*	.257*	-.081*	.252*	.206*	.001*	1.000			
Q21	.382*	.281*	.181*	.465*	.256*	.333*	.228*	.381*	.315*	.325*	.350*	.406*	.253*	.385*	.446*	.183*	.329*	.492*	.211*	.237*	1.000		
Q22	.204*	.173*	.166*	.250*	.287*	.285*	.175*	.413*	.313*	.191*	.232*	.319*	.137*	.304*	.408*	.136*	.284*	.437*	.125*	.186*	.477*	1.000	
Q23	.323*	.277*	.117*	.255*	.403*	.254*	.444*	.318*	.406*	.198*	.437*	.344*	.195*	.674*	.399*	.126*	.307*	.369*	.164*	.089*	.386*	.386*	1.000

Note. The asterisk (*) indicates that the $p < .05$.

Appendix B

Employability Skills Assessment (ESA)

Employability Skills Assessment

Directions:
For each item listed below, CIRCLE THE NUMBER that most accurately describes your actions and attitudes for that question. There are seven possible choices for each item:

Never	Almost Never	Seldom	Sometimes	Usually	Almost Always	Always
1	2	3	4	5	6	7

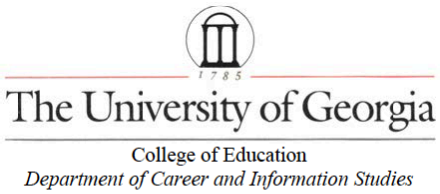
THERE ARE NO RIGHT OR WRONG ANSWERS. There also is no time limit, but you should work as rapidly as possible. Please respond to every item on the list.

	Item	Never						Always
1.	Are you a happy person?	1	2	3	4	5	6	7
2.	Are you eager to be successful?	1	2	3	4	5	6	7
3.	Do you waste time?	1	2	3	4	5	6	7
4.	When you say you will do something, do you do it?	1	2	3	4	5	6	7
5.	Are you thoughtful of others?	1	2	3	4	5	6	7
6.	Are you aware of what is going on around you?	1	2	3	4	5	6	7
7.	Do you like to be with other people?	1	2	3	4	5	6	7
8.	Are you committed to doing good work?	1	2	3	4	5	6	7
9.	Do you work well with others?	1	2	3	4	5	6	7
10.	Do you take your time and avoid making careless mistakes?	1	2	3	4	5	6	7
11.	Do you have good manners?	1	2	3	4	5	6	7
12.	Do you do things right the first time?	1	2	3	4	5	6	7
13.	Are you good at following instructions?	1	2	3	4	5	6	7
14.	Do people like you?	1	2	3	4	5	6	7
15.	Do you look for ways to help other people?	1	2	3	4	5	6	7
16.	Is it difficult for you to find solutions to problems on your own?	1	2	3	4	5	6	7
17.	Do you tell the truth?	1	2	3	4	5	6	7
18.	Are you eager to complete the work that you have to do?	1	2	3	4	5	6	7
19.	Do you ever disappoint people?	1	2	3	4	5	6	7
20.	Do you follow the rules even if you disagree with them?	1	2	3	4	5	6	7
21.	Do you accomplish your goals?	1	2	3	4	5	6	7
22.	Do you do more than is required or expected of you?	1	2	3	4	5	6	7
23.	Do other people enjoy being with you?	1	2	3	4	5	6	7

Note. Scoring: Interpersonal Skills: Items of 1, 5, 7, 9, 11, 14, 15, & 23 (range from 8 to 56). Initiative: Items of 2, 3, 6, 8, 12, 16, 18, 21, & 22 (range from 9 to 63). Being Dependability: Items of 4, 10, 13, 17, 19, & 20 (range from 6 to 42). Reverse the scores of the items of 3, 16, and 19 before computing: 1 on instrument = 7; 2 on instrument = 6; 3 on instrument = 5; 4 on instrument = 4; 5 on instrument = 3; 6 on instrument = 2; and 7 on instrument =1.

Appendix C

PERMISSION LETTER FOR USING THE ESA



January 26, 2015

HwaChoon Park
Department of Career & Information Studies
The University of Georgia
Athens, GA 30602

Dear HwaChoon:

This letter is to substantiate that you have my permission to use the Employability Skills Assessment (ESA) in your research as a doctoral student here at the University of Georgia. I understand your work will involve translating the instrument into Korean, completing a factor analysis, and conducting other analyses based on data collected using the instrument.

I wish you well in your studies and look forward to seeing the outcomes.

Cordially,

Roger B. Hill, Ph.D.
Professor

Appendix D

Korean Employability Skills Assessment (KESA)

한국직업능력검사

설문 응답 방법

아래에 제시된 각 항목마다 당신의 행동과 태도를 가장 정확하게 설명하는 번호를 선택하여 동그라미를 하십시오.

전혀 아니다	거의 항상 그렇지 않다	좀처럼 아니다	가끔 그렇다	평소에 그렇다	거의 항상 그렇다	항상 그렇다
1	2	3	4	5	6	7

설문의 응답에는 정답이나 오답이 없습니다. 설문에 응답하는 데 제한된 시간은 없습니다만, 가능한 빨리 응답하시기 바랍니다. 설문지의 모든 항목에 응답해주십시오.

	문항	전혀 아니다	거의 항상 그렇지 않다	좀처럼 아니다	가끔 그렇다	평소에 그렇다	거의 항상 그렇다	항상 그렇다
1.	당신은 행복한 사람입니까?	1	2	3	4	5	6	7
2.	당신은 성공하기를 간절히 열망하십니까?	1	2	3	4	5	6	7
3.	당신은 시간을 낭비합니까?	1	2	3	4	5	6	7
4.	당신이 무엇인가를 할 것이다라고 말할 때, 그것을 실행 합니까?	1	2	3	4	5	6	7
5.	당신은 다른 사람들에 대해 사려깊으십니까?	1	2	3	4	5	6	7
6.	당신은 주변에 무슨 일이 일어나고 있는 일을 인지하십니까?	1	2	3	4	5	6	7
7.	당신은 다른 사람들과 같이 있는 것을 좋아합니까?	1	2	3	4	5	6	7
8.	당신은 일을 잘 하려는 데 헌신적입니까?	1	2	3	4	5	6	7
9.	당신은 다른 사람들과 같이 일을 잘 합니까?	1	2	3	4	5	6	7
10.	당신은 여유를 가지고 부주의한 실수를 만드는 것을 피합니까?	1	2	3	4	5	6	7
11.	당신은 좋은 예절을 가지고 있습니까?	1	2	3	4	5	6	7
12.	당신은 처음부터 일을 올바르게 합니까?	1	2	3	4	5	6	7
13.	당신은 지시사항을 따르는 것을 잘 합니까?	1	2	3	4	5	6	7
14.	사람들이 당신을 좋아합니까?	1	2	3	4	5	6	7

	문항	전혀 아니다	거의 항상 그렇지 않다	좀처럼 아니다	가끔 그렇다	평소에 그렇다	거의 항상 그렇다	항상 그렇다
15.	당신은 다른 사람들을 돕기 위한 방법들을 찾습니까?	1	2	3	4	5	6	7
16.	당신은 문제들에 대한 해결책들을 당신 스스로 찾는 것이 어렵습니까?	1	2	3	4	5	6	7
17.	당신은 진실을 말합니까?	1	2	3	4	5	6	7
18.	당신은 당신이 해야 하는 일을 완성하려고 간절히 열망합니까?	1	2	3	4	5	6	7
19.	당신은 평소에 다른 사람들을 실망시킵니까?	1	2	3	4	5	6	7
20.	당신은 당신이 규칙에 동의하지 않을 지라도 그 규칙들을 따릅니까?	1	2	3	4	5	6	7
21.	당신은 당신의 목적들을 성취합니까?	1	2	3	4	5	6	7
22.	당신은 요구되는 것 또는 기대되는 것 보다 일을 더 합니까?	1	2	3	4	5	6	7
23.	다른 사람들이 당신과 함께 있는 것을 즐거워합니까?	1	2	3	4	5	6	7

참고. 점수계산방법: 진취성에는 8 개 문항(21, 18, 22, 4, 15, 8, 1, 2)이 포함되며, 점수는 최소 8 점부터 최대 35 점까지이다. 대인관계기술에는 4 개 문항(14, 23, 7, 9)이 포함되며 점수는 최소 4 점부터 최대 28 점까지이다. 신뢰성에는 4 개문항 (12, 13, 17, 20)이 포함되며 점수는 최소 4 점부터 최대 28 점까지이다. 사려깊음에는 4 개문항 (5, 6, 10, 11) 이 포함되며점수는 최소 4 점부터 최대 28 점까지이다. 마지막으로 부정정문항에는 3, 16, 19 가 포함되며 점수변환이 필요하다 (예. 1 = 7, 2 = 6, 3 = 4, 4 = 4, 5 = 3, 6 = 2, 7 = 1).

Appendix E

CONSENT COVER LETTER FOR DATA COLLECTION

(English Version)

CONSENT COVER LETTER
(English Version)

July 2015

Dear Participant in South Korea:

I am a graduate student under the direction of Dr. Roger B. Hill in the program of Workforce Education in the department of Career and Information Studies in College of Education at the University of Georgia. I invite you to participate in a research study *entitled The Korean Employability Skills Assessment as a Measure of South Korean Work Ethic*. The purpose of this study is to provide a Korean Employability Skills Assessment (KESA) by translating the Employability Skills Assessment (ESA) (Hill, 1995) into Korean testing its validity and reliability and then to use this instrument to compare the work ethic of South Korean Millennials and Baby Boomers and men and women in the South Korean workforce.

Participants should be 18 years of age or older South Korean adults for this study.
Your participation will involve reading a consent letter and then clicking an online link that will lead you to the KESA instrument. The online survey questionnaire includes demographic questions such as your age, gender, geographic location you live, and your occupation at the beginning. After you answer demographic questions, you will diagnose your own work ethic by answering 23 items of the Korean Employability Skills Assessment. About 8-10 minutes will be expected to be taken to finish this online survey.

Your involvement in the research study is completely voluntary, and you may choose not to participate or to stop at any time without penalty or loss of benefits to which you are otherwise entitled. No name is required and no organizations or individuals will be identified in any data analysis or report of this study. The results of the research study may be published, but your name or any identifying information of organizations or individuals will not be used. In fact, the published results will be presented in summary form only.

As a participant, you will have an opportunity to self-diagnose your work ethic as well as to obtain some knowledge about work ethic. The findings from this project may provide information on South Korean work ethic measured by the KESA work ethic instrument. There are no known risks or discomforts associated with this research, but Internet communications are not insecure and there is a limit to the confidentiality that can be guaranteed due to the technology itself. However, once the materials are received by the researcher, standard confidentiality procedures will be employed.

If you have any questions about this research project, please feel free to call me or my advisor (Dr. Roger B. Hill) via the e-mail or phone number below. Questions or concerns about your rights as a research participant should be directed to The Chairperson, University of Georgia Institutional Review Board, 609 Boyd GSRC, Athens, Georgia 30602; telephone +1 + 706-542-3199; email address irb@uga.edu.

Thank you for your consideration! Please keep this letter for your records.

Sincerely,

HwaChoon Park

HwaChoon Park, e-mail: hppark72@uga.edu; Phone: 070-7123-3334, +1-706-224-1038
Dr. Roger B. Hill, e-mail: rbhill@uga.edu; Phone: +1-706-542-4100

Appendix F

CONSENT COVER LETTER FOR DATA COLLECTION

(Korean Version)

CONSENT COVER LETTER FOR DATA COLLECTION
(Korean Version)

직업윤리 측정도구의 한국어 번역본으로 규명한 한국의 직업윤리 및 규명된 직업윤리로 본 한국인의 성별, 고용여부, 및 베이비부머 세대와 뉴밀레니엄 세대간의 직업윤리 상황 비교 연구에 관한 설문지

안녕하십니까?
먼저 소중한 시간을 내어 주심에 깊은 감사를 드립니다.

저는 미국 조지아 대학교 대학원에서 Roger B. Hill 박사님의 지도하에 박사과정에 재학중인 학생입니다. 이 설문지는 미국에서 개발된 직업윤리 측정도구의 한국어 번역본 (명칭: 한국직업윤리검사)으로 한국의 직업윤리를 규명하고자 합니다. 또한, 규명된 한국의 직업윤리가 성별, 세대별 (베이비부머 세대와 뉴밀레니엄세대), 및 고용의 여부에 따라 어떻게 다른 지 알아보고자 합니다. 직업윤리에 관한 연구는 미국과 유럽 및 호주에서는 많이 진행되었고 이에 따라 다양한 직업윤리 측정도구들이 개발되어 사용되고 있으나, 한국을 비롯한 동양권에서는 타당한 측정도구가 많이 없습니다. 특히, 연령과 학력에 관계없이 누구나 쉽게 직업윤리를 측정할 수 있는 도구는 매우 부족한 현실입니다. 따라서, 이 연구를 통해서 규명되는 직업윤리 측정 도구는 앞으로 한국인의 직업윤리를 측정하는 도구로서 개인 뿐만 아니라, 직업윤리를 교육하고 훈련하는 교육기관 및 각 기업체에서 교육과정을 수립하는데 많은 도움을 줄 것으로 기대합니다.

본 논문 연구의 여러분의 참여는 자발적입니다. 또한, 본 연구는 연구의 목적상 18 세 이상 한국인 성인만이 참여할 수 있습니다. 혹시 설문에 응하시는 도중에 불편하시거나 응답을 원치 않으시면 도중에 언제든지 중단하실 수 있습니다. 이 설문지에는 개인의 성명을 묻는 문항은 전혀 없습니다. 작성해주신 사항은 오직 연구목적으로만 사용하며, 개인의 정보는 절대 주출되지 않습니다. 이 설문지는 응답하지 않는 문항이 하나라도 있으면, 그 설문지는 분석할 수 없으며 연구에 사용될 수가 없습니다. 따라서, 설문에 자발적으로 응답하실 때에는 **한 문항도 빠짐 없이 솔직하게 응답하여 주시기를 간곡히 부탁드립니다**. 여러분은 이 연구에 참여함으로서 직업윤리에 대한 지식을 얻을 수 있으며, 자신의 직업윤리를 되새겨 볼 수 있고, 또한, 바람직한 직업윤리를 준비하는 계기가 될 것입니다. 설문에 응답하는 시간은 약 8 분에서 10 분 입니다.

혹시라도 이 연구에 문의사항이 있으시면, 아래의 이메일이나 전화번호로 저나 지도교수에게 언제든지 문의해 주시기 바랍니다. 또는 응답자의 권리에 대한 문의 사항은 조지아대학요 IRB 위원장에게 연락을 주시면 됩니다. (University of Georgia Institutional Review Board, 609 Boyd GSRC, Athens, Georgia 30602; telephone (706) 542-3199; email address irb@uga.edu.). 여러분들의 설문응답 고려에 감사를 드립니다.

2015 년 7 월

미국 조지아대학교 교육대학 직업 과학 기술 연구 학과
박사과정: 박화춘
지도교수: Roger B. Hill, Ph.D.

[연구자 연락처]
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지도교수: Dr. Roger B. Hill, 이메일: rbhill@uga.edu; 전화:+1-706-542-4100

Appendix G

LIST OF NAMES OF INITIAL CONTACT PEOPLE

Expected occupational group	Contact people (Generation)	Title of the occupation of the contact person	# of emails sent	# of resp.
Professionals and various occupations	조*기(Cho, *-Ki) (GX)	Professor of a national university	130	73
K-12 teachers & students	이*경 (Lee, *Gyung) (GX, & ML)	A school teacher	30	12
Clerks & various occupations	경*원 (Kyung, *-Won) (GX)	A director of Word of Life Book Store branch	14	10
Clerks	유*아 (Yoo, *-A) (GX)	Director of marketing division of a telecom corporation	120	101
Clerks & sales people	이*복(Lee, *-Bok) (BB & GX	A director of a K- bank	10	6
Service workers	석*종 (Seok, *-Jong) (BB)	A senior pastor & a bus driver	10	4
Manager, elementary workers, & various occupations	김*운 (Kim, *-Woon) (BB, GX, & ML)	A senior pastor in a church in a local town	345	180
Sales people	박*섭 (Park, *-Sup) (BB)	A salesman in a company	6	4
Craftsmen & skilled workers	김*현(Kim, *Hyun)	Director of a company	20	11
Equipment, machine operating and assembling workers	송*호(Song, *-Ho)(BB, GX, & ML)	Senior pastor in a industrialized metropolitan city	40	31
Equipment, machine operating and assembling workers	박*순 (Park, *Soon) (GX, & ML)	Business owner of a photo shop	7	5
Equipment, machine operating and assembling workers	박*필 (Park, *-Pil) (GX, & ML)	A business owner of a construction company	10	7
Professionals	권*경(Gwon*Gyung)(ML)	A kindergarten teacher	20	15
Professionals	박*희(Gwon*Gyung)(ML)	A physical therapist	45	36
Various occupations	이*우 (Lee, * Woo)(BB, GX, & ML)	A housewife of a professor	30	25
Various	이*숙 (Lee, * Sook)(BB, GX, & ML)	A housewife, a deacon of a church	70	64

Military service people	조*규 (Jo, * Gyu) (ML)	A solider	3	1
Service workers	박*진 (Park, *Jin) (GX, & ML)	A counter	35	25
Various occupations	오*규 (Oh, * Gyu) (BB, GX, & ML)	A senior pastor in a church in Seoul	55	42
Managers, & various occupations	이* 연(Lee, * Yon)(BB, GX, & ML)	A senior pastor in a church in Seoul	436	211
Manager & various occupations	김*태 (Kim, *Tae) (BB, GX, & ML)	A senior pastor in a church in a provincial city	50	27
Various occupations	문* 기(Moon, *Ki)(BB, GX, & ML)	A senior pastor in a church in Seoul	35	20
Various occupations	박*춘(Park,*Choon)	A former teacher & graduate student	41	36
Total	23		1562	946
Response rate				60.56%

Note: # of resp. = Number of respondents. BB = Korean Baby Boomers (1955-193). GX = Korean Generation X (1964-1980). ML = Korean Millennials (1981-1999).