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Development and Validation of the Workplace Intergenerational Atmosphere Scale

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LIST OF ABBREVIATIONS

ADEA	Age Discrimination in Employment Act
ADF	Asymptotically Distribution-Free
AGFI	Adjusted Goodness of Fit Index
AM	Alternative Model
ANCOVA	Analysis of Covariance
ANOVA	Analysis of Variance
AWS	Age and Work Scale
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Index
CNA	Certified Nurse Assistant
CSEQ	College Student Experience Questionnaire
DWLS	Diagonal Weighted Least Squares
EEOC	Equal Employment Opportunity Commission
EFA	Exploratory Factor Analysis
FSA	Fraboni Scale of Ageism
GAF	General Age-Related Friendliness
GFI	Goodness of Fit Index
IC	Intergenerational Contact

IFI	Incremental Fit Index
JSS	Job Satisfaction Survey
LISREL	Linear Structural Relations
LOS	Lack of Stereotypes
ML	Maximum Likelihood
NFI	Normed Fit Index
NNFI	Non-Normed Fit Index
NTWLS	Normal Theory Weighted Least Squares
PA	Positive Affect
PCA	Principal Components Analysis
RMSEA	Root Mean Square Error of Approximation
RMSR	Root Mean Square Residual
S-B	Satorra-Bentler
St-O	Stereotypes about Older Workers
St-Y	Stereotypes about Younger Workers
WGI	Workplace Generational Inclusiveness
WIA	Workplace Intergenerational Atmosphere
WIA-R	Workplace Intergenerational Atmosphere – Revised
WIR	Workplace Intergenerational Retention
WLS	Weighted Least Squares
WLSMV	Weighted Least Squares Mean and Variance Adjusted

ABSTRACT

This dissertation details the development and validation of the Workplace Intergenerational Atmosphere (WIA) scale over two studies. Given the growing number of older adults in the American workforce and the possibility of four generations working side by side, the WIA scale was designed to measure attitudes and perceptions about workers of different ages in the workplace. In Study 1, using a sample of 200+ workers from a non-profit organization, 23 initial items were reduced to 18, including five subscales: Intergenerational Contact, Workplace Intergenerational Retention, Positive Affect, Workplace Generational Inclusiveness, and Lack of Stereotypes. The relationships between WIA scores and mentoring, perceptions of older workers, and job satisfaction were explored through traditional statistical techniques. In Study 2, using a sample of 500+ workers from a long-term healthcare organization, the WIA scale and its subscales were further refined, and its relationships with similar constructs were explored via structural equation modeling. Validation should be expanded to include more diverse samples, but results suggest that the WIA scale measures a unique concept and should be of use to organizations interested in improving the intergenerational dynamics of their workforce.

CHAPTER ONE

CHANGING DEMOGRAPHICS OF THE AMERICAN WORKFORCE

Described in terms like “age wave” (Dychtwald, 1990), “silver tsunami” (Social Security Administration, 2008), and “elder boom” (Terry, 2002), the impact of the ongoing and drastic increase in the number of adults over age 65 cannot be understated. The first members of the Baby Boomer (born between 1946 and 1964) generation are now in their 60’s. As that generation ages, the number of adults over age 65 (65+) in the U.S. will increase by 78 percent between 2010 and 2030, and double by the year 2040 (U.S. Census Bureau, 2007). Other age group populations in the U.S. are not increasing as quickly, and the proportion of Americans who are 65+ will increase from 13 percent in 2010 to 19.6 percent in 2030 (U.S. Census Bureau, 2007).

Demographers have been aware of this trend for decades, and have spoken of a healthcare, workforce, and Social Security crisis to occur in the 2010’s, with record numbers of Americans retiring and receiving Medicare. However, the assumption that Baby Boomers would retire between age 62 and 65 at a rate comparable to the generations immediately preceding them is not necessarily true (Pitt-Catsouphes & Hudson, 2007). The 65+ workforce

participation rate, 16.3 percent in 2007, is expected to increase through 2020, when the Bureau of Labor Statistics (BLS, 2008) projects it to be 21.5 percent, meaning that more than one-fifth of adults 65 or over will still be working. Raw numbers of 65+ workers in the U.S. will follow suit, going from 5.9 million in 2007 to 13.7 million in 2030 (BLS, 2008).

In 1950, 26.7 percent of 65+ Americans participated in the civilian noninstitutional labor force, but that figure lessened over the next forty years, decreasing to 11.8 percent in 1990 (Toossi, 2002). Several economic and social factors contributed to the decline in 65+ adult workforce participation in the late 1900's, including increasing numbers of young Baby Boomers (especially women) joining the labor pool, and the implementation of Medicare in the 1960's, which made it possible for older adults to stop working but still receive healthcare benefits at age 65. Early-retirement incentives, private pensions, and pre-65 healthcare benefits are less common nowadays than in the past fifty years, and with increases in average lifespan, older adults are forced to stretch their financial resources longer than ever before (Nyce, 2007). Many employers have shifted from defined benefit pensions to defined contribution plans, the financial nature of which results in people working about two years longer than those who have defined benefit pensions (Friedberg & Webb, 2005). Mermin, Johnson, and Murphy (2007) compared respondents' probabilities of working past age 65 in Health and Retirement Study samples from 1992 (Prewar generation) and 2004

(Baby Boomers), and found that Boomers were 23 percent more likely to work past 65 than their counterparts from 12 years earlier.

The growing number of workers who will be over 65 in the next ten years is reflected in the number of people ages 55 to 64 working now: in February of 2008, 64.8 percent of people in that age group were in the work force; up 1.5 percentage points from April of 2007 (Levitz, 2008). In 2008, affluent Americans, who might have retired earlier by choice in better economic times, faced the necessity of working past 65. Levitz (2008), in a *Wall Street Journal* article, cited advisers from several investment firms claiming that large numbers of older workers were delaying retirement due to stock-market and real estate troubles.

With older adults working longer and retiring later, the American workplace is growing older. Since the advent of modern labor laws, the workplace has typically consisted of a mix of adults between ages 18 and 65, but that mix is older now than in the past forty years. The median age of the American worker, 34.6 years in 1980, has been gradually increasing as the Baby Boomer “bulge” has aged, and is expected to peak in 2010 at 40.6, then slightly decrease as some Boomers begin to leave the workforce (Toossi, 2002). In 2007 people over age 55 constituted 17.4 percent of the American workforce, but that figure will rise to 22.7 percent by 2030, and for those 65 and over, the share will increase from 3.9 percent in 2007 to 7.9 percent in 2030 (BLS, 2008).

Given that many people born before Baby Boomers are still in the workforce, it’s possible that at many workplaces in the U.S., there are now four

generations of adults working together: Traditionalists (born prior to 1945), Baby Boomers (1946-1964), Generation X (1965-1980), and Generation Y (after 1980). With multiple perspectives, shared experiences, ways of communicating, and worldviews all co-existing in the same environment, people may resort to stereotyping as a way to characterize their co-workers. While stereotypes based on gender, race, ethnicity, or sexual orientation tend to get the most attention, and thusly are attempted to be countered the most, age-based stereotyping – ageism – and the prejudice and discrimination that come with it, is an issue that needs to be addressed in the work environment and society at large. Along with racism and sexism, it is the third crucial “ism” of our society (Palmore, 1999).

CHAPTER TWO

AGEISM IN THE WORKPLACE

The concept of ageism has been present in academic literature since the 1950's. In describing American culture, Lerner (1957) writes "It is natural for the culture to treat the old like the fag end of what was once good material… The most flattering thing you can say to an older American is that he 'doesn't look his age' and doesn't 'act his age'- as if it were the most damning thing in the world to look old…" Butler (1969) introduced the term *ageism* as another form of bigotry, like sexism or racism, and defined it further in 1975 as "a process of systematic stereotyping of and discrimination against people because they are old..." Palmore (1972) differentiated it from *gerontophobia*, the fear of growing old or a hatred of old people, and in 1999 expanded the definition to include more than just negative attitudes toward older adults: "ageism is prejudice or discrimination against or in favor of an age group" (p. 4).

Ageism fits the traditional social psychological tripartite model of attitudes (Eagly & Chaiken, 1998), by having three components: affect (prejudice), behavior (discrimination), and cognition (stereotyping). Many of the same processes active in sexism and racism apply to ageism as well, but ageism differs from the other "isms" because it potentially impacts everyone. Racism,

and to a lesser extent, sexism, are prejudices that large portions of society do not have to experience first-hand, yet with ageism, the in-group (younger persons) will eventually become the out-group (older persons), if they are fortunate enough to achieve a typical life expectancy (Nelson, 2002). In contrast to racism, ageism usually has a positive component to it: older adults are often seen as "loveable," "nurturing," or to be pitied, rather than disliked (Cuddy & Fiske, 2002). But, as with other perceived out-groups, if that group is viewed highly on one dimension, i.e. warmth (in the case of older adults) it means the group is viewed negatively on another dimension, such as competence (Fiske, Cuddy, Glick, & Xu, 2002).

Researchers have identified four types of ageism: personal, institutional, intentional, and unintentional (Anti-Ageism Task Force, 2006). Personal ageism is the beliefs, attitudes, ideas, and practices that an individual exhibits against persons or groups based on age. Institutional ageism refers to higher-level age-based discrimination against individuals or groups, such as missions, rules, and practices. Intentional ageism occurs when a person or organization holds ideas, rules, attitudes, or practices against older persons or groups because of age-related biases. Unintentional ageism, similarly to implicit or ambivalent racism, happens when ideas, rules, attitudes, or practices are carried out without the perpetrator knowing that age bias is occuring.

In the workplace, unlike sexism and racism, which, while certainly still present, are generally thought of as undesirable evils, ageism is a prejudice that

garners less attention, and in some cases even is condoned through official policies. Officially, the Age Discrimination in Employment Act (ADEA) prohibits age-based discrimination in the workplace in the U.S., but it allows for mandatory retirement for workers responsible for public safety (e.g., air traffic controllers, fire fighters, law enforcement officials) and well-pensioned executives. The ADEA lacks strength in comparison to laws ensuring freedom from discrimination based on race, sex, national origin, religion, or disability, which are all thought of as fundamental civil rights (Dennis & Thomas, 2007). Punitive and compensatory damages are allowed under both Title VII of the Civil Rights Act and the American with Disabilities Act of 1990, but neither form of damages is granted by the ADEA (Anti-Ageism Task Force, 2006). Since its passage in 1967, the ADEA has resulted in hundreds of thousands of cases filed with the Equal Employment Opportunity Commission (EEOC), but most are dismissed. In 2007, the EEOC received 19,103 complaints, but only 3.9 percent were found to have reasonable cause, and only 1.2 percent were resolved with conciliations (U.S. Equal Employment Opportunity Commission, 2008). $66.8 million in benefits was distributed in cases resolved through the EEOC without litigation, but as the Anti-Ageism Taskforce (2006) argues, these funds were intended to replace lost wages on the part of the wronged parties, and were not truly beneficial.

The costs of ageism to society include more, though, than just the millions of dollars the EEOC forces employers to pay out. When a deserving worker is looked over for a promotion because of her or his age and subsequently leaves

the organization, institutional knowledge, along with that person's skills and experiences, leaves as well. When a younger job candidate is hired instead of an older and equally qualified one, that organization faces an opportunity cost. In a real-life comparison of younger versus older job applicants, Bendrick, Brown, and Wall (1999) showed that an older applicant with the same credentials as a younger applicant received less positive evaluations from employers 41 percent of the time. This research was a confirmation of several earlier simulated hiring or interviewing experiments (Britton & Thomas, 1973; Rosen & Jerdee, 1976; Haefner, 1977; Avolio & Barrett, 1987) showing that older candidates are less likely to be hired or promoted than equally qualified younger candidates.

Besides the loss of employment or career advancement, ageism has detrimental nonmonetary effects to older adults themselves. When people use patronizing or demeaning language, or speak overly loudly and slowly in communicating with older adults, it can result in less self-esteem and self-efficacy on the part of the older person receiving that communication, thus potentially reinforcing whatever stereotypes the speaker had in the first place (Ryan, Hamilton, & See, 1994; Harwood, Williams, & Williams, 1998).

Levy and colleagues have found that older adults who encounter negative stereotypes of aging over time experience adverse psychological and physiological changes, including worsened cognitive performance, self-efficacy, handwriting, will-to-live, hearing, and cardiovascular stress responses (Levy, 1996; Levy, Ashman, & Dror, 1999; Levy, 2000; Levy, Slade, Kunkel, & Kasl,

2002; Levy, 2003; Levy, Slade, & Gill, 2006). Here, ageism shows its similarity to other prejudices, such as racism and sexism, through the concept of stereotype threat (Steele & Aronson, 1995): when a target group is made aware of stereotypes about themselves, they are threatened by the chance that they will bear out those stereotypes, and their intellectual performance suffers as a result, often matching negative stereotypes in the process. Hess et al. (2003) confirmed Levy's findings and the presence of stereotype threat in ageism, by showing that projecting negative stereotypes on an older person leads to decreased memory performance.

In light of the increasing numbers of older adults in the workforce, and the potential for multiple generations of workers to be interacting with each other on a daily basis, it is important to try to lessen the presence and impact of ageist attitudes in the workplace. Doing so will benefit the workers themselves, the employer or organization, and society in general.

A first step toward that goal is to determine the extent of such attitudes. National data about ADEA settlements provide a very broad financial estimate of ageism across the country, and experiments show how it affects individuals, but if an individual organization wishes to try to ameliorate ageism in its immediate environment, attention should be given to intergenerational dynamics within that organization or workplace. After assessing the degree to which staff hold different ideas and assumptions about co-workers of different ages, an organization can implement programs aimed at reducing ageism and potentially

improving morale and job satisfaction in its employees. While the literature on measuring ageism in general is substantial (but not as pervasive as measurements of sexism or racism), there is a scarcity of work devoted to assessing intergenerational attitudes in a given workplace, and especially the role of communication in workplace ageism (McCann & Giles, 2002). The development and validation of a tool to measure workplace intergenerational attitudes and atmosphere is the goal of the current study. This tool's measurement validity will be assessed according to Cronbach and Meehl's (1955) "nomological net" theory and its elaborations by Loevinger (1957), Clark and Watson (1995), and Bryant (2000).

CHAPTER THREE

MEASUREMENT VALIDITY

Construct validity, originally conceived as the degree to which an instrument measures what it is proposed to measure (Cronbach & Meehl, 1955), has also been thought of as one of three components of the broader term *measurement validity*, along with *content validity* and *criterion validity* (Bryant, 2000), with measurement validity assuming the earlier definition of construct validity.

Content Validity

Content validity refers to an instrument's ability to span the relevent aspects of a given behavioral or conceptual domain it is purported to assess (Bryant, 2000). It is a measure of an instrument's thoroughness and breadth. In the current research, to have an instrument with adequate content validity, the instrument would need to contain items assessing essential components of a workplace's intergenerational atmosphere.

Multivariate statistical strategies such as principal components analysis (PCA), exploratory factor analysis (EFA), and confirmatory factor analysis (CFA) have taken the place of more subjective measures of content validity, such as the

quantifying of experts' impressions of whether a scale covers enough of a domain. Through PCA or EFA, researchers can identify a small set of variables (also known as principal components or factors) that account for all or most of the total variance in a scale (Bryant & Yarnold, 1995). With CFA, researchers can further test the *structural validity* of a scale: a specific type of content validity that shows whether an instrument's theorized components actually reflect the factorial structures that emerge in people's responses (Bryant, King, & Smart, 2007). In Study 1 of the current research, EFA is utilized to establish subscales of the proposed instrument, and in Study 2, these subscales are refined via CFA.

Criterion Validity

Criterion validity is the degree to which an instrument predicts a well-accepted and relevant indicator (the criterion measure) of the concept under examination (Bryant, 2000). In the current research, to have an instrument with sufficient criterion validity, scores on the instrument should be able to predict something indicative of employees' intergenerational attitudes within a workplace.

Three main types of criterion validity checks are available to researchers, depending on the times when they collect data on the test instrument and criterion measure (Bryant, 2000). If scores are obtained on the test instrument first, and then later on the criterion, it is known as *predictive validity*. If scores on the test instrument and criterion are obtained at the same time, *concurrent validity* can be tested. If scores on a criterion are obtained first, and then

researchers gain information about something that has occurred earlier in respondents' lives (related to the test instrument), it is known as *retrospective validity*. Generally predictive validity is considered the strongest type of criterion validity, followed by concurrent and retrospective, but concurrent is the most popular type because it allows the researcher to collect all data at the same time (Bryant, King, & Smart, 2007). In both Study 1 and Study 2 of the current research, criterion groups are established. Doing so allows concurrent validity to be tested by ascertaining if scores on the proposed instrument can distinguish between different groups of respondents in an expected pattern.

Construct Validity

Construct validity can be thought of as "the degree of confidence one can have in labeling measurements in theory-relevant terms" (Bryant, King, & Smart, 2007, p. 62). In the current research, establishing construct validity means that the proposed instrument measures concepts related to intergenerational attitudes in the workplace and not something else.

A key ingredient of construct validity is adequate *preoperational explication* (Bryant, 2000). Preoperational explication (Cook & Campbell, 1979) involves elaborating on the construct of interest before developing operational definitions and variables, in order to determine what exactly the construct means and what it entails. Once a construct is operationally defined and data are gathered, *convergent and discriminant validities* need to be assessed. Convergent validity is the commonality an instrument has with another measure

of the same concept; discriminant validity is where the instrument diverges from measures of different constructs, but still related to the concept at hand. Convergent and discriminant validities are typically measured through correlation coefficients, and a researcher hopes to find that scores on her or his instrument are more highly correlated with measures of the same construct (convergent) than with measures of different constructs (discriminant), but this “eyeballing” method is suspect if reliabilities are different across measures (Bryant, King, & Smart, 2007). In Study 1 of the current research, correlations between the proposed instrument and measures of other constructs are visually inspected. In Study 2, a more precise multivariate approach is utilized.

CHAPTER 4

STUDY 1 – INTRODUCTION

Introduction

To make the proposed scale viable in the context of a multigenerational workforce, and not just a measure of prejudice against older generations, it should attempt to assess the degree of various attitudes across generations, including younger ones. This conceptualization does not fully match with early definitions of ageism as negative attitudes toward older adults (see Butler, 1969), but rather it fits Palmore's more recent broader definition of ageism as favoritism toward or prejudice against *any* age group. The proposed "Workplace Intergenerational Atmosphere" (WIA) scale is intended to measure age-based attitudes in the workplace, following the standard affective-behavioral-cognitive construction (Eagly & Chaiken, 1998) of attitudes, and the positivity of the workplace atmosphere toward workers of different ages, assessed through inclusiveness and friendliness. The rationale and content for the WIA's five proposed subscales (Lack of Stereotypes, Positive Affect, Intergenerational Contact, Workplace Generational Inclusiveness, and General Age-Related Friendliness) are explained below.

Item Pool Conceptualization

Lack of Stereotypes & Positive Affect Subscales. Currently, the most widely used measure of ageism is the Fraboni Scale of Ageism (FSA; Fraboni, Saltstone, & Hughes, 1990). Fraboni and colleagues demonstrated its validity and reliability and offered an initial three-factor structure, which has since been refined by Rupp et al (Rupp, Vodanovich, & Crede, 2005). The scale involves both cognitive and affective components of ageism, and has been used in many studies measuring age bias, involving other variables such as gender (Kalavar, 2001), aging awareness training (Stuart-Hamilton & Mahoney, 2003), age (Rupp et al., 2005), causal attributions (Rupp, Vodanovich, & Crede, 2006), oppressive belief systems (Aosved & Long, 2006) and culture (Bodner & Lazar, 2008). Because of its popularity in the field as a reliable and valid measure of ageism, modified items from the FSA were used as the basis for the Lack of Stereotypes and Positive Affect subscales of the WIA.

A multidisciplinary team of experts in aging and workforce development, including a sociologist, social psychologist, organizational anthropologist, and senior human resources professional generated all items in the WIA. They examined the FSA, and chose six items that could be modified to fit the purposes of the WIA. The table below shows the original FSA item and the new WIA item based on it. Since the FSA was written to measure biases against older adults, and the WIA is meant to examine attitudes among and about different age groups in general, phrasing in the FSA questions referring to “old people” was

changed to “co-workers outside my generation.” The first three WIA items make up the Lack of Stereotypes (LOS) subscale, which measures cognitive components of intergenerational attitudes. The asterisks after each item denote that the items are reverse-scored. The last three items comprise the Positive Affect (PA) subscale. Respondents are asked to indicate their agreement with each item on a 4-point (“Strongly Disagree” to “Strongly Agree”) scale.

FSA Item	WIA Item
Many old people are not interested in making new friends, preferring instead the circle of friends they have had for years.	Co-workers outside my generation are not interested in making friends outside their generation.*
Many old people are happiest when they are with people their own age.	Many co-workers outside my generation prefer being with people their own age.*
Old people complain more than other people do.	Co-workers outside my generation complain more than co-workers my age do.*
I don’t like it when old people try to make conversation with me.	I feel comfortable when co-workers outside my generation try to make

	conversation with me.
The company of most old people is quite enjoyable.	I enjoy interacting with co-workers of different generations.
Most old people are interesting, individualistic people.	My co-workers outside my generation are interesting and unique individuals.

Intergenerational Contact Subscale. Cognitive (stereotypes) and affective components of attitudes were accounted for with the aforementioned modified FSA items, but a new subscale was needed to measure behavioral aspects of attitudes toward other generations. The Intergenerational Contact (IC) subscale of the WIA was designed to assess behaviors through examining the degree of interaction that exists between co-workers of different generations.

Social psychologists have actively researched the contact hypothesis, the idea that cooperative contact under certain conditions reduces prejudice between groups, since its formulation by Allport in 1954. The moderating conditions necessary for contact to be effective in reducing prejudice include equal status between the groups, the sharing of common goals, cooperation between groups, and support from law, custom, or authorities (Allport, 1954; Dovidio, Gaertner, & Kawakami, 2003). Keeping those conditions in mind, the expert team generated six items to measure cooperative contact. Since the items measure behaviors, respondents are asked to indicate the frequency they had engaged in each

behavior on a 5-point scale (“Never,” “Rarely,” “Some,” “Often,” “Very Often”). The items comprising the WIA Intergenerational Contact subscale are:

1. How often do you have conversations with co-workers outside your generation?
2. How often do you have conversations with co-workers outside your generation relating to things other than work?
3. How often do you talk with co-workers outside your generation about your personal lives?
4. How often do you interact with co-workers outside your generation at company-sponsored events?
5. How often do you eat meals with co-workers outside your generation during the workday?
6. How often do you socialize after work with co-workers outside your generation?

Workplace Generational Inclusiveness Subscale. Another social psychological concept, the common ingroup identity model, has been shown to be effective in reducing prejudice. According to this model, when members of an in-group can recategorize out-group members into a larger category that encompasses themselves as well, a shared identity is created, leading to increased interdependence and less bias toward out-groups (Gaertner & Dovidio, 2000). Gaertner, Dovidio, and Bachman (2001) make the case that developing a common ingroup identity is crucial to successful corporate reorganization, and

Probst and Johns (2002) argue that creating a common ingroup identity model through cooperative contact may be the best approach to combating racism within a workplace.

Based on the idea that having a common identity at work across age groups would be a sign of a positive intergenerational atmosphere, the expert team generated eight items to measure perceived generational inclusiveness in the workplace. As with the Lack of Stereotypes and Positive Affect subscales, respondents were asked to indicate their agreement with each item in the Workplace Generational Inclusiveness (WGI) subscale on a 4-point ("Strongly Disagree" to "Strongly Agree" scale). The items comprising the WIA Workplace Generational Inclusiveness subscale were the following, with asterisks denoting reverse-scored items:

1. I believe that my work environment is a healthy one for people of all ages.
2. Workers of all ages are respected in my workplace.
3. There are myths and stereotypes about older workers at my workplace.*
4. I am able to communicate effectively with workers of different generations.
5. Working with co-workers of different ages enhances the quality of my work life.
6. My co-workers make older workers feel they should retire.*
7. I feel pressure from younger workers to step down.*
8. I feel pressure from older workers to step down.*

General Age-Related Friendliness Subscale. Every item of the WGI subscale focused on personal beliefs by utilizing the words “I” or “my,” making it specific to a respondent’s experience at her or his specific workplace. In order to also judge broader and global beliefs about older workers, the expert team generated three items that made up the General Age-Related Friendliness (GAF) subscale. Again, respondents were asked to indicate their agreement with each item on a 4-point (“Strongly Disagree” to “Strongly Agree” scale). The GAF subscale included the following items, with asterisks denoting reverse-scaling:

1. People work best when they work with others their same age*
2. An older-worker-friendly workplace is very important.
3. Every company needs older workers to balance the workplace.

To establish structural validity through item selection and psychometric evaluation, the WIA was administered to a pilot sample from a non-profit organization as part of a larger study concerning employee job satisfaction, aging in the workplace, retirement options, and caregiving issues.

After content validity was established via an examination of response distributions, item-total correlations, and mean interitem correlations, subscales were tested via exploratory factor analysis. Next, to insure that the WIA scale measures intergenerational attitudes and atmosphere, and not just ideas about older workers or one’s global satisfaction at a workplace, convergent and discriminant validities were tested by examining the correlation between WIA

scores and perceptions of older co-workers and job satisfaction scores, which were both expected to be moderate and positive. Concurrent validity was tested by seeing if WIA global or subscale scores could distinguish between people who do and do not mentor any co-workers. The hypothesis here was that employees who do mentor would score higher on the WIA and its subscales, since they would presumably be more open to working with people of different ages, and have experienced more cooperative contact with their differently aged co-workers.

CHAPTER FIVE

STUDY 1 – METHODS

Participants

256 staff members of a non-profit seniors housing and service organization participated in this study. The sample was largely (73%) female. Exact ages were not obtained, but participants were relatively evenly divided across age groups: twenty-three people were 25 or younger; twenty were between 26 and 30; eighteen 31 to 35; thirty-two 36 to 40; twenty-nine 41 to 45; thirty-four 46 to 50; twenty-nine 51 to 55; thirty-seven 56 to 60, and twenty-eight 61 or older. The sample was also relatively evenly divided across years of service with their employer: forty-seven had been employed less than 6 months; thirty-four for 6 to 12 months; sixty-one for 1 to 3 years; forty for 3 to 6 years; forty-one for 6 to 10 years; twenty-three for 10 to 20 years, and five had been there longer than 20 years.

Measures

In addition to the WIA items, participants completed modified versions of the Job Satisfaction Survey (JSS; Bellingham, 2004) and Age and Work Scale (AWS; Marshall, 1996; James, Swanberg, & McKechnie, 2007). To determine the mentorship independent variable, participants were asked to answer “Yes” or

"No" to the question "Do you mentor any of your co-workers?" All instruments from Study 1 are included in Appendix A.

The version of the JSS used in this study contains ten items measuring job satisfaction (e.g., "The work I do is in line with my personal values"), with respondents asked to indicate their agreement on a 4-point ("Strongly Disagree" to "Strongly Agree") scale. A higher sum score across all ten items indicates higher job satisfaction. It is hypothesized that there will be a moderate (.40 to .60) positive correlation between WIA and JSS mean scores, showing that the more positively an employee sees a workplace's intergenerational atmosphere, the more satisfied that employee will be with her or his job.

The AWS is a measure of the respondent's perceptions about older (50+) employees in the workplace, and includes 12 statements such as "Older workers have a lot to offer the workplace." Respondents are asked to indicate their agreement on a 4-point ("Strongly Disagree" to "Strongly Agree" scale, and a higher sum scale score indicates more positive beliefs about older workers. It is hypothesized that there will be a moderate correlation (.40 to .60) between WIA and AWS scores, showing that the more positively an employee sees a workplace's intergenerational atmosphere, the more positively that employee will view her or his older co-workers. WIA scores are expected to show a higher correlation with AWS scores than with JSS scores, since the AWS is related to aging specifically.

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Each volunteer received a survey packet consisting of the above measures and additional unrelated questions regarding retirement planning and caregiving issues. The organization's marketing and human resources departments assisted in distributing the survey to employees across several locations, including community centers, senior residences, and the office headquarters. Participants received no direct compensation for completing the survey, but were entered in a raffle to win one of five prizes worth approximately $100 each.

CHAPTER SIX

STUDY 1 – RESULTS

Psychometric Evaluation

Response Distributions. Item response distributions were evaluated according to Clark and Watson's (1995) criteria. No items were highly skewed or unbalanced. Clark and Watson point out that items where almost all participants respond similarly should be considered for elimination. One item from the Lack of Stereotypes subscale, "Co-workers outside my generation are not interested in making friends outside their generation" was arguably unbalanced, with 69.9 percent of respondents answering "Disagree". This item was retained, pending its correlations with other items and the total WIA score.

Internal Consistency. Reliability analysis of the total scale showed coefficient alpha to be .871. This score is above Clark and Watson's (1995) minimum recommendation of .80, which is based on Nunnally's (1978) general guidelines.

Clark and Watson (1995) argue that demonstrating unidimensionality and homogeneity are more important aspects of internal consistency than coefficient alpha, and the average interitem correlation should be the focus of analysis. In

our sample, the mean interitem correlation of WIA responses was .242, which fell in Clark and Watson's recommended range of .15 to .50.

Clark and Watson recommend the same range as a guideline for individual interitem correlations. Pairwise interitem correlations are found in Table 1. Since there were 23 items in the scale, each item had 22 possible interitem correlations to examine. Items correlating with other items in the desired range more than 55 percent of the time (at least 13 interitem correlations between .15 and .50) were retained. Five items did not meet this criterion: "Many co-workers outside my generation prefer being with people their own age" (LOS2); "How often do you socialize after work with co-workers outside your generation?" (IC6); "There are myths and stereotypes about older workers at my workplace" (WGI3); "An older-worker-friendly workplace is very important" (GAF2); and "Every company needs older workers to balance the workplace" (GAF3). Inspecting these items and their correlations revealed further support for eliminating them from the scale.

Table 1

Study 1: Pairwise Interitem Correlations of WIA Items

	1. LOS 1	2. LOS 2	3. LOS 3	4. PA1	5. PA2	6. PA3	7. IC1	8. IC2	9. IC3	10. IC4	11. IC5	12. IC6	13. WGI 1	14. WGI 2	15. WGI 3	16. WGI 4	17. WGI 5	18. WGI 6	19. WGI 7	20. WGI 8	21. GAF 1	22. GAF 2	23. GAF 3
1	1	.56	.22	.25	.29	.32	.33	.33	.32	.35	.25	.30	.15	.28	.16	.24	.20	.27	.27	.29	.38	.19	.29
2	.56	1	.37	.19	.14	.10	.22	.13	.21	.20	.23	.31	.09	.25	.14	.17	.07	.15	.14	.17	.29	.09	.08
3	.22	.37	1	.16	.13	.24	.19	.14	.26	.21	.20	.07	.10	.30	.14	.08	.17	.34	.31	.30	.22	.12	.05
4	.25	.19	.16	1	.46	.45	.34	.30	.30	.15	.13	.05	.20	.19	.15	.27	.21	.18	.27	.30	.22	.24	.23
5	.29	.14	.13	.46	1	.58	.32	.28	.24	.27	.16	.07	.22	.25	.16	.36	.37	.25	.35	.32	.41	.25	.31
6	.32	.10	.24	.45	.58	1	.40	.34	.39	.37	.22	.05	.23	.21	.05	.22	.32	.20	.21	.32	.33	.37	.35
7	.33	.22	.19	.34	.32	.40	1	.66	.61	.38	.45	.26	.19	.19	.15	.36	.42	.26	.27	.37	.21	.28	.22
8	.33	.13	.14	.30	.28	.34	.66	1	.63	.40	.38	.28	.16	.17	.11	.30	.27	.19	.24	.30	.24	.09	.22
9	.32	.21	.26	.30	.24	.39	.61	.63	1	.45	.48	.36	.12	.13	.06	.26	.19	.24	.20	.23	.19	.17	.19
10	.35	.20	.21	.15	.27	.37	.38	.40	.45	1	.37	.40	.16	.14	.13	.21	.24	.16	.12	.16	.24	.32	.31
11	.25	.23	.20	.13	.16	.22	.45	.38	.48	.37	1	.39	.11	.14	.12	.25	.26	.11	.14	.17	.14	.09	.07
12	.30	.31	.07	.05	.07	.05	.26	.28	.36	.40	.39	1	.12	.21	.06	.16	.07	.08	.06	.04	*.03*	.08	.08
13	.15	.09	.10	.20	.22	.23	.19	.16	.12	.16	.11	.12	1	.32	.15	.37	.34	.16	.23	.31	.10	.14	.10
14	.28	.25	.30	.19	.25	.21	.19	.17	.13	.14	.14	.21	.32	1	.33	.32	.24	.32	.32	.37	.16	.21	.22
15	.16	.14	.14	.15	.16	.05	.15	.11	.06	.13	.12	.06	.15	.33	1	.21	.13	.22	.18	.21	.09	*.06*	.04
16	.24	.17	.08	.27	.36	.22	.36	.30	.26	.21	.25	.16	.37	.32	.21	1	.46	.30	.33	.34	.15	.13	.23
17	.20	.07	.17	.21	.37	.32	.42	.27	.19	.24	.26	.07	.34	.24	.13	.46	1	.20	.21	.32	.19	.42	.32
18	.27	.15	.34	.18	.25	.20	.26	.19	.24	.16	.11	.08	.16	.32	.22	.30	.20	1	.77	.67	.21	.08	.11
19	.27	.14	.31	.27	.35	.21	.27	.24	.20	.12	.14	.06	.23	.32	.18	.33	.21	.77	1	.78	.27	.10	.11
20	.29	.17	.30	.30	.32	.32	.37	.30	.23	.16	.17	.04	.31	.37	.21	.34	.32	.67	.78	1	.26	.18	.13
21	.38	.29	.22	.22	.41	.33	.21	.24	.19	.24	.14	*.03*	.10	.16	.09	.15	.19	.21	.27	.26	1	.16	.27
22	.19	.09	.12	.24	.25	.37	.28	.09	.17	.32	.09	.08	.14	.21	*.06*	.13	.42	.08	.10	.18	.16	1	.53
23	.29	.08	.05	.23	.31	.35	.22	.22	.19	.31	.07	.08	.10	.22	.04	.23	.32	.11	.11	.13	.27	.53	1
%	95	55	64	91	82	82	91	73	77	86	59	41	64	86	45	91	86	73	64	82	82	50	55

Note: Correlations outside desired range are shaded in gray. Negative values are italicized. Values in bottom row show percent of correlations for each item in desired range.

LOS2 correlated less than .15 with 9 items, but it correlated highly (*r* = .56) with LOS1 (“Co-workers outside my generation are not interested in making friends outside their generation”), which correlated well with the other items 95 percent of the time. Thus, LOS1 was retained at the expense of LOS2, despite initial misgivings about LOS1’s abundance of “Disagree” responses (see “Response Distributions” section).

IC6 only correlated sufficiently with 41 percent of the other items. The item asked respondents to rate how often they socialize with differently aged co-workers after work – since the scale is intended to intergenerational measure attitudes and atmosphere *in the workplace*, it made sense to eliminate this item. There could be several reasons why workers do or do not socialize with co-workers outside the work-day unrelated to intergenerational attitudes. For example, people with children at home may not be able to go out at all after work, regardless of how they feel toward their co-workers.

WGI3 only correlated sufficiently with 45 percent of the other items, and upon examination, the question appears to be too vague in that it just asks for agreement that there are “myths and stereotypes,” which could be interpreted both positively and negatively. Also, it focused on older workers, rather than workers of all ages, thus justifying its elimination from the scale.

Two of the three General Age-Related Friendliness scale items, GAF2 and GAF3, did not achieve sufficient interitem correlations, and not surprisingly, they were correlated with each other higher than the desired range as well (*r* = .533).

These items were dropped from the scale since, similarly to WGI3, they both referred specifically to older workers, rather than workers of all or different ages, thus not necessarily measuring the construct of a positive intergenerational atmosphere.

After the above five items were eliminated, the revised scale's mean interitem correlation was .275 across 18 items, with a coefficient alpha of .861. Both scores achieved Clark and Watson's (1995) recommended guidelines. Corrected item-total correlations ranged from .32 (WG1: "I believe that my work environment is a healthy one for people of all ages") to .66 (IC1: "How often do you have conversations with co-workers outside your generation?"), thus all above the generally accepted minimum of .30 (cf. Goodwin & Goodwin, 1999).

In the process of eliminating items, however, hypothesized subscales lost key items. Notably, the theorized GAF subscale now contained just one item: "People work best when they work with others their same age". In order to determine if there were empirically and theoretically valid subscales in the WIA, an exploratory factor analysis was necessary.

Factor Analysis. To determine if there are groupings of items within a scale, performing either a principal components analysis or common factor analysis is necessary. Floyd and Widaman (1995) argue that principal components analysis is the appropriate method for data reduction, while common factor analysis is better for understanding how measured variables are related to each other through underlying constructs or latent variables. In this case,

extracting factors from the items was the goal, rather than reducing the number of items, since that was already accomplished by examining interitem correlations. Therefore, common factor analysis, specifically principal axis factoring with oblique promax rotation, was employed.

In the initial factor analysis, factors with eigenvalues greater than 1.0 were retained based on the Kaiser-Guttman rule, resulting in five factors. Visual inspection of the resulting scree plot of eigenvalues suggested there should only be two factors. The Kaiser-Guttman is generally not recommended as a basis for determining the number of factors (Floyd & Widaman, 1995; Goodwin & Goodwin, 1999; Reise, Waller, & Comrey, 2000) since it tends to overestimate the number of factors (Zweck & Velicer, 1986). But, keeping in mind that it is usually better to keep too many factors rather than too few (Wood, Tataryn, & Gorsuch, 1996; Reise, Waller, & Comrey, 2000), five factors were retained, pending investigation of communalities and factor loadings. Alternate factor analyses were performed for two-, three-, and four-factor solutions, but within each of those analyses, the cumulative variance accounted for by all the factors was less than 50% of the total variance. In the five-factor solution, the factors initially accounted for 63.6% of total variance, and 50.3% after extraction and rotation. Theory-based examination of measured variables also supported retaining five factors, as explained below.

The rotated pattern matrix (see Table 2) showed five relatively clear factors. A traditional factor loading minimum of .30 (Hair, Anderson, Tatham, &

Black, 1998) was sought in order for an item to be considered part of a factor. But, since strict adherence to .30 as a criterion has been criticized (e.g., Goodwin & Goodwin, 1999), in this case .30 was more of a guideline than a rule.

Table 2

Study 1: Rotated Pattern Matrix of 18-Item WIA.

Item	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
LOS1: Co-workers outside my generation are not interested in making friends outside their generation.	.174	.017	.143	.046	**.357**
LOS3: Co-workers outside my generation complain more than co-workers my age do.	.082	.177	-.033	-.098	**.476**
PA1: I feel comfortable when co-workers outside my generation try to make conversation with me.	.090	.090	**.526**	-.006	-.085
PA2: I enjoy interacting with co-workers of different generations.	-.150	.011	**.856**	.092	-.034
PA3: My co-workers outside my generation are interesting and unique individuals.	.102	-.071	**.703**	-.061	.113
IC1: How often do you have conversations with co-workers outside your generation?	**.729**	.068	.045	.136	-.107
IC2: …have conversations with co-workers outside your generation relating to things other than work?	**.751**	.045	.051	-.002	-.062
IC3: …talk with your co-workers outside your generation about your personal lives?	**.887**	.022	-.011	-.163	.061
IC4: …interact with your co-workers outside your generation at company-sponsored events?	.383	-.139	.080	.031	.322
IC5: …eat meals with co-workers outside your generation during the workday?	**.549**	-.080	-.163	.122	.163
WGI1: I believe that my work environment is a healthy one for people of all ages.	-.076	.011	-.017	**.558**	.046
WGI2: Workers of all ages are respected in my workplace.	-.117	.133	-.074	**.385**	.338
WGI4: I am able to communicate effectively with workers of different generations.	.112	.046	-.005	**.675**	-.131
WGI5: Working with co-workers of different ages enhances the quality of my work life.	.079	-.095	.097	**.591**	.005
WGI6: My co-workers make older workers feel that they should retire.	.023	**.790**	-.074	-.034	.162
WGI7: I feel pressure from younger workers to step down.	-.033	**.952**	.054	-.051	-.010
WGI8: I feel pressure from older workers to step down.	.021	**.738**	.049	.116	.016
GARF1: People work best when they work with others their same age.	-.063	.015	**.400**	-.033	.306

Note: Factor loadings for items retained on each factor are in boldface.

Most items had a factor loading of at least .4 on only one factor, making their inclusion on those factors relatively straightforward. The only items where factor loadings of .4 were not achieved were LOS1 (“Co-workers outside my generation are not interested in making friends outside their generation”), WGI2 (“Workers of all ages are respected in my workplace”), and IC4 (“How often do you interact with your co-workers outside your generation at company-sponsored events?”). LOS1 loaded on Factor 5 at .357. Its next-highest loading was on Factor 1, which was low enough (and less than .30) at .174, thus legitimizing its inclusion on Factor 5. WGI2 loaded on Factor 4 at .385, but had a second-highest loading of .338 on Factor 5. With the two loadings so close, and both over .30, it was necessary to examine the content of those factors. Since Factor 4 contained other similar items from the theorized WGI subscale, WGI2 was allowed to be retained on that factor rather than Factor 5, which contained the theorized LOS subscale items. IC4 loaded at .383 on Factor 1 and .322 on Factor 5. Reexamining the wording of IC4 and its partners in the theorized IC subscale led to this item’s removal, since it potentially refers to occurrences happening outside the work environment (“company-sponsored events”), and the other IC items refer to more immediate workday encounters.

For the most part, the new factors were similar to theorized subscales, with two notable exceptions. The items WGI6, WGI7, and WGI8, which all have to do with leaving one’s position due to age, loaded strongly (.790, .952, and .738, respectively) on their own factor, separate from the other WGI items. This

new factor was made into its own subscale. It could have been called "Intergenerational Pressure to Leave", but since the items were reverse-scored (similarly to the Lack of Stereotypes scale), it was labeled "Workplace Intergenerational Retention" (WIR). Also, the lone remaining GAF item, "People work best when they work with others their same age" loaded at .400 on Factor 3, which contained all three items from the PA subscale. Because disagreement with GAF1 indicates a positive mindset toward working with peers of different ages, it became part of the Positive Affect subscale.

After the above decisions were made, the subscales of the revised WIA scale were the following:

Factor 1: Intergenerational Contact (IC)

- IC1: How often do you have conversations with co-workers outside your generation?
- IC2: How often do you have conversations with co-workers outside your generation relating to things other than work?
- IC3: How often do you talk with co-workers outside your generation about your personal lives?
- IC4 (formerly IC5): How often do you eat meals with co-workers outside your generation during the workday?

Factor 2: Workplace Intergenerational Retention (WIR)

- WIR1 (formerly WGI6): My co-workers make older workers feel that they should retire.

- WIR2 (formerly WGI7): I feel pressure from younger workers to step down.
- WIR3 (formerly WGI8): I feel pressure from older workers to step down.

Factor 3: Positive Affect (PA)

- PA1: I feel comfortable when co-workers outside my generation try to make conversation with me.
- PA2: I enjoy interacting with co-workers of different generations.
- PA3: My co-workers outside my generation are interesting and unique individuals.
- PA4 (formerly GAF1): People work best when they work with others their same age.

Factor 4: Workplace Generational Inclusiveness (WGI)

- WGI1: I believe that my work environment is a healthy one for people of all ages.
- WGI2: Workers of all ages are respected in my workplace.
- WGI3 (formerly WGI4): I am able to communicate effectively with workers of different generations.
- WGI4 (formerly WGI5): Working with co-workers of different ages enhances the quality of my work life.

Factor 5: Lack of Stereotypes (LOS)

- LOS1: Co-workers outside my generation are not interested in making friends outside their generation.

- LOS2 (formerly LOS3): Co-workers outside my generation complain more than co-workers my age do.

Subscale Validation. Based on the above groupings, intrasubscale item correlations (i.e., within the items of each each subscale) were compared to intersubscale item correlations. Clark and Watson advocate abandoning subscales in favor of an overall scale if the intrasubscale item correlations are not systematically higher than the intersubscale item correlations. In all but one case, each WIA item showed a higher mean intrasubscale correlation than intersubscale correlation (see Table 3). The one item that was the exception was LOS2 (“Co-workers outside my generation complain more than co-workers my age do”), which correlated at .215 with its subscale counterpart, but at .284 with the other 16 items. This lack of a strong correlation was likely due to there being only two items within the LOS subscale.

Table 3

Study 1: Intrasubscale and Intersubscale Correlations.

Item	Mean Intrasubscale Correlation	Mean Intersubscale Correlation
Intergenerational Contact (IC)	*.481*	*.234*
1. How often do you have conversations with co-workers outside your generation?	.524	.297
2. …have conversations with co-workers outside your generation relating to things other than work?	.518	.249
3. …talk with your co-workers outside your generation about your personal lives?	.542	.236
4. …eat meals with co-workers outside your generation during the workday?	.419	.174
Workplace Intergenerational Retention (WIR)	*.741*	*.255*
1. My co-workers make older workers feel that they should retire.	.720	.226
2. I feel pressure from younger workers to step down.	.775	.250
3. I feel pressure from older workers to step down.	.729	.290
Positive Affect (PA)	*.389*	*.249*
1. I feel comfortable when co-workers outside my generation try to make conversation with me.	.301	.231
2. I enjoy interacting with co-workers of different generations.	.485	.272
3. My co-workers outside my generation are interesting and unique individuals.	.452	.282
4. People work best when they work with others their same age.	.316	.211
Workplace Generational Inclusiveness (WGI)	*.340*	*.229*
1. I believe that my work environment is a healthy one for people of all ages.	.342	.179
2. Workers of all ages are respected in my workplace.	.292	.222
3. I am able to communicate effectively with workers of different generations.	.380	.262
4. Working with co-workers of different ages enhances the quality of my work life.	.347	.253
Lack of Stereotypes (LOS)	*.215*	*.246*
1. Co-workers outside my generation are not interested in making friends outside their generation.	.215	.284
2. Co-workers outside my generation complain more than co-workers my age do.	.215	.209

Note: Subscale means are italicized.

To determine if a global score for the WIA was appropriate, a second-order factor analysis of the five subscale scores was performed. For each participant, standardized subscale scores were created by taking the mean of the standardized scores of items in that subscale.[1] Next, an exploratory factor analysis, via principle axis rotation with promax rotation, was performed. A single-factor solution accounting for 52 percent of total variance resulted, confirming the underlying unidimensionality of the five subscales. All five WIA subscales loaded highly on this second-order global factor: Intergenerational Contact (.615), Workplace Intergenerational Retention (.603), Positive Affect (.679), Workplace Generational Inclusiveness (.611), and Lack of Stereotypes (.649). Therefore, in addition to five subscale scores, a total WIA score was calculated for each participant by summing their standardized subscale scores.

Construct Validity: Convergent and Discriminant Validities

A scale's convergent validity is determined by its ability to measure similar constructs to what it is intended to measure, and discriminant validity refers to its ability to measure its intended construct and not others. The WIA scale proposes to measure intergenerational attitudes and atmosphere in the workplace. It may be possible that it is testing an employee's overall satisfaction with a workplace, which manifests itself through perceptions of co-workers, including ones aged

[1] Subscale scores were standardized via *z*-score transformations, resulting in means of 0 and standard deviations of 1 for each subscale across all participants. For ease of interpretation, five points were then added to each subscale score, resulting in means of 5 and standard deviations of 1 for each subscale. From this point forward in Study 1, "standardized subscale scores" refer to *z*-score transformations + 5.

differently than that worker. Or, it might have measured perceptions of older workers, rather than ideas about workers of different generations. It was expected that WIA scores would correlate significantly with measures of job satisfaction (JSS) and perceptions of older workers (AWS); specifically, they would achieve a moderate positive correlation (r = .40 to .60) with both job satisfaction and perceptions of older workers. WIA scores' correlation with AWS scores should be greater than the correlation with JSS scores, since the WIA is intended to measure age-related attitudes more than general job satisfaction.

Results indicated both correlations were in the predicted direction, giving support to the WIA scale's convergent and discriminant validities. The intercorrelations, sample sizes, means, standard deviations, and internal consistencies (alpha coefficients) for the WIA, JSS, and AWS scales are displayed in Table 4. WIA scores correlated significantly and moderately positively with both the JSS (r = .524) and the AWS (r = .562). While both scores were moderate, it is notable that the WIA-AWS correlation was larger than the WIA-JSS correlation, confirming expectations.

Table 4

Correlations, Sample Sizes, Means, Standard Deviations, and Internal Consistency Estimates for the WIA, JSS, and AWS Scales.

Scale	WIA	JSS	AWS	*N*	*M*	*SD*	*α*
WIA	1.00			244	25.09	3.60	.77
JSS	.524	1.00		254	3.24	.49	.91
AWS	.562	.424	1.00	247	2.93	.39	.83

Criterion Validity: Concurrent Validity

Concurrent validity shows if an instrument can distinguish between different groups of respondents in an expected pattern, based on measures administered at the same time. Participants were asked if they mentored co-workers, and it was hypothesized that the 123 participants who answered “yes” would score higher on the WIA scale than the 118 workers who answered “no”.

A between-subjects *t*-test supported the expected difference between those who mentor and those who do not. Mentoring employees scored significantly higher on the WIA scale ($M = 25.93$, $SD = 3.48$) than non-mentoring employees ($M = 24.28$, $SD = 3.56$), $t(239) = 3.62$, $p < .0001$, and did so with a medium (Cohen’s $d = .47$) effect size. Results of *t*-tests using each subscale as a dependent variable (see Table 5) showed similar results for the IC, WIR, and LOS subscales, with the largest effect residing in IC scores ($d = .58$). Since mentoring involves presumably frequent contact with the employee one is mentoring, this difference in intergenerational contact is understandable.

Table 5

Study 1: Mentoring vs. Non-Mentoring Employees' WIA Subscale Scores

	Mentoring Employees		Non-Mentoring Employees				
Subscale	*M*	*SD*	*M*	*SD*	*df*	*t*	*d*
IC	5.28	.92	4.72	1.02	240	4.47***	.58
WIR	5.13	.94	4.88	1.06	249	2.00*	.25
PA	5.09	1.07	4.94	.91	240	1.21	.16
WGI	5.13	.91	4.88	1.10	249	1.96	.25
LOS	5.18	1.00	4.83	.99	239	2.77**	.36
WIA total	25.93	3.48	24.28	3.56	239	3.62***	.47

*$p < .05$. **$p < .01$. ***$p < .0001$

It is possible that the differences in WIA scores found above for mentoring and non-mentoring employees could be due to other factors such as age, length of service, or job satisfaction. Between-subjects analyses of variance (ANOVAs) were performed with those variables as independent variables or covariates to determine if WIA scores still differentiated between those who mentor and those who do not.

The age variable in this study was not continuous, but was broken into ten ordinal groups. For ease of interpretation, participants' ages were recoded into one of three (18-30, 31-45, 46+) groups, and became an additional independent variable. Job satisfaction, since it was a continuous variable and could be

considered confounding, was included as a covariate in a 2 (mentoring: yes vs. no) x 3 (age: 18-30 vs. 31-45 vs. 46+) analysis of covariance (ANCOVA). With the additional independent variable of age and the covariate of job satisfaction accounted for, there was only a marginally significant main effect for mentoring on WIA scores, $F(1, 229) = 2.77$, $p = .098$, and no significant main effect for age ($N_{18\text{-}30} = 39$, $M_{18\text{-}30} = 24.24$, $SD_{18\text{-}30} = 2.73$; $N_{31\text{-}45} = 73$, $M_{31\text{-}45} = 25.05$, $SD_{31\text{-}45} = 4.05$; $N_{46+} = 124$, $M_{46+} = 25.43$, $SD_{46+} = 3.57$) or significant mentoring x age interaction (see Table 6). These ANCOVA results, showing that the impact of mentoring on WIA scores did not attain statistical significance at the $p < .05$ level with age and job satisfaction accounted for, leave room for stronger support of the WIA scale's concurrent validity.

Table 6

Study 1: Source Table for 2 (Mentoring: Yes vs. No) x 3 (Age: 18-30 vs. 31-45 vs. 46+) Between-Subjects ANCOVA with Job Satisfaction as a Covariate

Source	SS	df	MS	*F*	*p*
JSS (covariate)	725.14	1	725.14	75.8	.0001
Mentoring	26.47	1	26.47	2.77	.098
Age	3.03	2	1.52	.16	.86
Mentoring*Age	.69	2	.345	.04	.97
Error	2190.33	229	.11		
Total	3073.89	235			

A second ANCOVA was performed to include length of service as an independent variable. Similarly to the age variable, the length of service variable in this study was originally divided into seven ordinal levels, but for ease of interpretation, it was recoded into two groups (0-3 years, 4+ years), and became an additional independent variable, joining the mentoring independent variable and the covariate job satisfaction in a 2 (mentoring: yes vs. no) x 2 (length of service: 0-3 vs. 4+) ANCOVA. With those variables in the model, there was a significant main effect for mentoring on WIA scores, $F(1, 239) = 8.64$, $p = .004$. Interestingly, there was also a significant main effect for length of service, $F(1, 239) = 8.26$, $p = .004$, in that people who had worked at the organization three years or less ($N = 132$, $M = 25.45$, $SD = 3.55$) scored significantly higher on the WIA than those who had worked there four or more years ($N = 108$, $M = 24.74$,

SD = 3.66). There was no significant mentoring x length of service interaction (see Table 7). Here, even though people who had worked at the organization for a shorter time scored higher on the WIA scale than those who had worked longer, the results of the ANCOVA indicated that the WIA scale does an adequate job of differentiating between mentoring and non-mentoring employees, thus supporting its concurrent validity.

Table 7

Source Table for 2 (Mentoring: Yes vs. No) x 2 (Length of Service: 0-3 Years vs. 4+ Years) Between-Subjects ANCOVA with Job Satisfaction as a Covariate

Source	SS	df	MS	*F*	*p*
JSS (covariate)	735.36	1	735.36	80.80	.0001
Mentoring	78.67	1	78.67	8.64	.004
Length of Service	75.17	1	75.17	8.26	.004
Mentoring * LOS	16.11	1	16.11	1.77	.19
Error	2138.75	235	9.10		
Total	3119.53	239			

CHAPTER SEVEN

STUDY ONE – DISCUSSION

While the findings of this study provide initial support for the reliability and validity of WIA scores, there were several limitations. One area that could use improvement is the names and structure of the WIA subscales. The Lack of Stereotypes subscale was labeled as such because of the way responses to its items were reverse-scored. It really measured agreement with stereotypes, but in order for its scores to go in the same direction as the other subscale scores, it was necessary to recode the items to show a lack of stereotypes. This subscale also suffers in that it only consisted of two items in its final form, which violates Comrey's (1988) assertion that at least three variables are needed to identify a common factor. The two items were also not correlated very highly with one another, suggesting more items may be needed to fully conceptualize a lack of stereotypes about other generations.

Questions could be raised about the content of the Intergenerational Contact subscale as well. Specifically, respondents answered it on a five-point scale assessing frequency of behaviors, whereas the other subscales were answered on four-point scales measuring agreement. Recoding the IC responses to fit the same scale as the other items could have introduced unnecessary

variance into the data; therefore, future work on the WIA scale should attempt to establish more uniform response choices for all its subscales.

Sampling bias and selection bias may have played roles in this study. The sample consisted of employees of a non-profit seniors housing and services organization. Because of the organization's emphasis on older adults, it is possible that its employees viewed aging and intergenerational dynamics more positively than the general population. Also, among the organization's staff, perhaps only the employees with more positive intergenerational perceptions chose to complete the survey. However, since the WIA scale's validity was demonstrated with this potentially biased sample, it is likely that a more generalizable sample would show similar results.

Convergent, discriminant, and concurrent validities could all be reinforced. Only two other scales were used to establish convergent and discriminant validity in this study. Using a measurement of attitudes toward younger workers, and not just older workers as in the AWS, would be insightful.

Despite its limitations, Study 1 provided initial support for the reliability and validity of the Workplace Intergenerational Atmosphere scale. With further development in Study 2, the WIA scale could be a promising device both for theoretical and applied research. Given the ongoing and predicted demographic changes in the workplace, its applicability and relevance should continue to grow.

CHAPTER EIGHT

STUDY 2 – INTRODUCTION

The findings of Study 1, while providing initial support for the reliability and validity of the WIA scale, pointed toward further refinement of both the scale itself and the statistical methods used to establish its measurement validity.

At the start of Study 1, 23 items were generated for the WIA scale. Those 23 items were hypothesized to fit into five subscales: Lack of Stereotypes (LOS), Positive Affect (PA), Intergenerational Contact (IC), Workplace Generational Inclusiveness (WGI), and General Age-Related Friendliness (GAF). Examination of interitem correlations led to the removal of five items for not correlating with other items in Clark and Watson's (1995) recommended range. Removing the five items resulted in unbalanced subscales, and an exploratory factor analysis was performed to test structural validity. Based on the results of the factor analysis, one additional item was removed from the WIA scale, leaving 17 items intact and five factors slightly different than the theorized subscales. At the conclusion of Study 1, the five subscales and the items that comprised them were:

Factor 1: Intergenerational Contact (IC)

- IC1: How often do you have conversations with co-workers outside your generation?
- IC2: How often do you have conversations with co-workers outside your generation relating to things other than work?
- IC3: How often do you talk with co-workers outside your generation about your personal lives?
- IC4: How often do you eat meals with co-workers outside your generation during the workday?

Factor 2: Workplace Intergenerational Retention (WIR)

- WIR1: My co-workers make older workers feel that they should retire.
- WIR2: I feel pressure from younger workers to step down.
- WIR3: I feel pressure from older workers to step down.

Factor 3: Positive Affect (PA)

- PA1: I feel comfortable when co-workers outside my generation try to make conversation with me.
- PA2: I enjoy interacting with co-workers of different generations.
- PA3: My co-workers outside my generation are interesting and unique individuals.
- PA4: People work best when they work with others their same age.

Factor 4: Workplace Generational Inclusiveness (WGI)

- WGI1: I believe that my work environment is a healthy one for people of all ages.

- WGI2: Workers of all ages are respected in my workplace.
- WGI3: I am able to communicate effectively with workers of different generations.
- WGI4: Working with co-workers of different ages enhances the quality of my work life.

Factor 5: Lack of Stereotypes (LOS)

- LOS1: Co-workers outside my generation are not interested in making friends outside their generation.
- LOS2 (formerly LOS3): Co-workers outside my generation complain more than co-workers my age do.

As mentioned in the previous section, two of the above subscales (IC and LOS) were unsatisfactory in their current form. In Study 1, the items in the IC subscale asked participants to indicate the frequency they engaged in behaviors on a five-point scale ("Never," "Rarely," "Some," "Often," "Very Often"). All the other items in the WIA asked participants to indicate their agreement with certain statements on a four-point ("Strongly Disagree" to "Strongly Agree") Likert-type scale. This incongruence in scale choices (four versus five points) necessitated standardizing each item and subscale score in Study 1.

To make possible scores on the IC items more uniform in comparison with other WIA items, the IC response scale in Study 2 was modified to include four answer choices: "Never," "Sometimes," "Often," and "Very Often." This four-point scale measuring frequency of contact is similar to that of the College Student

Experience Questionnaire (CSEQ; Pace & Kuh, 1998), a widely used scale that asks undergradutes to rate the frequency they engage in a variety of behaviors.

At the end of Study 1, the LOS subscale was composed of only two items after one if its original items failed to correlate highly enough with other WIA items. Having only two items in this subscale goes against Comrey's (1988) assertion that at least three variables are needed to identify a common factor. Also, the current two LOS items correlated with other WIA items (r = .284) more highly than with each other (r = .215), reinforcing the need for the creation of additional items to make up this subscale.

To remedy the lack of items in the LOS subscale, the expert team created two new items hypothesized to correlate sufficiently and be structurally valid expressed as a common factor with the other LOS items: "Co-workers outside my generation usually talk about things that don't interest me" (LOS3) and "Co-workers outside my generation tend to work differently than co-workers my age do" (LOS4). The content of these two additional LOS items was derived based on commonly heard complaints relating to generational differences in the workplace as discussed in popular media (e.g., DiRomualdo, 2006; Larson, 2008). In Study 2, these two items were added to the WIA scale and subjected to the same analyses as the original items.

With the above two items added to the LOS subscale, that subscale, along with the IC, PA, and WGI subscales each contained four items, leaving only the WIR subscale with three items. For the sake of uniformity in number of items

across subscales, and for parsimony when computing a total WIA score based on subscale scores, the expert team created an additional item for the WIR subscale. The WIR subscale already contained items about both younger and older workers being pressured to step down. It also contained an item about co-workers making older workers feel they should retire. The expert team created an item (WIR4) thought to have similar meaning as that item, but applied to younger workers: “In my workplace, qualified younger workers tend to be overlooked for promotions.” Agreement with WIR4 would indicate a workplace’s lack of concern for retaining workers of different generations.

This version of the WIA scale, now known as the WIA-R (R standing for “Revised”), with four items in each of five subscales, would be subjected in Study 2 to similar tests of validity as the original WIA scale was in Study 1 (but see information below regarding the AWS), as well as confirmatory factor analytical procedures.

The Age and Work Scale (AWS; Marshall, 1996) from Study 1 was useful in that it provided a previously used scale with which the WIA scale’s convergent and discriminant validities could be tested, but its focus on attitudes toward older workers, as opposed to workers of various ages, does not fully mesh with the Palmore’s modern definition of ageism as bias towards members of an age group. Specifically, the AWS does not contain items measuring attitudes or biases about younger workers. Therefore, the expert team created two new

scales based on the AWS: the Stereotypes about Younger Workers (St-Y) scale and the Stereotypes about Older Workers (St-O) scale.

Each Stereotypes scale consisted of four negative statements about the target group compared to its opposite (either younger or older workers). The expert team generated items based on common negative stereotypes about younger or older workers frequently expressed in popular literature in management or human resources (e.g., Cassie, 2006). These stereotypes included beliefs about ease of training, work ethic, adapting to new technology, and loyalty to the organization. All items were designed with a four-point response scale ("Strongly Disagree," "Disagree," "Agree," "Strongly Agree"). The items on the St-O scale were:

- StO1: Older workers are difficult to train compared to younger workers.
- StO2: Older workers are less likely to adapt to new technology than younger workers.
- StO3: Younger workers are easier to train than older workers.
- StO4: Younger workers are more likely to adapt to new technology than older workers.

Items on the St-Y scale were similar in content as the St-O items, but phrased in such a way so that younger workers were the target of the stereotype:

- StY1: Older workers have a stronger work ethic than younger workers
- StY2: Older workers are more loyal to their organization than younger workers.

- StY3: Younger workers don’t work as hard as older workers.
- StY4: Younger workers are less loyal to their organization than older workers.

Agreement with items in the St-O and St-Y scales would indicate endorsement of negative age-based stereotypes about workers in older and younger age groups, respectively. Since the St-Y and St-O scales were created to replace the AWS, examination of their correlations with WIA-R scores would serve to bolster convergent validity.

CHAPTER NINE

STUDY 2 – HYPOTHESES AND POWER ANALYSES

Hypotheses

Study 2's hypotheses were similar to those in Study 1 and focused on the WIA-R scale's psychometric properties, content/structural validities, criterion validity, and construct validity (through both convergent and discriminant validities):

Hypothesis 1a: The WIA-R scale would show sufficient interitem reliability (Cronbach's alpha > .80).

Hypothesis 1b: The WIA-R scale would show sufficient unidimensionality and homogeneity, with mean interitem correlations and the majority of each item's pairwise correlations having values between .15 and .50.

Hypothesis 2a: A proposed five-factor model (with five theorized subscales as oblique first-order latent variables; see Figure 1) would fit the sample data better than any of three alternative models (Figures 2-4), based on nested χ^2 difference analyses through confirmatory factor analytic procedures.

Hypothesis 2b: The proposed five-factor model would achieve sufficient relative goodness-of-fit coefficients (GFI, AGFI, NFI, NNFI, IFI, CFI > .90; RMSR, RMSEA close to 0).

Hypothesis 3: With job satisfaction, length of service, and age accounted for, scores on the WIA-R would be significant predictors of whether participants were mentors or not, based on logistic regression analysis.

Hypothesis 4a: A factor model with distinct WIA-R, St-Y, and St-O latent variables would fit the data no better than a model with one global latent variable, thus demonstrating convergence between the WIA-R and Stereotypes measures.

Hypothesis 4b: A factor model with distinct WIA-R and JSS latent variables would fit the data significantly better than a model with one global latent variable, thus demonstrating discriminance between the WIA-R and job satisfaction measures.

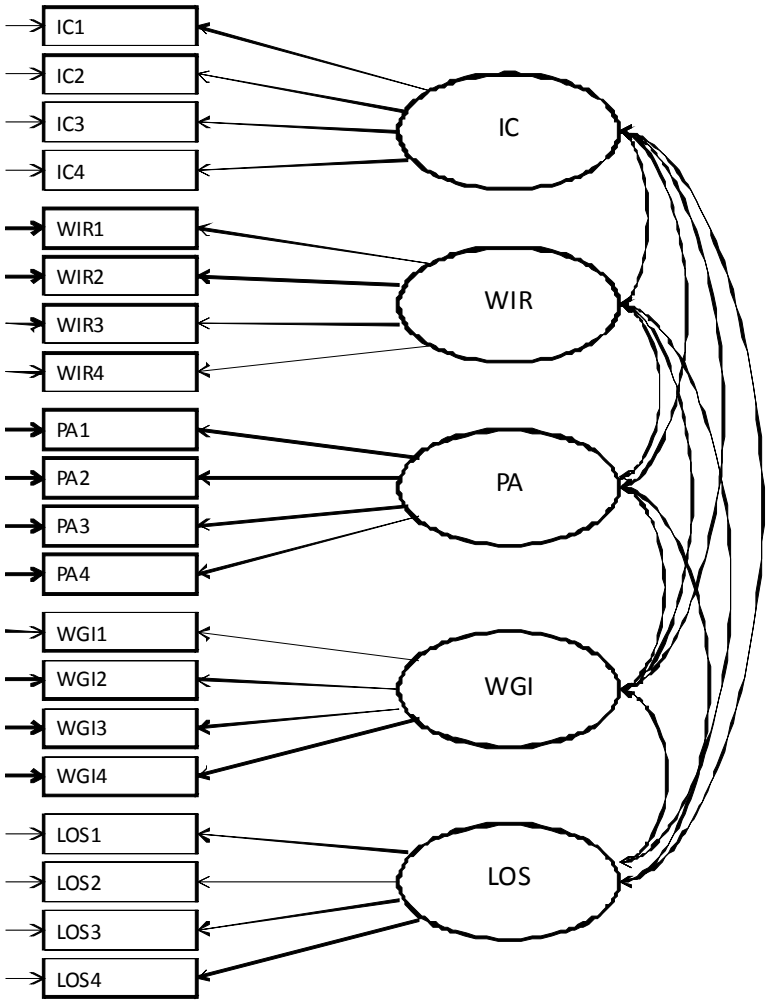

Figure 1. Proposed five-factor oblique CFA model.

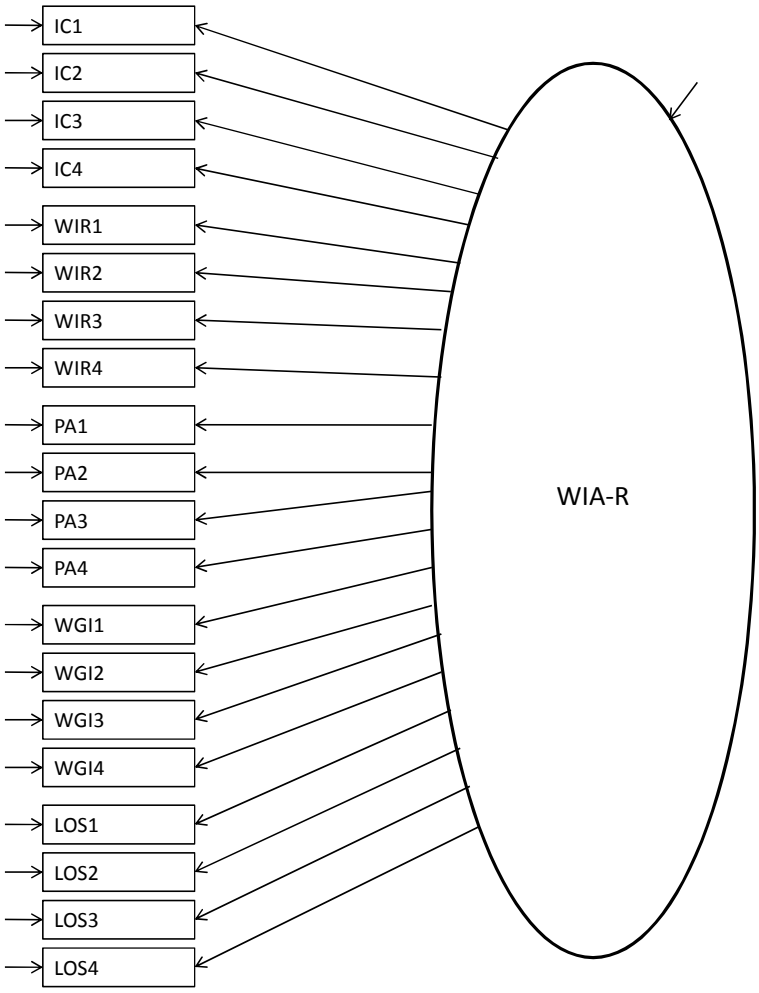

Figure 2. AM1: Alternative single-factor model.

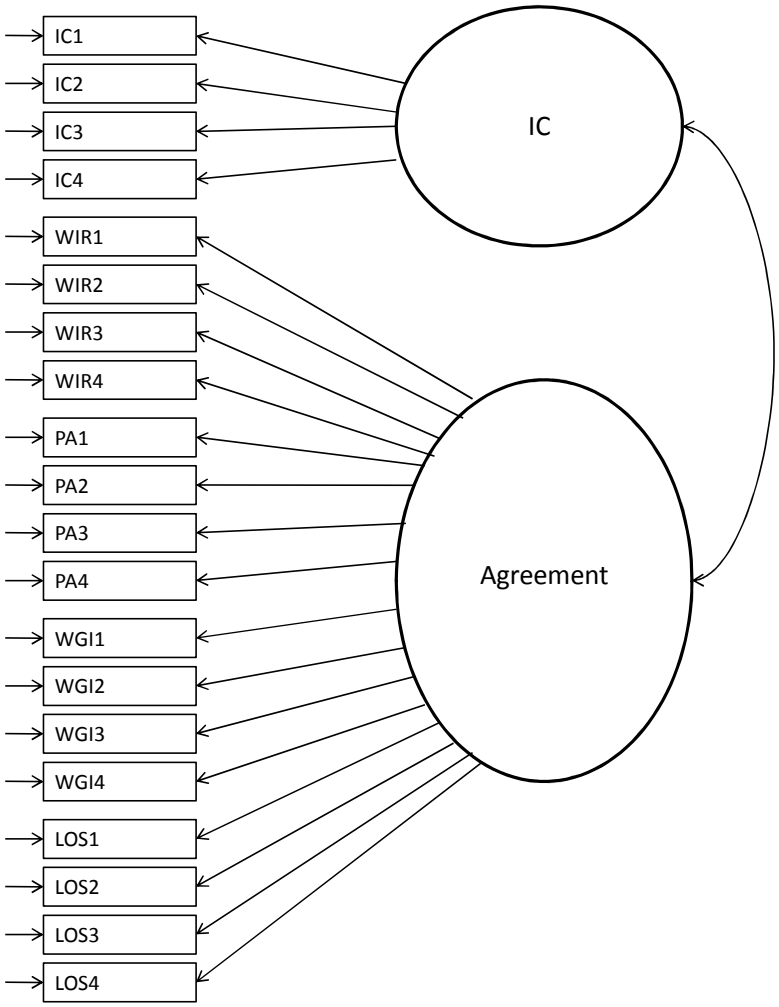

Figure 3. AM2: Alternative two-factor model.

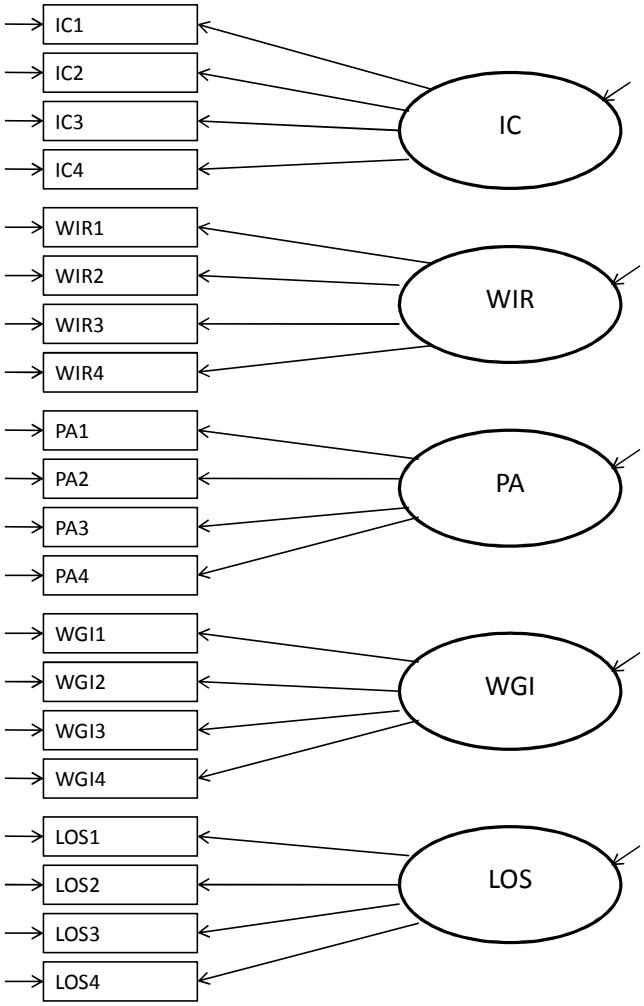

Figure 4. AM3: Alternative five-factor orthogonal model.

Power Analyses

Power analysis for structural equation modeling in Study 2 was based on Hancock's (2006) method and tables for *a priori* sample size determination for testing data-model fit as a whole. Recommended minimum sample sizes were derived through model degrees of freedom (df, calculated by subtracting estimated parameters from known elements), power (π, generally recommended to be at least .80), and estimated RMSEA (ε, the degree of acceptability of model fit based on discrepancy between implied and observed moments). Of the eight structural equation models to be tested in Study 2 (four to test structural validity, two to test convergent validity and two to test discriminant validity), the one with the fewest degrees of freedom was the five-factor oblique model used to test structural validity. In this model (see Figure 1), there are 210 known elements [(20 indicators)(20+1)/2] and 50 estimated parameters (20 indicator residual variances + 15 free factor loadings + 5 factor variances + 10 factor correlations), resulting in 160 degrees of freedom. Hancock recommends using a ε of .02 as a reasonable compromise between .00, which is unrealistically optimistic in most settings, and .05, which usually necessitates an impractically large sample size. With a ε of .02 and π of .80, a model with 160 df would require a minimum sample size of at least 162 participants.[2]

[2] With a more conservative ε of .04 and π of .80, a model with 160 df would require a minimum sample size of 561 participants.

Power analysis for the logistic regression analysis used to establish criterion validity is based on Aldrich and Nelson's (1984) recommendation of 50 cases per predictor variable. In the criterion validity section of Study 2, four variables were used (WIA-R scores, JSS scores, length of service, and age) to predict mentoring group membership. Therefore, a minimum of 200 [(4 predictors)(50 cases)] participants would be required for this analysis. It was anticipated that the sample size in Study 2 would be at least 400 participants, thus meeting power requirements for both the structural equation modeling and logistic regression analyses detailed in this section.

CHAPTER TEN

STUDY 2 – OVERVIEW AND METHODS

Overview

Work in Study 2 elaborated upon Study 1 by establishing the measurement validity of the WIA-R in a similar fashion as in Study 1, but with more uniform response choices and additional items added to replace those dropped in Study 1. New measures (the Stereotypes about Younger Workers and Stereotypes about Older Workers scales) were added to replace the Age and Work Scale. In addition, measurement validity was tested via confirmatory factor analytic procedures, rather than exploratory means.

Participants

Data were collected from organizations participating in Mather LifeWays® *360° Aging in the Workplace Study*. Mather LifeWays®, a non-profit seniors housing and service organization, offered free participation in this study to other organizations to assess various aspects of their employees' perspectives on intergenerational dynamics, knowledge about retirement options, and caregiving situations. Data in this study were provided from 573 employees of three partnering non-profit seniors housing and service organizations. Organizational

leadership granted permission to request data from participating employees, and the Mather LifeWays Institutional Review Board approved the study.

The sample was largely (88%) female. The median age was 43. Participants were relatively evenly divided across age groups: almost a quarter (24%) were younger than 30; 40 percent were between 31 and 49, and 36 percent were 50 or older. Three-fourths (75%) participants were Caucasian; 16 percent were African-American; 3 percent were Asian or Pacific Islander, and 3 percent were Hispanic. Slightly over half the sample (51%) were married; 29 percent were single; 13 percent were divorced, and 4 percent were widowed.

Forty-one percent of participants had worked for their current employer longer than three years; 30 percent between one and three years, and 29 percent had been employed less than a year. Almost half (49%) the participants worked in health care or nursing. 12 percent worked in housekeeping or maintenance; 12 percent in dining services; 10 percent in resident services, and 10 percent in administrative services, human resources, accounting, or sales.

Measures

Most of the measures used in Study 2 were identical to those used in Study 1, with the exception of the new items added to the WIA-R and the use of the St-O and St-Y scales. New items in the WIA-R were explained in detail in the previous section. WIA-R items asking respondents to indicate agreement on a "Strongly Disagree" – "Strongly Agree" scale (the LOS, WIR, WGI, and PA subscales) were presented in random order, as opposed to being ordered by

theorized subscale, in order to minimize context effects. All instruments from Study 2 are included in Appendix B.

Similarly to Study 1, participants completed a modified version of the Job Satisfaction Survey (JSS; Bellingham, 2004) in addition to the WIA-R items. To determine whether participants were mentors or not, they were asked to answer "Yes" or "No" to the question "Do you mentor any of your co-workers?" Instead of completing the AWS scale, participants were asked to complete the St-Y and St-O scales discussed in Chapter 8.

Procedure

Employees at participating organizations were given the opportunity to complete the survey at quarterly staff meetings held during the work-day at their places of employment. Any employee unable to complete the survey at the meeting was given a copy of the survey to complete and mail back to the author via an included postage-paid envelope.

Trained survey administrators from Mather LifeWays attended quarterly meetings and explained to employees the purpose of the study, and that it was entirely voluntary. The first page of the survey included an implied consent letter reinforcing the voluntary nature of the survey, as well as insuring confidentiality and anonymity. Employees at the meeting who completed the survey were asked to seal it in an envelope and then leave it in a closed box, which the survey administrator took back to Mather LifeWays upon leaving the meeting.

Participants received no direct compensation for completing the survey, but were given the option to complete it during the workday without losing pay. Some locations offered incentives to their employees for attending the quarterly meetings (such as entering their names in a raffle for small prizes), but survey administrators insured that meeting attendees were still eligible for attendance prizes even if they did not complete the survey.

CHAPTER ELEVEN

STUDY 2 – RESULTS

By focusing on psychometric evaluation, content/structural validity, criterion validity, and construct validity (both convergent and discriminant validities), Study 2 followed a similar progression of attempting to confirm the measurement validity of the WIA-R scale as in Study 1.

Psychometric Evaluation

Hypothesis 1a: The WIA-R scale will show sufficient interitem reliability (Cronbach's alpha > .80).

Hypothesis 1b: The WIA-R scale will show sufficient unidimensionality and homogeneity, with mean interitem correlations and the majority of each item's pairwise correlations having values between .15 and .50.

Response Distributions. Item response distributions were evaluated according to Clark and Watson's (1995) criteria for skewness and balance. No items were highly skewed or unbalanced.

Internal Consistency. Reliability analysis of the total scale showed coefficient alpha to be .854. This score was above Clark and Watson's (1995) minimum recommendation of .80, which is based on Nunnally's (1978) general

guidelines, and supported Hypothesis 1a, that the WIA-R scale would show sufficient interitem reliability.

As in Study 1, inspecting correlations between individual items allowed for determining unidimensionality and homogeneity of the WIA-R. The mean interitem correlation in the WIA-R was .24, within Clark and Watson's recommended range of .15 to .50. The same same range was used to examine individual interitem correlations. With 20 items in the scale, each item would share 19 pairwise interitem correlations, and of these 19 correlations, at least ten should be in the desired .15 to .50 range. Pairwise interitem correlations are found in Table 8. All 20 WIA-R items met this criterion of having a majority of inter-item correlations between .15 and .50, supporting Hypothesis 2a, that the WIA-R scale would show sufficient unidimensionality and homogeneity. The new items added to the WIA-R since Study 1, LOS3 ("Co-workers outside my generation tend to work differently than co-workers my age do"), LOS4 ("Co-workers outside my generation usually talk about things that don't interest me"), and WIR4 ("In my workplace, qualified younger workers tend to be overlooked for promotions"), correlated with other items in the target range 53 percent, 95 percent, and 53 percent of the time, respectively.

Table 8

Study 2: Pairwise Interitem Correlations of WIA-R Items

	WIR1	WIR2	WIR3	WIR4	PA1	PA2	PA3	PA4	LOS1	LOS2	LOS3	LOS4	WGI1	WGI2	WGI3	WGI4	IC1	IC2	IC3	IC4
WIR1	1	.55	.40	.17	.23	.26	.20	.31	.31	.25	.19	.25	.20	.30	.32	.27	.17	.10	.09	.05
WIR2	.55	1	.60	.22	.27	.21	.23	.33	.38	.21	.08	.29	.10	.18	.31	.21	.22	.12	.16	.13
WIR3	.40	.60	1	.34	.24	.24	.27	.33	.40	.19	.13	.21	.14	.25	.36	.25	.21	.14	.15	.13
WIR4	.17	.22	.34	1	.10	.08	.12	.28	.30	.07	.21	.20	.20	.24	.10	.10	.17	.10	.10	.04
PA1	.23	.27	.24	.10	1	.56	.52	.20	.27	.21	.02	.22	.24	.32	.34	.34	.32	.30	.32	.19
PA2	.26	.21	.24	.08	.56	1	.52	.21	.28	.16	*.01*	.15	.22	.34	.60	.49	.26	.21	.24	.20
PA3	.20	.23	.27	.12	.52	.52	1	.20	.33	.23	.00	.23	.24	.30	.30	.37	.29	.26	.33	.17
PA4	.31	.33	.33	.28	.20	.21	.20	1	.33	.21	.23	.33	.06	.17	.20	.23	.25	.21	.18	.11
LOS1	.31	.38	.40	.30	.27	.28	.33	.33	1	.32	.23	.41	.17	.25	.32	.30	.22	.22	.25	.16
LOS2	.25	.21	.19	.07	.21	.16	.23	.21	.32	1	.42	.36	.16	.17	.19	.24	.17	.18	.24	.16
LOS3	.19	.08	.13	.21	.02	*.01*	.00	.23	.23	.42	1	.26	.18	.17	.09	.16	.06	.09	.15	.06
LOS4	.25	.29	.21	.20	.22	.15	.23	.33	.41	.36	.26	1	.08	.16	.15	.20	.19	.20	.26	.20
WGI1	.20	.10	.14	.20	.24	.22	.24	.06	.17	.16	.18	.08	1	.39	.27	.27	.12	.08	.08	.04
WGI2	.30	.18	.25	.24	.32	.34	.30	.17	.25	.17	.17	.16	.39	1	.40	.42	.19	.21	.24	.15
WGI3	.32	.31	.36	.10	.34	.60	.30	.20	.32	.19	.09	.15	.27	.40	1	.55	.28	.20	.19	.20
WGI4	.27	.21	.25	.10	.34	.49	.37	.23	.30	.24	.16	.20	.27	.42	.55	1	.22	.18	.22	.13
IC1	.17	.22	.21	.17	.32	.26	.29	.25	.22	.17	.06	.19	.12	.19	.28	.22	1	.58	.42	.37
IC2	.10	.12	.14	.10	.30	.21	.26	.21	.22	.18	.09	.20	.08	.21	.20	.18	.58	1	.61	.42
IC3	.09	.16	.15	.10	.32	.24	.33	.18	.25	.24	.15	.26	.08	.24	.19	.22	.42	.61	1	.37
IC4	.05	.13	.13	.04	.19	.20	.17	.11	.16	.16	.06	.20	.04	.15	.20	.13	.37	.42	.37	1
%	79	68	74	53	79	74	79	89	100	95	53	95	58	100	79	84	84	58	79	58

Note: Correlations outside of desired range are shaded in gray. Negative values are italicized. Values in bottom row show percent of correlations for each item in desired range.

Corrected item-total correlations ranged from .287 (LOS3: “Co-workers outside my generation tend to work differently than co-workers my age do”) to .532 (WGI3: “I am able to communicate effectively with workers of different generations”). Only LOS3’s item-total correlation of .287 was below the generally accepted minimum of .30 (cf. Goodwin & Goodwin, 1999), but since it correlated with other items in the desired range 53 percent of the time, it was retained.

Content Validity

Hypothesis 2a: The proposed five-factor model will fit the sample data better than any of three alternative models, based on nested χ^2 difference analyses through CFA.

Hypothesis 2b: The proposed five-factor model will achieve sufficient relative goodness-of-fit coefficients (GFI, AGFI, NFI, NNFI, CFI > .90; RMSR, RMSEA close to 0).

Having used exploratory factor analysis (EFA) in Study 1 to build a model, that theorized model’s structural validity was tested in Study 2 through the use of confirmatory factor analysis (CFA), where a model is hypothesized *a priori* and then is evaluated as a fit to the data. Before going into detail about the model applied in this study, however, a discussion of the nature of the data to be analyzed is required.

CFA, if applied in the traditional maximum-likelihood (ML) structural equation modeling framework, assumes that sample data are continuous and drawn from a multivariately normally distributed population (Finney & DiStefano,

2006). In the current study, data are expected to be normal and will be screened as part of the psychometric evaluation mentioned in the previous section. However, with only a four-point Likert-type response scale utilized, data from the current study could be considered ordinal, “coarse” (Bollen, 1989, p. 433), and not continuous.

Researchers (e.g., Bollen, 1989; Dolan, 1994; Muthén & Kaplan, 1985) have generally agreed that response scales with five or more categories may be treated as continuous without noticeable detriment to fit indexes, but ones with four or less response choices, even if normally distributed, are likely to suffer from attenuated Pearson product-moment correlations and biased fit indexes, parameter estimates, and standard errors (Finney & DiStefano, 2006). Therefore, when utilizing any kind of structural equation modeling, including CFA, with data stemming from four-point response scales, it is necessary to avoid or account for these biases.

Finney and DiStefano (2006) elaborate upon and evaluate four methods that have been developed to deal with nonnormal or categorical data in structural equation modeling. Two of the methods have to do with alternative methods of estimation that do not make the normal distributional assumptions of ML; they are both based on weighted least squares (WLS) estimation, which is an asymptotically distribution-free (ADF) estimator. The first method, known as ADF/WLS, involves inverting an asymptotic covariance matrix, which can grow very large as more observed variables are added, and often fails to converge

without large sample sizes. The second method entails the use of WLS estimation as well, but uses robust estimators known as WLSM, WLSMV (both originated by Muthén, 1993) and DWLS (Jöreskog, 1990) that reduce the computational intensity and required sample size by focusing on diagonal elements of the weight matrix rather than the entire matrix. WLSM and WSLMV also make use of scaling adjustments to χ^2 and standard errors similar to the next strategy. This third method involves adjusting χ^2 values, standard errors, and fit indexes based on the amount of non-normality in the data, while typically still using an ML estimation framework, and is known as the Satorra-Bentler (S-B) scaling procedure. Use of the S-B correction with categorical data has been shown to produce more accurate χ^2 and standard errors than ML by itself (Green et al., 1997), but since it still relies on ML estimation, parameters are not adjusted for attenuation due to the categorical nature of the data. The fourth method, bootstrapping, adjusts the sampling distribution used to compute probability values for a χ^2 generated by an ML estimation through repeated resampling from the observed data. This method is more appropriate for continuous non-normal data than for categorical data.

Based on an evaluation of the above four methods of handling non-normal or categorical data, Finney and DiStefano suggest using a robust WLS estimator when dealing with approximately normally distributed or moderately non-normal ordered categorical data with less than five categories. The four-point response scale in the WIA-R fits that description, and LISREL's Diagonal Weighted Least

Squares (DWLS; Jöreskog, 1990) estimation[3], was employed in performing the CFA below.

In traditional CFA based on models with normal data, the difference between chi-square goodness-of-fit statistics of nested models is computed by subtracting the chi-square statistic and corresponding degrees of freedom of a less constrained model from a more constrained (nested) model, and then finding the statistical significance of that chi-square difference value (Kline, 2005). However, when CFA employs S-B scaled chi-square goodness-of-fit statistics, as generated by LISREL in DWLS estimation for nonnormal data, it is inappropriate to simply subtract the S-B scaled chi-squares of nested models (Satorra, 2000). Instead, the Satorra-Bentler (S-B) Scaled Difference Chi-Square Statistic (S-B $\Delta\chi^2$) should be calculated, which utilizes correction factors in nested models based on each model's S-B Scaled Chi-Square and Normal Theory Weighted Least Squares (NTWLS) Chi-Square statistics, and corresponding degrees of freedom (Satorra & Bentler, 2001).

As explained in Chapter 8, the WIA-R contains 20 items (17 from the WIA and three new items), which are theorized to fit into five subscales of four items each. The model to be tested in Study 2 is diagrammed in Figure 1. Each hypothesized subscale was expected to be a latent variable underlying four measured indicator variables (the items in that subscale). Each indicator variable

[3] DWLS and robust WLS estimation procedures are generally considered interchangeable (Wang, 2005).

was assumed to have variation based on its latent variable and unexplained unique error. The five latent variables were allowed to correlate with each other, based on the idea that the subscales measure different but related concepts within a workplace's intergenerational atmosphere. Also, in Study 1, an exploratory second-order factor analysis confirmed the subscales were related; therefore it is appropriate to expect them to be oblique in Study 2.

Fit of the proposed five-factor oblique model was tested both incrementally and through relative goodness-of-fit indexes. To test incremental fit, the S-B χ^2 value of the five-factor oblique model was compared via the Satorra-Bentler Scaled Difference Test to three alternative models (AM), each of which was nested within the proposed model: 1) A single-factor model (AM1, see Figure 2) where one latent variable explains variance in each of the 20 measured variables; 2) A two-factor model (AM3; see Figure 3) where one latent variable underlies the four IC indicators, and a second latent variable underlies the remaining 16 indicators (the reason for this division being that the IC items are answered on a frequency scale and the other items on a Likert-type agreement scale), and 3) a five-factor orthogonal model (AM3; see Figure 4) with the same latent variables as in the proposed model, but with correlations between latent variables fixed to equal zero.

All model's goodnesses of fit were also evaluated through indexes of relative fit including Jöreskog and Sörbom's (1989) goodness-of-fit (GFI) and adjusted-goodness-of-fit (AGFI); Bentler and Bonnett's (1980) normed fit (NFI)

and non-normed fit (NNFI) indexes; and Bentler's (1990) normed comparative fit (CFI) index. To be considered adequate, the proposed model should have a score of at least .90 (Bentler & Bonnett) on most of these indexes, the values of which may range from zero to one, as they are measures of how much better the model fits the data than one with no common factors. Root-mean square residual (RMSR) and root-mean square error of approximation (RMSEA), which measure the average magnitude of residuals produced by a particular model, were examined as well. RMSR and RMSEA values should be close to zero.

Alternative Model 1 (AM1). Testing the one-factor model (see Figure 5) resulted in a mostly unacceptable fit to the data, as expected: S-B $\chi^2(170) = 1077.50$, $p < .0000001$; GFI = .932; AGFI = .916; NFI = .933; NNFI = .939; CFI = .946; RMSR = .109; RMSEA = .0966. The global WIA-R latent variable correlated significantly with each item; standardized factor loadings ranged from .68 (PA1: "I feel comfortable when co-workers outside my generation try to make conversation with me.") to .29 (LOS3: "Co-workers outside my generation tend to work differently than co-workers my age do.").

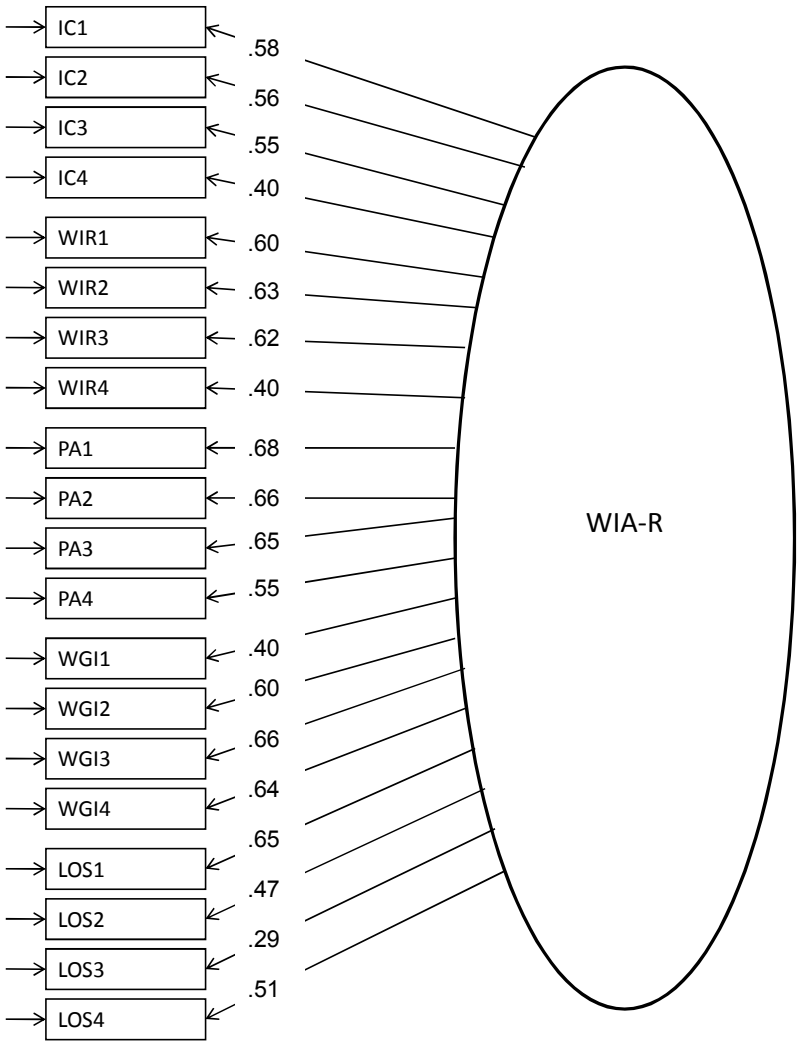

Figure 5. AM1 with standardized path coefficients.

Alternative Model 2 (AM2). Testing an oblique two-factor alternative model (see Figure 6) with one latent variable reflecting frequency items (the IC subscale) and one latent variable reflecting agreement items (the other four subscales) resulted in improved fit statistics than those of AM1, but still left room

for improvement: S-B $\chi^2(169) = 757.10$; GFI = .960; AGFI = .950; NFI = .961; NNFI = .971; CFI = .974; RMSR = .0898; RMSEA = .078. The two latent variables correlated significantly with each other at .54, and significantly with each of their hypothesized measured variables. The IC latent variable's standardized factor loadings were high (ranging from .56 to .80) with its indicators, suggesting that those items should be conceptualized as a subscale. The standardized factor loadings of the other latent variable on its 16 measured variables were relatively similar to those in AM1 (ranging from .29 to .69), suggesting finer divisions among those items may be an improvement, as expected.

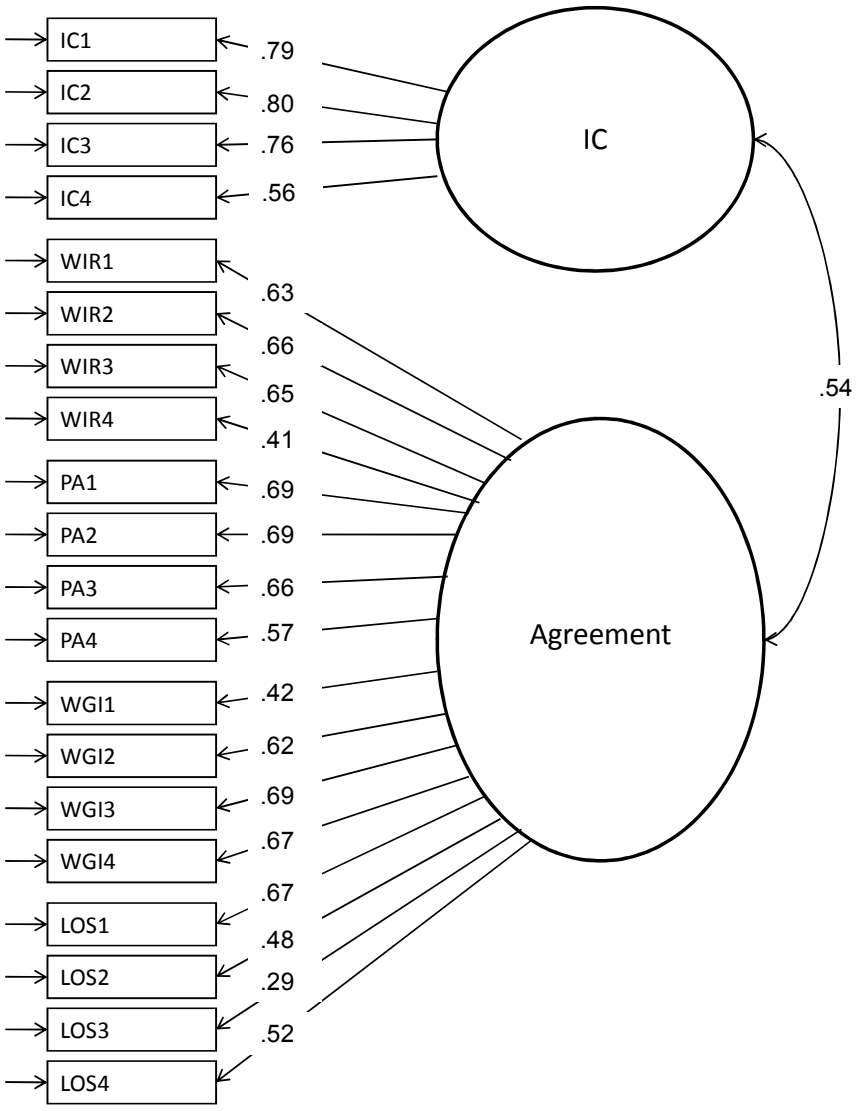

Figure 6. AM2 with standardized path coefficients.

Alternative Model 3 (AM3). A measurement model with orthogonal latent variables (see Figure 7) based on the five hypothesized subscales served as the third alternative model. Latent variables were not allowed to correlate with each other in this model, in order to test the idea that the five subscales may be best conceptualized as unrelated. The fit of this model was largely unsatisfactory: S-B $\chi^2(170) = 849.09$, $p < .000001$; GFI = .671; AGFI = .594; NFI = .675; NNFI = .647; CFI = .684; RMSR = .261; RMSEA = .0836. Standardized factor loadings increased, however, compared to AM1 and AM2, providing further credence for utilizing five subscales.

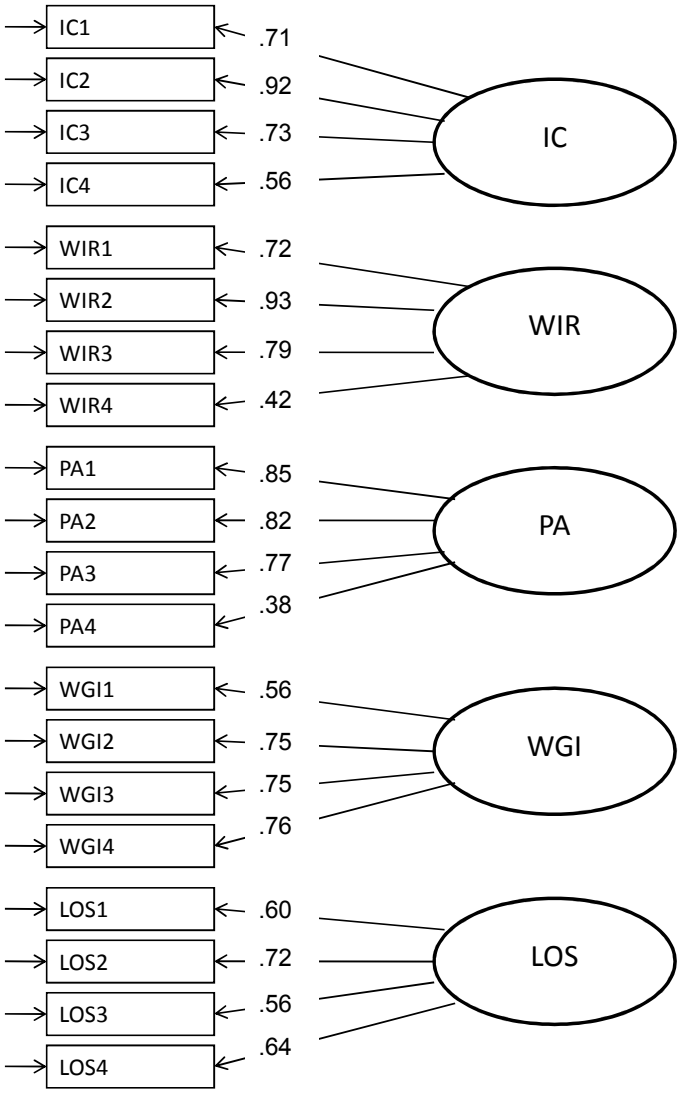

Figure 7. AM3 with standardized path coefficients.

Proposed Five-Factor Model. The hypothesized model was similar to AM3, with the exception that the five latent variables would be allowed to correlate, reflecting that the five subscales of the WIA-R should be considered related to one another. Testing this five-oblique-factor model (see Figure 8) resulted in a superior fit to the data compared to any of the previous models; however, comparing its S-B $\chi^2(160)$ of 377.34 with those of AM1 and AM3 resulted in negative S-B $\Delta\chi^2$ values: -5009.83 versus AM1 and -550.25 versus AM3. Negative S-B $\Delta\chi^2$ values are improper and may be an indication that the nested model's fit is exceedingly deviant from that of the true model (Satorra & Bentler, 2001). In this case, deviance in nested models could be considered acceptable, since it suggests that AM1 (one global latent variable) and AM3 (five orthogonal latent variables) are extremely badly fitting models compared to our target model of five oblique latent variables. AM2, with two oblique latent variables, may have been the only reasonable comparison for the target model, since it involved more than one latent variable and allowed those latent variables to correlate, similarly to the target model. The target model's positive S-B $\Delta\chi^2(9)$ of 668.34 showed it to be a significant improvement in fit compared to AM2, $p <$ .000001, and its fit indices were superior compared to those of all three prior models (see Table 9): GFI = .978; AGFI = .971; NFI = .978; NNFI = .989; CFI = .991; RMSR = .0684; RMSEA = .0487. The five latent variables in this model

were all significantly correlated with one another, ranging from .32 (between the IC and WIR subscales) to .81 (between the WGI and PA subscales). Standardized factor loadings between each latent variable and its respective measured variables were also all significant.

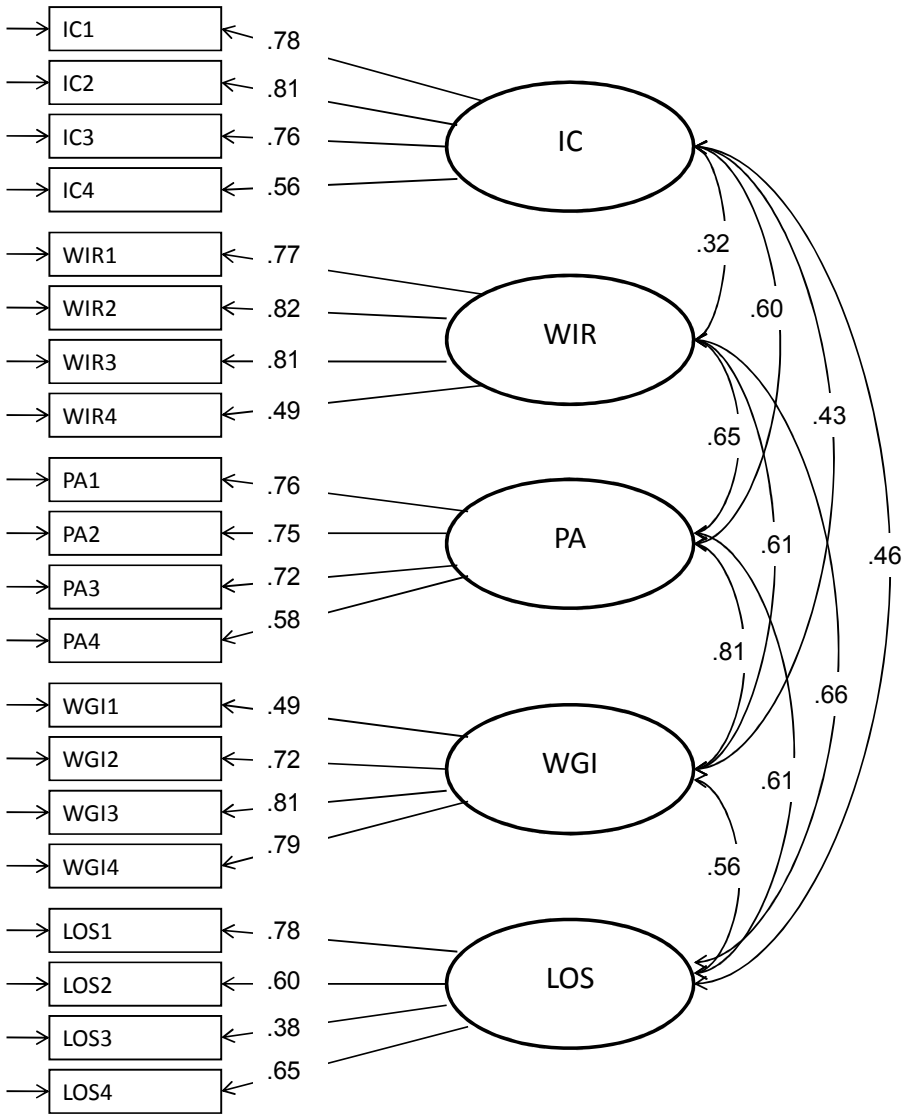

Figure 8. Target five-factor oblique model with standardized path coefficients.

Table 9.

Study 2: Fit Statistics of Structural Equation Models

Model	df	S-B χ^2	NTWLS χ^{2*}	GFI	AGFI	NFI	NNFI	CFI	RMSR	RMSEA
Structural Validity										
AM1	170	1077.51	3025.34	.932	.916	.933	.939	.946	.109	.097
AM2	169	757.10	2220.73	.960	.950	.961	.971	.974	.090	.078
AM3	170	849.09	2297.31	.671	.594	.675	.647	.685	.261	.084
Target	160	377.34	1134.58	.978	.971	.978	.989	.991	.068	.049
Convergent Validity (All Pts.)										
Alternative	346	814.82	3633.29	.932	.921	.935	.948	.953	.102	.049
Target	343	862.31	2582.61	.945	.935	.947	.962	.965	.092	.054
Convergent Validity (Older Pts.)										
Alternative	346	615.99	3134.40	.910	.894	.909	.944	.949	.120	.053
Target	343	572.98	1884.72	.927	.914	.927	.963	.966	.106	.049
Convergent Validity (Younger Pts.)										
Alternative	346	560.77	2400.86	.930	.918	.931	.961	.964	.106	.047
Target	343	597.19	1699.12	.938	.927	.940	.969	.972	.100	.052
Discriminant Validity										
Alternative	401	1289.38	5498.65	.947	.938	.952	.962	.965	.101	.062
Target	402	1282.53	8096.55	.939	.929	.944	.954	.957	.107	.062

*Normal Theory Weighted Least Squares χ^2 for use in Satorra-Bentler Scaled χ^2 Difference (S-B $\Delta\chi^2$) equation (Satorra & Bentler, 2001).

The relative and absolute goodness-of-fit characteristics of the target model above, compared to alternative models, supported Hypotheses 2a and 2b, confirming the content validity of the WIA-R and its multidimensional conceptualization as five related subscales: Workplace Intergenerational Retention, Positive Affect, Lack of Stereotypes, Workplace Generational Inclusiveness, and Intergenerational Contact.

Criterion Validity

Hypothesis 3: With job satisfaction, length of service, and age accounted for, scores on the WIA-R will be significant predictors of whether participants are mentors or not, based on logistic regression analysis.

In Study 1, criterion groups were established through answers to the question “Do you mentor any of your co-workers?” Participants answering “yes” were classified as mentors, and those answering “no” were classified as non-mentors. The hypothesis that mentors would score higher on the WIA than non-mentors was confirmed by the results of a between-subjects *t*-test comparing the two groups, but a series of ANCOVAs with age and job satisfaction as covariates weakened the difference between mentors and non-mentors in WIA scores, especially when participant age was accounted for.

In Study 2, mentors and non-mentors were again used as criterion groups, but rather than seeking to establish criterion validity through seeking differences between groups via *t*-tests, ANOVAs, or ANCOVAs, logistic regression analysis

was used to test the predictive utility of WIA-R scores in discriminating mentors from non-mentors. Logistic regression allows for measure of impact of a predictor on the odds of being in a target group, while statistically adjusting for both continuous and categorical other predictors in the model (Wright, 1995).

In this model, age, length of service, and job satisfaction levels were included as additional predictors of mentor group membership. WIA-R scores were calculated by summing the means of its five subscales, each of which could range from 1 to 5. Age, in contrast to Study 1 where it was split into three levels, was included as a continuous predictor variable in regression analyses. Similarly to Study 1, job satisfaction, as measured by the JSS, was a continuous predictor variable. Length of service remained a categorical predictor variable, but multinomial (less than 6 months, 6 to 12 months, 1 to 3 years, 4 to 6 years, 7 to 10 years, 11 to 20 years, more than 20 years) instead of dichotomous (in Study 1 the categories were 3 years or less and 4 years or more). For the length of service predictor variable, the shortest length (less than 6 months) was used as a reference variable. The criterion variable in this analysis was whether participants were mentors or not, with mentors as the target group.

The criterion variable was regressed upon all four predictor variables simultaneously. In this model (see Table 10), age, length of service, and WIA-R scores were all significant predictors of mentorship, while JSS scores were not. The odds ratios for each significant predictor were revealing. Length of service proved to be the strongest predictor of mentorship, with odds ratios compared to

its reference group ranging between 239 percent (for employees who had worked six to twelve months) and 491 percent (for employees who had worked more than 20 years). In other words, if someone had worked between six and twelve months at that organization, they were nearly two and a half times more likely to have mentored someone than people who had worked there less than six months, and if someone had worked there for more than 20 years, they were nearly five times more likely to have mentored another worker than someone who had just started less than six months ago. Age was not nearly as strong a predictor as the length of time somebody had been employed at that organization. For every year an employee aged, the odds of them being a mentor increased by 3 percent. Most relevant to this study was the impact of WIA-R scores: for every one-unit increase in WIA-R scores, the odds of them being a mentor increased by 19 percent. The finding that WIA-R scores were significant predictors of whether an employee was a mentor or not, even with job satisfaction, age, and length of service accounted for, supported Hypothesis 3 and bolstered the criterion validity of the WIA-R scale.

Table 10.

Summary of Logistic Regression Analysis for Variables Predicting Whether Employees Are Mentors (n = 506; 281 Mentors, 225 Non-Mentors).

Predictor	*B*	*SE B*	e^B	e^B *95% CI*
JSS	.024	.021	1.02	.98-1.07
Age	.029	.008	1.03***	1.01-1.04
LOS: 6 to 12 Months	.87	.36	2.38*	1.18-4.81
LOS: 1 to 3 Years	1.33	.32	3.78***	2.03-7.05
LOS: 4 to 6 Years	1.10	.37	2.99**	1.44-6.18
LOS: 7 to 10 Years	1.38	.40	3.98**	1.81-8.77
LOS: 11 to 20 Years	1.22	.39	3.39**	1.57-7.31
LOS: More than 20 Years	1.59	.51	4.91**	1.81-13.30
WIA-R	.172	.059	1.19**	1.06-1.33
Constant	-5.30			
χ^2		60.45		
df		9		

Note: LOS = Length of Service, with “less than 6 months” as reference category. e^B = exponentiated *B* or Odds Ratio.

*$p < .05$. **$p < .01$. ***$p < .001$.

Construct Validity: Convergent Validity

Hypothesis 4a: A factor model with distinct WIA-R, St-Y, and St-O latent variables will fit the data no better than a model with one global latent variable, thus demonstrating convergence between the WIA-R and Stereotypes measures.

In Study 1, convergent and discriminant validities were tested by examining the relationship between WIA scores and scores on measures of job satisfaction (JSS) and perceptions of older workers (AWS). Correlational analyses confirmed the hypotheses that WIA scores would be moderately (*r* between .4 and .6) related to both job satisfaction (*r* = .524) and perceptions of older workers (*r* = .562). Also, the difference between the two correlations showed that WIA scores were more strongly associated with age-based perceptions than with job satisfaction, although the difference was not large.

Study 2 sought to improve upon the tests of convergent validity utilized in Study 1 by using different measures of age-based perceptions (the St-Y and St-O scales described in Chapter 8), and by making use of structural equation modeling in testing models featuring combined versus separated focal and criterion constructs. Using the St-Y and St-O scales improved upon Study 1 because they involved stereotypes about both older and younger workers, as opposed to the AWS scale, which only concerned older workers. The second improvement moved beyond the “eyeball” method of comparing correlations used in Study 1, which neglected to take into account the reliabilities of the measures

involved, potentially resulting in attenuated observed correlations (Bryant, King, & Smart, 2007; Bollen, 1989).

A high score on either Stereotypes scale indicated endorsement of negative stereotypes about that target group. The St-Y and St-O scales achieved sufficient reliabilities, with Cronbach's α of .82 and .75, respectively. Since someone who tends to agree with negative age-based generalization about either group is likely to score lower on the WIA-R than someone who does not endorse negative age-based generalizations, a strong inverse relationship was expected between scores on both St-O and St-Y scales and the WIA-R. This expected strong relationship between workplace intergenerational atmosphere and age-based negative stereotype endorsement would represent convergent validity. Testing combined versus separated models via structural equation modeling, as explained by Bryant, King, and Smart (2007), attempted to confirm convergence between the WIA-R and Stereotype scales.

Through methods similar to what is proposed in the content validity section about CFA, structural equation modeling allows for testing convergent validity by comparing the goodness-of-fit χ^2 values of competing models. In this case, one model (Convergent Validity Alternative Model) involved three latent second-order variables[4] (a second-order WIA-R, St-Y, and St-O; see Figure 9),

[4] Due to restrictions within the LISREL modeling software, St-Y and St-O pseudo-first-order latent variables were utilized to allow WIA-R, St-Y, and St-O to correlate with each other. All variance within St-Y and St-O second-order latent variables were accounted for within their respective pseudo-variables.

and the competing model (Convergent Validity Target Model) merged WIA-R items with St-Y and St-O items, resulting in one global factor (see Figure 10). As with the CFA, robust WLS estimation methods were employed to handle categorical data. The S-B χ^2 values of the two models were then compared via the S-B $\Delta\chi^2$ procedure. To support convergent validity and Hypothesis 4a, it was expected that the Convergent Validity Target Model with one global factor would not be a significantly worse fit to the data than the Convergent Validity Alternative Model differentiating between the focal and criterion measures.

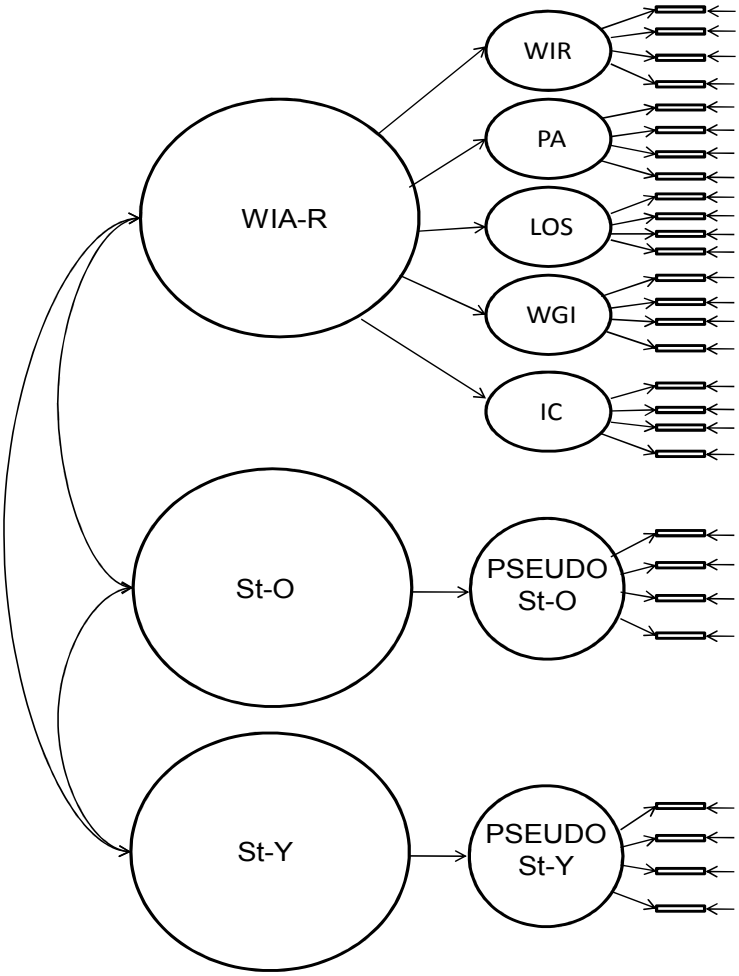

Figure 9. Convergent validity alternative model.

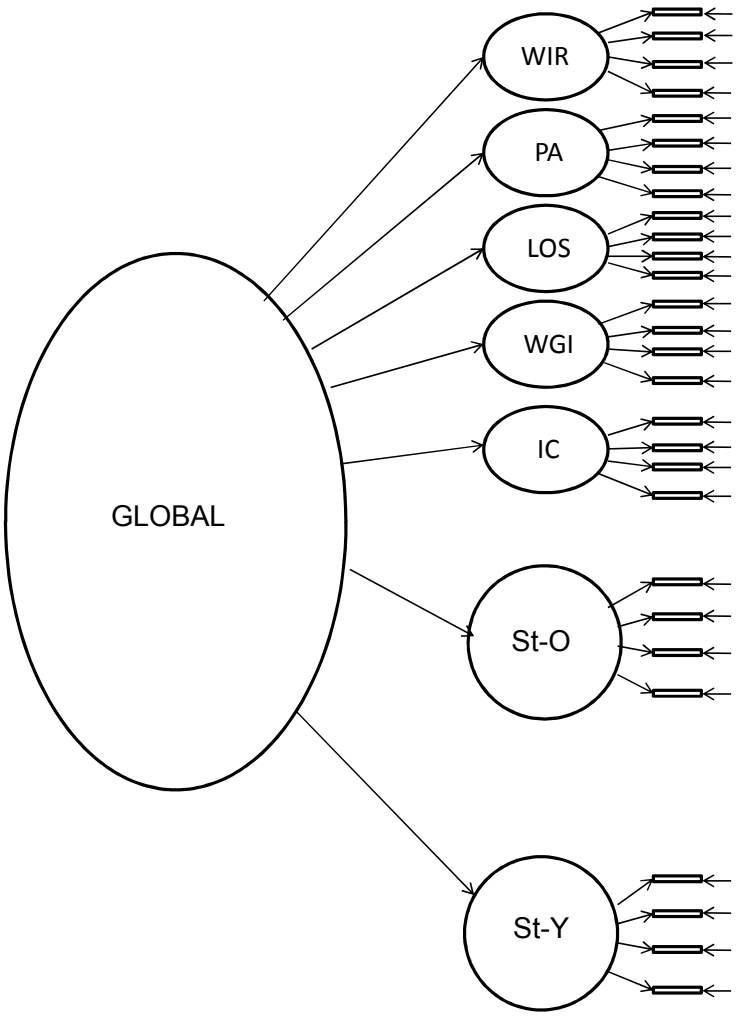

Figure 10. Convergent validity target model.

Testing the Convergent Validity Alternative Model (see Figure 11) showed it to be an adequate fit to the data, S-B $\chi^2(346) = 814.82$; GFI = .932; AGFI = 921; NFI = .935; NNFI = .948; CFI = .953; RMSR = .102; RMSEA = .049. However, the correlations between second-order latent variables WIA-R and St-O and St-Y, while negative, were not as high in magnitude as expected at -.35 and -.32, respectively.

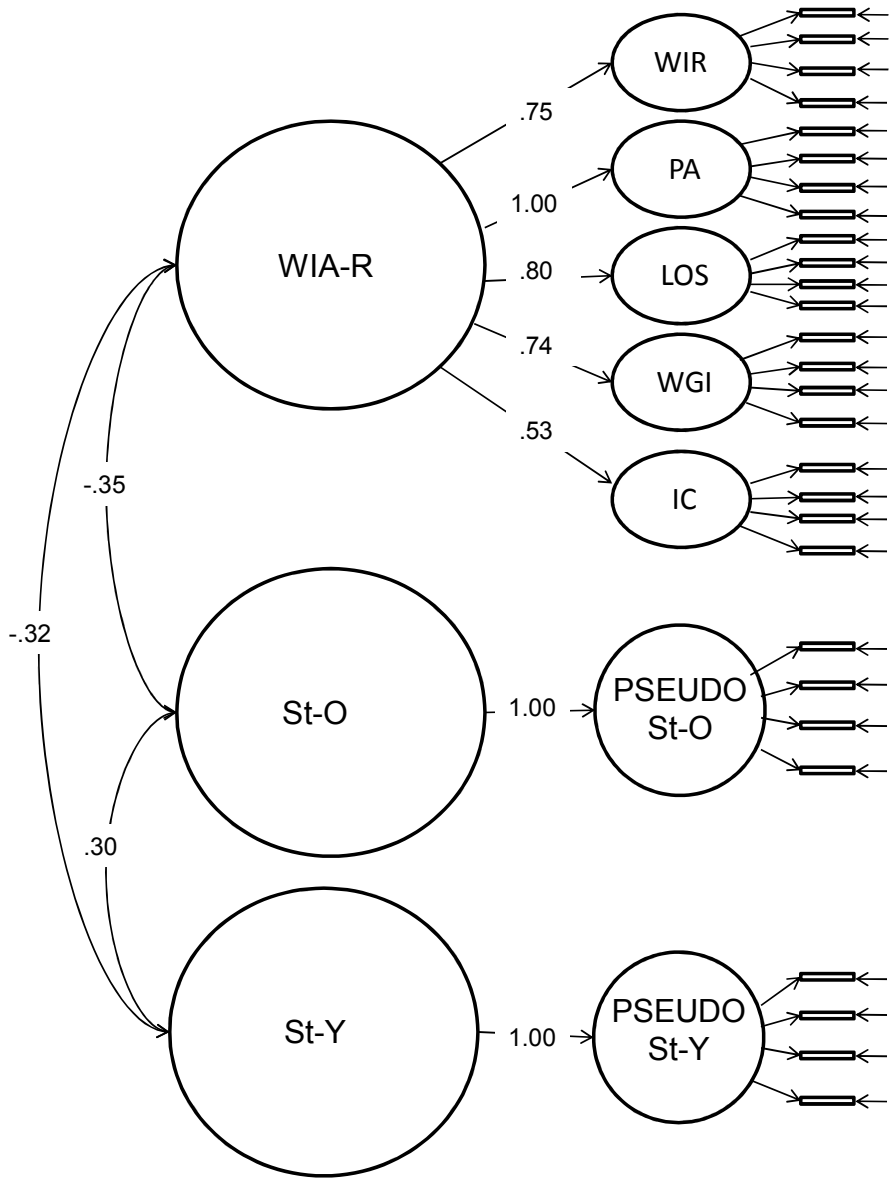

Figure 11. Convergent validity alternative model with standardized path coefficients.

Testing the Convergent Validity Target Model (see Figure 12) produced mostly slightly improved fit statistics compared to the Alternative Model, GFI = .945; AGFI = .935; NFI = .947; NNFI = .962; CFI = .965; RMSR = .092; RMSEA = .054. Its S-B χ^2 of 862.31 with 343 degrees of freedom was not a significantly worse fit to the data than the Alternative Model, S-B $\Delta\chi^2(3) = 6.11$, $p = .11$. This lack of a significant difference in goodness-of-fit between the nested Alternative Model and the more parsimonious Target Model supported Hypothesis 4a and the convergent validity of the WIA-R scale.

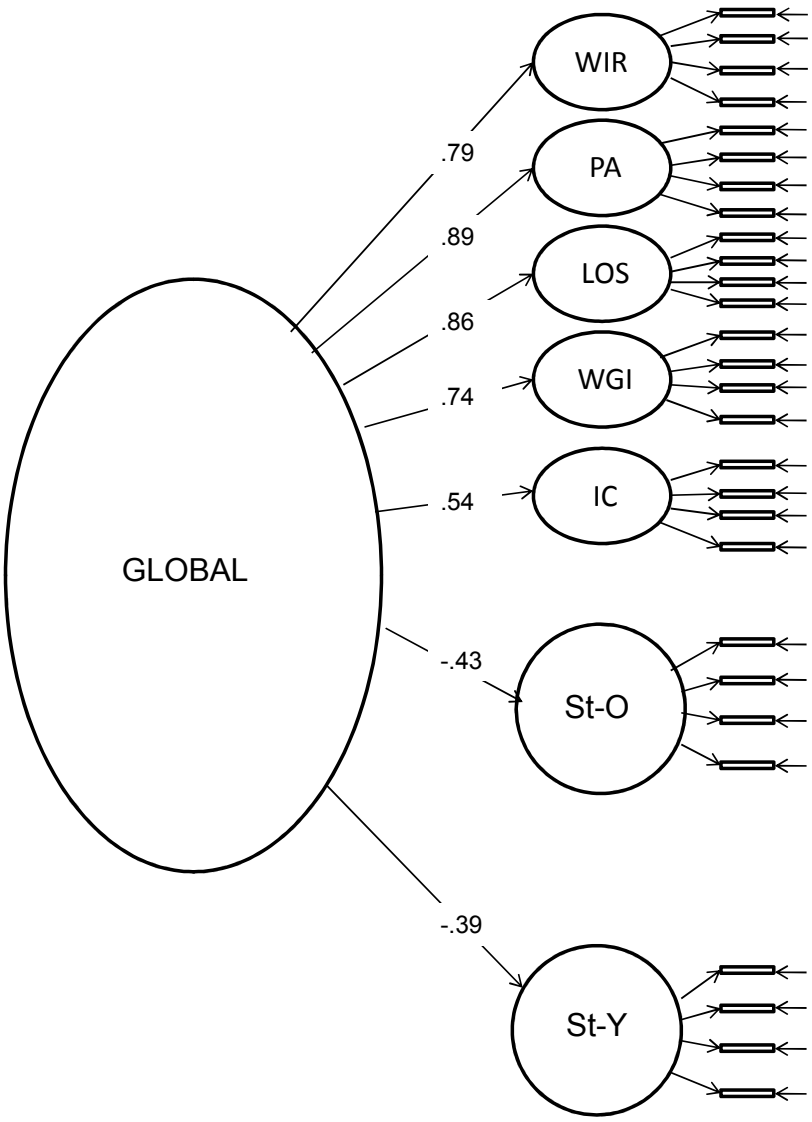

Figure 12. Convergent validity target model with standardized path coefficients.

While the WIA-R's convergent validity was supported in the above analysis, the unexpectedly small correlations between WIA-R scores and St-Y and St-O scales (-.32 and -.35, respectively) suggested further examination of the relationship between the WIA-R and stereotyping scales would be of interest. One factor in the lack of stronger correlations could have been the ages of the participants completing the measures. Namely, older workers might have been more likely than younger workers to endorse negative stereotypes about younger workers (as measured by the St-Y scale), and younger workers more likely than older workers to endorse negative stereotypes about older workers (as measured by the St-O scale). Thus, in a sample containing a wide range of participant ages, it's possible that, within the whole sample, each age ingroup's level of negative outgroup stereotype endorsement was attenuated by that outgroup's level of stereotype endorsement about itself. In effect, the younger workers' level of stereotype endorsement about older workers was weakened by including older workers in that same sample, and vice versa.

The original sample included 573 participants age 18 to 75, with a median age of 43 years. Performing a median split resulted in two approximately equal-sized samples, hereafter known as the *younger group* (*n* = 279, ages 18 to 42) and *older group* (*n* = 282, ages 44 to 75).[5] Similarly to the original convergent

[5] While a median split was admittedly a somewhat coarse way to form two groups, it resulted in larger sample sizes (and therefore better statistical power) than using finer-tuned sampling (such as the older versus younger thirds of the sample). Also, interestingly, workers younger or older than 43 in 2008 were born either later or earlier, respectively, than the year 1965, which is generally regarded as the dividing year between the "Baby Boom" and "Generation X"

validity procedure, competing Alternative and Target Models were then tested for each age group, with the expectation that Hypothesis 4a would be more strongly supported than when testing all ages combined. Specifically, for each age group, the Alternative Model differentiating between the focal and criterion measures should not show a sizable difference in fit compared to the Target Model with one global factor.

Older Group Convergent Validity. Testing the Older Group Alternative Model (see Figure 13) showed it to be an adequate fit to the data, S-B $\chi^2(346) = 615.99$; GFI = .910; AGFI = .894; NFI = .909; NNFI = .944; CFI = .949; RMSR = .120; RMSEA = .053. The correlations between second-order latent variables WIA-R and St-O and St-Y were in line with expectations, as WIA-R's correlations with St-Y and St-O were -.45 and -.21, respectively. The -.45 correlation with St-Y was notable in that it was larger than the prior one from the whole sample (-.32), indicating that there was more shared variance between WIA-R and St-Y scores for older workers than for workers as a whole. This finding, combined with the lower correlation between WIA-R and St-O, suggested that the more older workers perceived a positive intergenerational atmosphere, the less likely they were to endorse negative stereotypes about younger workers, but the relationship was not as strong when endorsing negative stereotypes about older workers (their own group).

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generational cohorts. Therefore, the older sample here consisted of Baby Boomers and older workers ("Traditionalists"), and the younger sample consisted of Generation Xers and younger workers ("Generation Y").

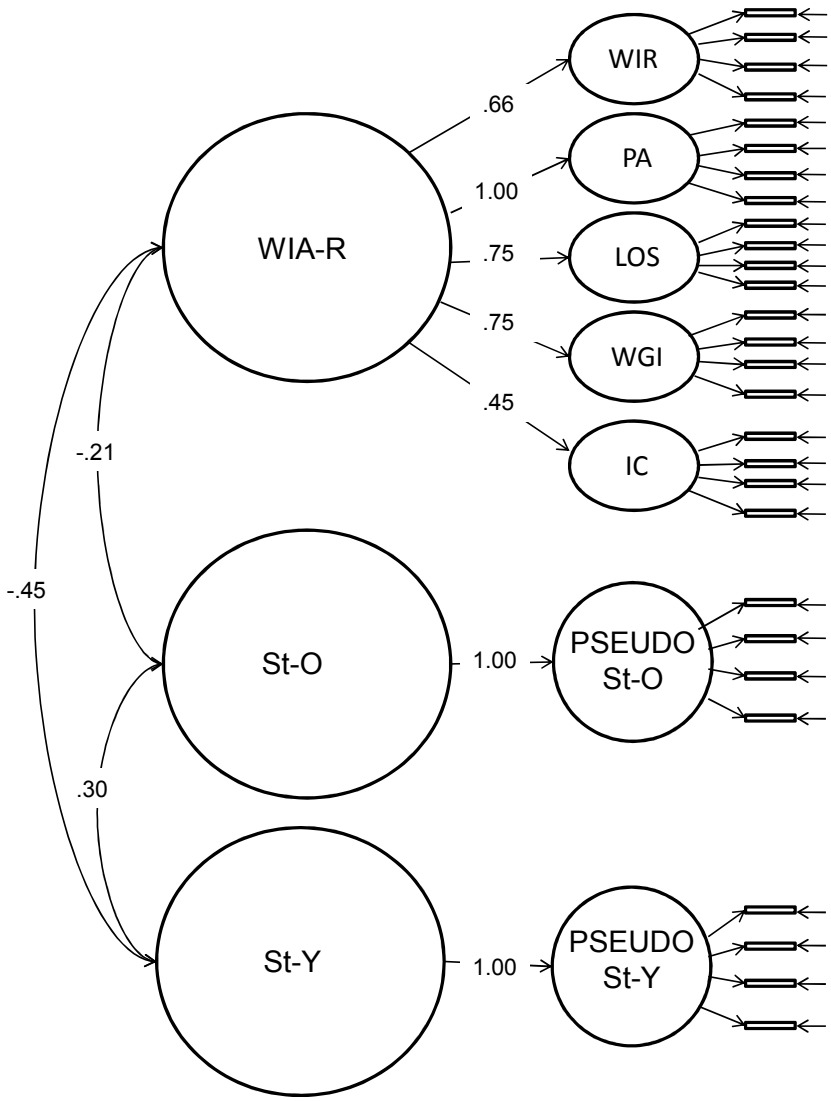

Figure 13. Older group convergent validity alternative model with standardized path coefficients.

Testing the Older Group Target Model (see Figure 14) produced improved fit statistics compared to the Alternative Model; GFI = .927; AGFI = .914; NFI = .927; NNFI = .963; CFI = .966; RMSR = .106; RMSEA = .049. Its S-B χ^2 of = 572.98 with 343 degrees of freedom was not a significantly worse fit to the data than the Alternative Model, S-B $\Delta\chi^2(3) = 5.93$, $p = .11$, supporting Hypothesis 4a and confirming the convergent validity of the WIA-R within a sample of participants age 44 and older.

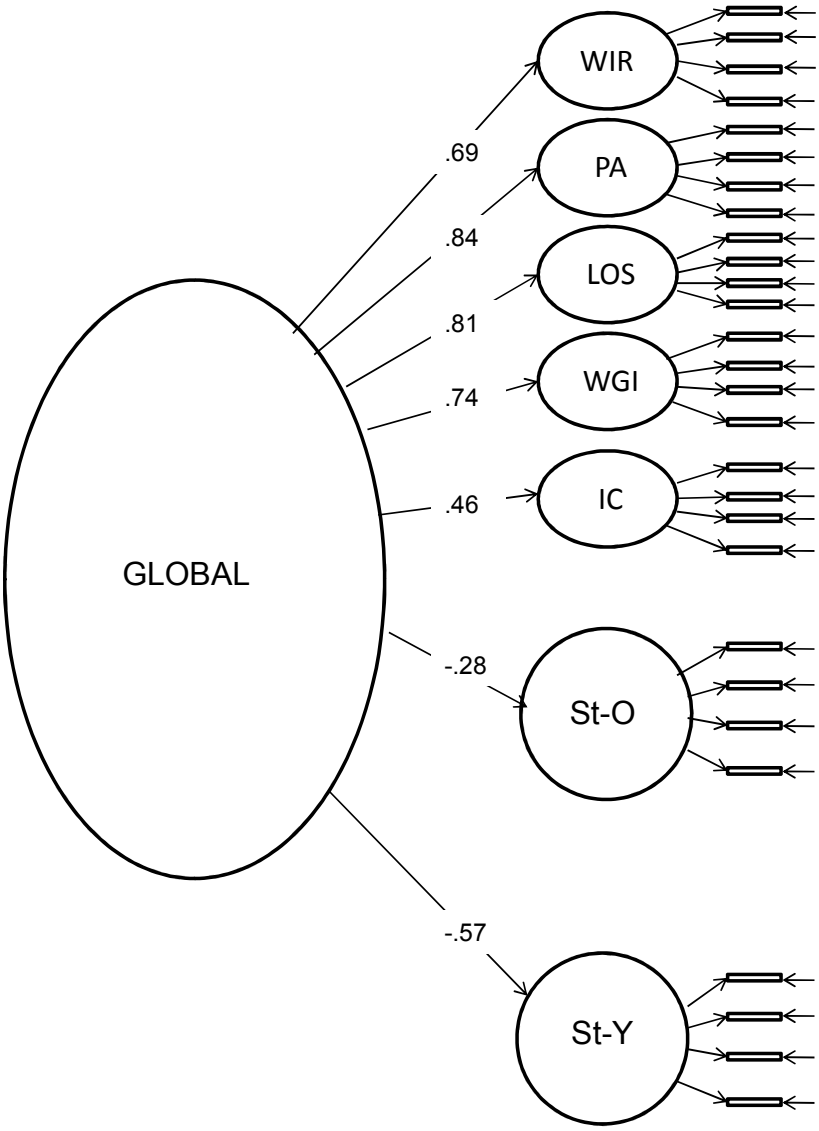

Figure 14. Older group convergent validity target model with standardized path coefficients.

Younger Group Convergent Validity. Testing the Younger Group Alternative Model (see Figure 15) showed it to be an adequate fit to the data, S-B $\chi^2(346) = 560.77$; GFI = .930; AGFI = .918; NFI = .931; NNFI = .961; CFI = .964; RMSR = .106; RMSEA = .047. The correlations between second-order latent variables WIA-R and St-O and St-Y were in line with expectations, as WIA-R's correlations with St-Y and St-O were -.20 and -.46, respectively. Similarly to the older group analysis, the younger group's WIA-R's correlation of -.46 with St-O was notable in that it was larger than the prior one from the whole sample (-.35), indicating that there was more shared variance between WIA-R and St-O scores for younger workers than for workers as a whole. Again, this finding, combined with the lower correlation between WIA-R and St-Y, suggested that the more younger workers perceived a positive intergenerational atmosphere, the less likely they were to endorse negative stereotypes about older workers, but the relationship was not as strong when endorsing negative stereotypes about younger workers (their own group).

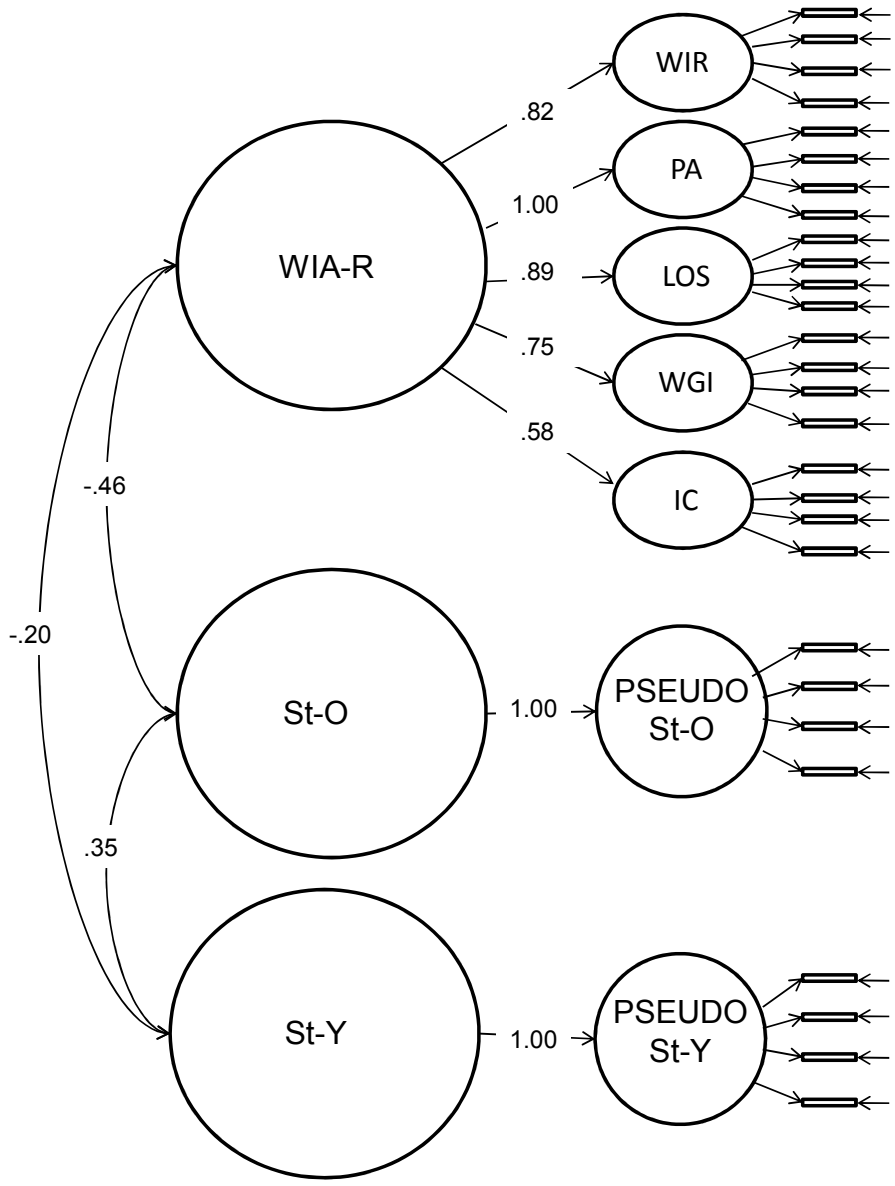

Figure 15. Younger group convergent validity alternative model with standardized path coefficients.

Testing the Younger Group Target Model (see Figure 16) produced mostly improved fit statistics compared to the Alternative Model, matching expectations: GFI = .938; AGFI = .927; NFI = .940; NNFI = .969; CFI = .972; RMSR = .100; RMSEA = .052. The Target Model's S-B χ^2 of 597.19 with 343 degrees of freedom was not a significantly worse fit to the data than the Alternative Model, S-B $\Delta\chi^2(3) = 4.17$, $p = .24$, supporting Hypothesis 4a and further confirming the convergent validity of the WIA-R, this time within a sample of participants age 42 and younger.

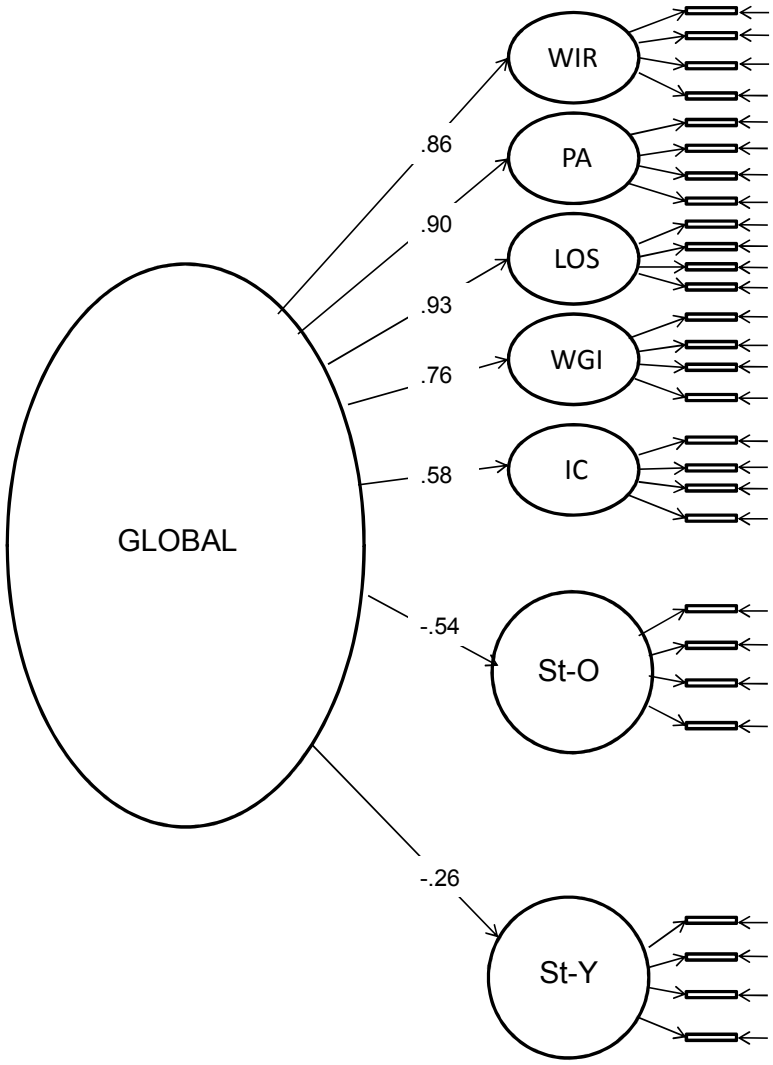

Figure 16. Younger group convergent validity target model with standardized path coefficients.

Construct Validity: Discriminant Validity

Hypothesis 4b: A factor model with distinct WIA-R and JSS latent variables will fit the data significantly better than a model with one global latent variable, thus demonstrating discriminance between the WIA-R and job satisfaction measures.

To test the discriminant validity of the WIA-R scale, the relationship between WIA-R scores and job satisfaction, as measured by the JSS scale, was examined. While the two concepts may be related (and in Study 1 were shown to be), the WIA-R should measure somewhat different constructs than what is assessed on a general job satisfaction measure. This expected lack of a strong relationship between workplace intergenerational atmosphere and general job satisfaction represents discriminant validity. Similarly to how convergence was tested, comparing combined versus separated models via structural equation modeling attempted to confirm discriminance between the WIA-R and JSS measures.

Two competing models were created and tested. One model (Discriminant Validity Target Model) involved two latent variables (a second-order WIA-R and JSS; see Figure 17), and a competing model (Discriminant Validity Alternative Model) merged WIA-R items with JSS items, resulting in one global factor (see Figure 18). Robust WLS estimation methods were again employed to handle categorical data. In this case, after determining each model's goodness-of-fit S-B χ^2 values, it was expected that the model differentiating between the focal and

discriminant measures would show a significant improvement in fit compared to the model with one global factor, thus supporting the WIA-R scale's discriminant validity.

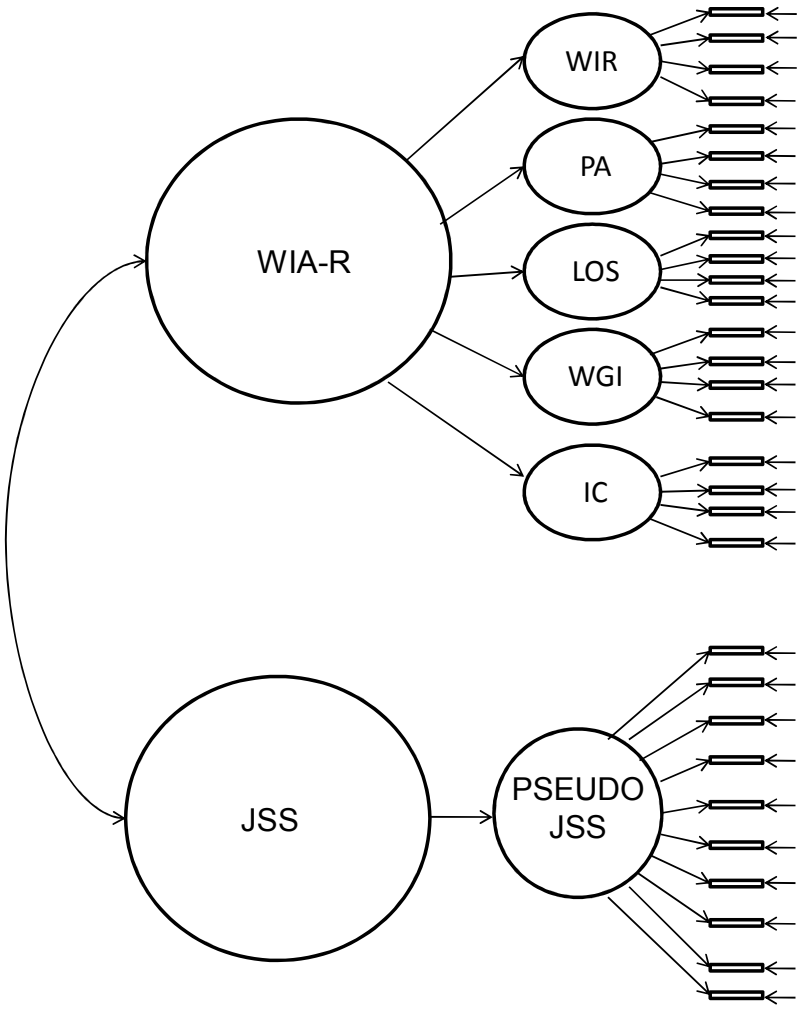

Figure 17. Discriminant validity target model.

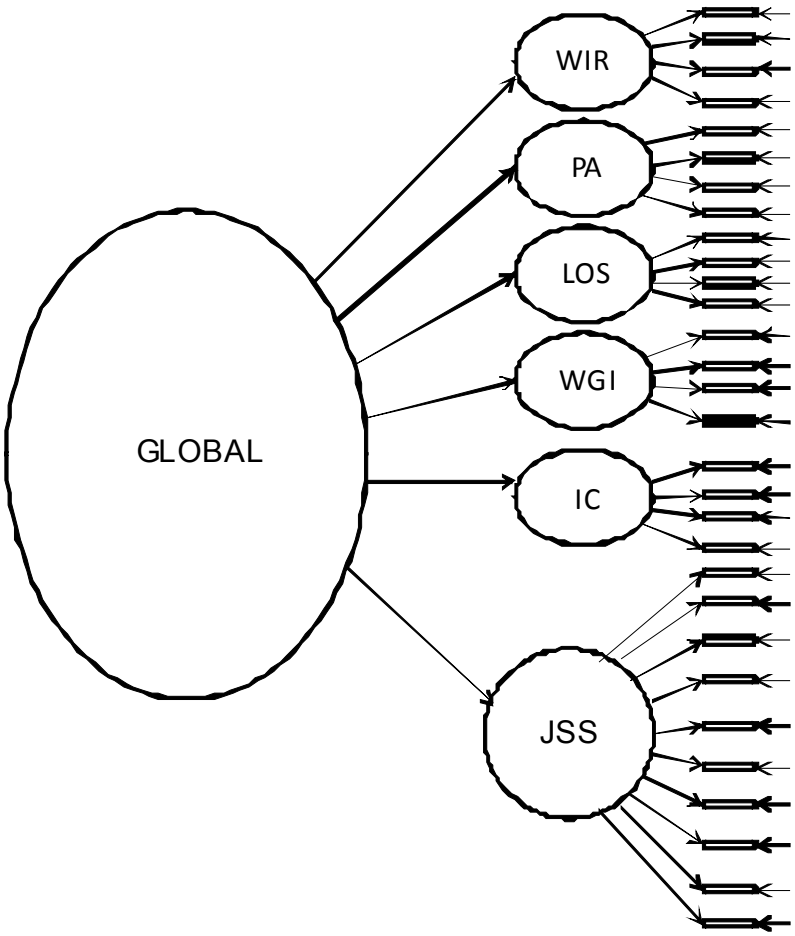

Figure 18. Discriminant validity alternative model.

Testing the Discriminant Validity Target Model with separate but related latent variables (JSS and WIA-R, see Figure 19) showed it to be an adequate fit to the data; S-B $\chi^2(402) = 1282.53$; GFI = .939; AGFI = .929; NFI = .944; NNFI = .954; CFI = .957; RMSR = .107; RMSEA = .062. The correlation between JSS and WIA-R of .58, however, was somewhat high, suggesting that a potential model with one global latent variable (the Alternative Model) might not be a worse fit than the Target Model.

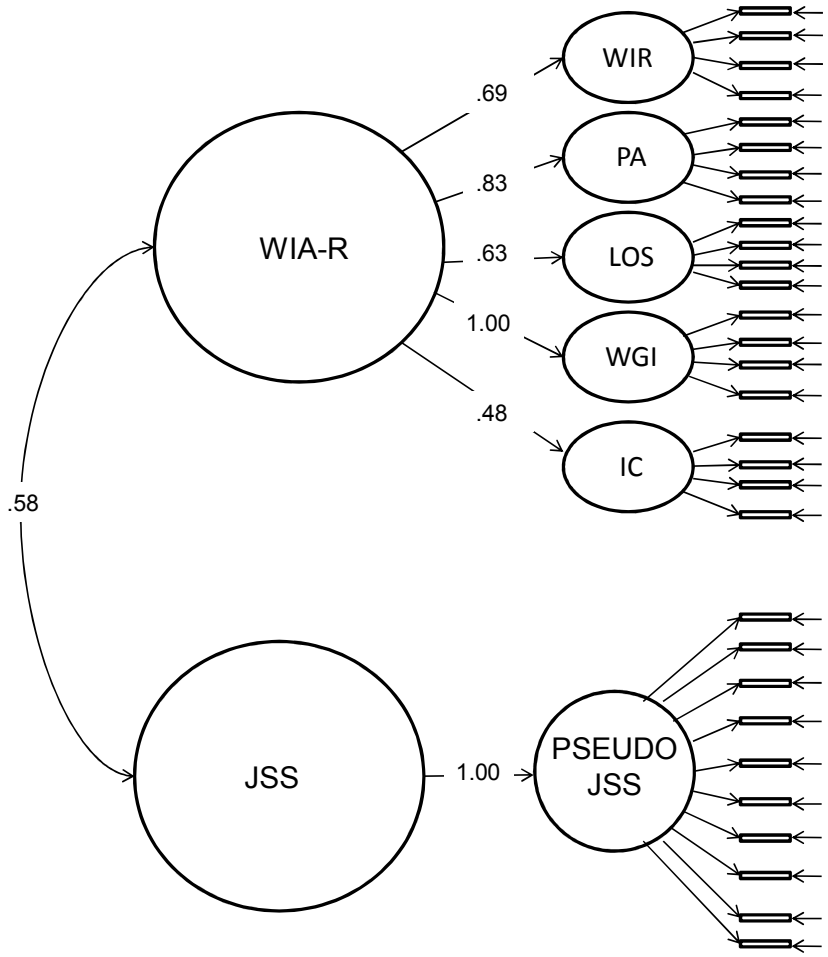

Figure 19. Discriminant validity target model with standardized path coefficients.

Testing the Discriminant Validity Alternative Model (see Figure 20) produced the following fit statistics, which were slight improvements over those of the Target Model: GFI = .947; AGFI = .938; NFI = .952; NNFI = .962; CFI = .965; RMSR = .101; RMSEA = .062. However, its S-B χ^2 of 1289.38 with 401 degrees of freedom resulted in a marginally significantly worse fit compared to the Target Model, S-B $\Delta\chi^2(1) = 3.14$, $p = .08$, fitting with expectations.

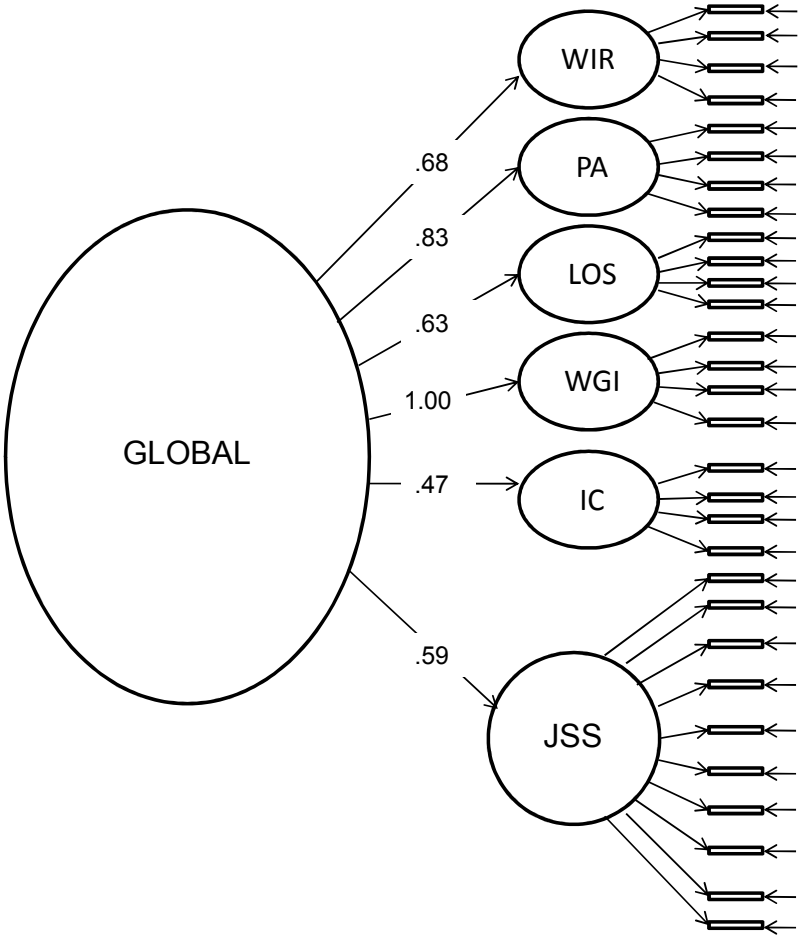

Figure 20. Discriminant validity alternative model with standardized path coefficients.

The small effect of separating the latent variables JSS and WIA-R, compared to keeping them together as one latent variable, combined with the relatively high correlation (.58) between the two latent variables when separated, showed that the constructs are related. In theory, this relationship makes sense, as a person's job satisfaction is likely tied, at least partially, to the positivity of interactions among differently-aged co-workers in that workplace, and vice versa. But are the two concepts better conceived as the same construct, as opposed to separate but related ones? The correlation of .58 equates to an r^2 value of .336, meaning that job satisfaction and workplace intergenerational atmosphere shared 33.6 percent of their variance, and 66.4 percent of each construct's variance was independent of the other construct. Or, in other words, the constructs were approximately twice (66.4/33.6) as independent from one another as they were correlated, providing limited support for Hypothesis 4b and the discriminant validity of the WIA-R.

CHAPTER TWELVE

DISCUSSION

Implications

Together, the findings of Study 1 and Study 2 provide support for the reliability and validity of the Workplace Intergenerational Atmosphere scale. Study 1 established an initial structural framework for the scale as including five subscales, and showed it to be related to attitudes about older workers, job satisfaction, and mentoring. Study 2 elaborated upon Study 1 by attempting to confirm a revised WIA[6] scale's content, structural, criterion, convergent, and discriminant validities.

Study 2's findings supported the replacement of faulty items from the scale used in Study 1 (please see the final version of the WIA scale in Appendix B). The WIA scale includes five related subscales, each of which contains four items. Four of the subscales (Workplace Intergenerational Retention, Positive Affect, Lack of Stereotypes, and Workplace Generational Inclusiveness) contain items asking participants to rate their agreement to various statements. The fifth subscale, Intergenerational Contact, contains items asking participants to rate

[6] From this point onward, unless referring to Study 1, the WIA-R scale will be known as the WIA scale.

the frequency with which they have different types of contact with differently aged workers.

The Workplace Intergenerational Retention subscale reflects the lack of pressure employees might feel to leave their position because of their age, either young or old. The Positive Affect subscale focuses on positive feelings toward co-workers of all ages, and the Workplace Generational Inclusiveness subscale taps into feelings of a common ingroup identity among differently aged workers. The Lack of Stereotypes subscale assesses the degree to which workers fail to make broad age-based generalizations about their co-workers. The Intergenerational Contact subscale shows the amount of cooperative contact workers engage in with peers outside one's generation. The conceptualization of the WIA as five related subscales, rather than one global measure, allows for more precise use by organizations seeking to measure a workplace's intergenerational atmosphere as seen through the eyes of its staff.

The WIA scale's criterion validity was demonstrated by showing a relationship between WIA scores and whether workers mentor other employees. The finding from Study 1 that people who mentor other employees score higher on the WIA scale than employees who do not mentor is not surprising, nor is the finding from Study 2 that for every one-point increase in their WIA scores, participants were 19 percent more likely to be a mentor. Mentoring's strong impact on Intergenerational Contact subscale scores, as found in Study 1, is

understandable as well, since mentoring typically involves the type of cooperative contact shown to reduce prejudice (Dovidio et al., 2003).

Whether a person is a mentor or not is important from an organizational sense as well. Mentorship in the workplace has the potential to benefit the mentor, the mentee, and the organization in general (Ramaswami & Dreher, 2007). Given that a workplace's intergenerational atmosphere influences the extent of mentorship in that workplace, it would be wise for organizations interested in fostering mentoring relationships to measure the age-based dynamics in their workforce through tools such as the WIA scale. This relationship between intergenerational atmosphere and mentorship is a bidirectional one: since mentoring can reduce prejudice through cooperative contact, with less age-based prejudice present, WIA scores should improve.

Job satisfaction and WIA scores shared approximately one-fourth and one-third of their variances in Studies 1 (r = .52) and 2 (r = .58), respectively. The strong relationship between WIA scores and job satisfaction scores, while not providing solid support for the discriminant validity of the WIA scale in Study 2, further emphasizes the importance of maintaining a healthy intergenerational atmosphere in the workplace. This relationship between a positive intergenerational atmosphere and job satisfaction should be of interest both to researchers and organizational leadership. Employee satisfaction is a key indicator of employee retention, productivity, and customer satisfaction (Reichheld, 1996), and human resources professionals and decision-makers

would be wise to recognize that how an employee views the intergenerational atmosphere of an organization impacts her or his overall job satisfaction. This study's findings suggest that the WIA scale is an appropriate tool to measure the intergenerational dynamics of an organization.

The WIA scale is unique in its focus on intergenerational attitudes and atmosphere in a workplace. Existing measures of such constructs are rare. One is more likely to find measures of attitudes toward older workers in the workplace, such as the AWS (Marshall, 1996). Other measures, like the Aging Semantic Differential (ASD; Rosencranz & McNevin, 1969) or the FSA (Fraboni et al., 1990) are relatively widespread, but are intended to measure attitudes toward older adults in general. The WIA scale examines the attitudes in a workplace toward differently aged co-workers, thus involving all ages of employees. By not limiting its scope to older workers, the WIA scale actually is arguably a more appropriate measure of ageism than those that focus on older adults, based on Palmore's (1999) definition of ageism as age-based bias toward any age group.

This study adds to the considerable amount of research done on aging and the workplace by going beyond demographics and focusing on perceptions, attitudes, and atmosphere. Researchers at The Center on Aging & Work at Boston College have gone a similar route in a series of Issue Briefs (James, Swanberg, & McKechnie, 2007a, 2007b). James et al. examined different generations' levels of employee engagement, and found that 55+ workers were more engaged than younger workers, but that older workers perceived that they

were not as likely to be promoted as younger workers were. However, the older employees who did perceive there to be equal chances of promotion were more engaged than those who did not. The significant positive correlations found between WIA scores and job satisfaction in the current research mirrors James et al's findings.

Limitations

Key limitations in both studies relate to the nature of the participants completing the WIA and accompanying measures. The samples consisted of employees of several non-profit seniors housing and services organizations. Because of the organizations' orientations toward serving older adults, it is possible that their employees viewed aging and intergenerational dynamics more positively than the general population. On the other hand, because workers in these environments are involved with older adults needing nursing care, participants in our studies may have been primed by this exposure to common aging stereotypes. Or, the exposure to older adults in long-term care may have elicited a contrast effect, in that employees could easily make a distinction between their co-workers and the residents they serve in their organizations. In that case, participants may perceive their older co-workers more positively since they are not in need of care like the residents they serve. If future research is performed with samples of employees of long-term care organizations, the content of those employees' attitudes about both the residents in their care and their differently-aged co-workers should be examined.

While both samples were workers in long-term care organizations, they were diverse in terms of age, an important factor since the WIA assesses age-related attitudes, and in occupation. Participants ranged in age 18 to 75, and occupations included health care, dining, maintenance, resident services, and administrative services. Nevertheless, as would be expected in a long-term care environment, the majority of participants were health-care workers, such as nurses and certified nurse assistants (CNAs). Participants were not diverse in terms of gender, with women comprising nearly three-fourths of the sample in Study 1 and nearly nine-tenths of the sample in Study 2. Future studies involving the WIA should utilize workforce samples with occupations not highly represented in the current ones, such as in a clerical or retail environment. It would also be beneficial to test the WIA scale's validity in fields disproportionately male, such as physical sciences, law enforcement, or the military.

The construct validity of the WIA scale can still be strengthened. Its convergent and discriminant validities were demonstrated in Study 1 by its larger relationship with the Age and Work Scale than with a job satisfaction scale. In Study 2, it was expected that WIA scores would demonstrate convergence by strongly negatively correlating with measures of stereotypes about both older and younger workers, and demonstrate discriminance by showing its divergence from job satisfaction scores. While WIA scores were negatively correlated with stereotyping measures, there was not as strong a relationship found there as was found with job satisfaction. The lack of a strong relationship between WIA

scores and the stereotyping measures could have been due to measurement issues in the stereotyping scales; they were created for this study and not subject to tests of validity. Future research should seek to bolster construct validity by using more established measures of age-based stereotypes.

Social desirability could have impacted respondents' answers. It would be helpful for discriminant validity to show a nonsignificant correlation between scores on a social desirability scale and the WIA scale. Even though criterion validity was tested in the presence of covariates such as age and length of service in the current research, it could be strengthened through an experimental or observational study of employees' actual behaviors toward peers of different ages. Test-retest reliability has not yet been tested. It would be worthwhile to explore whether WIA scores improved after participants went through an educational intervention, such as intergenerational awareness training, or after organizations implemented a formal mentorship program.

Conclusion

With the collapse of the housing market and economic decline of 2008 coinciding with the planned retirement of millions of Americans, many workers age 65 and older have faced the need to stay in the workforce longer than they had originally planned. At the same time, a large generation of younger workers is now entering the workforce, resulting in workplaces where three or four generations may be employed side by side. This confluence of multiple perspectives, experiences, ways of communicating, and worldviews could result

in the stereotyping of outgroups, and those outgroups could easily be based on age. As with other forms of stereotyping and prejudice, ageism leads to misunderstandings and worsened performance. From both an organizational and personal perspective, it is important that the workplace atmosphere is a positive one for all ages of employees. Determining the quality of a workplace's intergenerational atmosphere requires a valid measurement tool, and up to now, no such tool has existed. The current research, by constructing a scale measuring five different components of age-related dynamics in the workplace, has introduced such a tool and provided initial evidence of its measurement validity. With further validation in diverse samples and with scales measuring related concepts, the Workplace Intergenerational Atmosphere scale should be of use in academic, applied, and industrial-organizational settings.

APPENDIX A:

STUDY 1 MEASURES

A-1: Workplace Intergenerational Atmosphere (WIA) Scale

Please indicate your level of agreement with the following statements by checking either “Strongly Disagree,” “Disagree,” “Agree,” or “Strongly Agree” for each statement.

	Strongly Disagree	Disagree	Agree	Strongly Agree
I believe that my work environment is a healthy one for people of all ages.				
Workers of all ages are respected in my workplace.				
There are myths and stereotypes about older workers at my workplace.				
I am able to communicate effectively with workers of different generations.				
Working with co-workers of different ages enhances the quality of my work life.				
My co-workers make older workers feel they should retire.				
I feel pressure from younger workers to step down.				
I feel pressure from older workers to step down.				
People work best when they work with others their same age.				
An older-worker-friendly workplace is very important.				
Every company needs older workers to balance the workplace.				
Co-workers outside my generation are not interested in making friends outside their generation.				
Many co-workers outside my generation prefer being with people their own age.				
Co-workers outside my generation complain more than co-workers my age do.				

I feel comfortable when co-workers outside my generation try to make conversation with me.				
I enjoy interacting with co-workers of different generations.				
My co-workers outside my generation are interesting and unique individuals.				

Please answer each of the following questions by checking the box showing how often you do each item.

	Never	Rarely	Sometimes	Often	Very Often
How often do you have conversations with co-workers outside your generation?					
How often do you have conversations with co-workers outside your generation relating to things other than work?					
How often do you talk with co-workers outside your generation about your personal lives?					
How often do you interact with co-workers outside your generation at company-sponsored events?					
How often do you eat meals with co-workers outside your generation during the workday?					
How often do you socialize after work with co-workers outside your generation?					

A-2: Job Satisfaction Scale (JSS)

Please indicate your level of agreement with the following statements by checking either "Strongly Disagree," "Disagree," "Agree," or "Strongly Agree" for each statement.

	Strongly Disagree	Disagree	Agree	Strongly Agree
The work that I do is in line with my personal values.				
I have a trusting relationship with my co-workers.				
I find meaning in my work.				
Most of my interactions at work are positive.				
I feel appreciated at work.				
I trust the leadership of my organization.				
My values are in line with my organization's mission.				
I receive recognition for the work that I do.				
I respect the work of my co-workers.				
Overall, I am satisfied with my job.				

A-3: Age and Work Scale (AWS)

Please indicate your level of agreement with the following statements by checking either "Strongly Disagree," "Disagree," "Agree," or "Strongly Agree" for each statement. Each statement refers to the typical older (age 50+) employee in your workplace.

Thinking of the typical older (age 50+) employee in your workplace:	Strongly Disagree	Disagree	Agree	Strongly Agree
Older workers are difficult to train.				
Older workers have a lot to offer the workplace.				
Older workers are creative.				

Older workers are too cautious.				
Older workers can adapt to new technologies.				
Older workers can perform physical work.				
Older workers are interested in technological change.				
Older workers are inflexible.				
Older workers dislike taking orders.				
Older workers are reliable.				
Older workers are loyal.				
Older workers want more responsibility.				

A-4: Mentorship Question

Do you mentor any of your co-workers?	Yes	No

APPENDIX B:

STUDY 2 MEASURES

B-1: Workplace Intergenerational Atmosphere – Revised (WIA-R) Scale

Please indicate your level of agreement with the following statements by checking either "Strongly Disagree," "Disagree," "Agree," or "Strongly Agree" for each statement.

	Strongly Disagree	Disagree	Agree	Strongly Agree
Co-workers outside my generation usually talk about things that don't interest me.				
My co-workers make older workers feel that they should retire.				
I believe that my workplace is a healthy one for people of all ages.				
In my workplace, qualified younger workers tend to be overlooked for promotions.				
My co-workers outside my generation are interesting and unique individuals.				
I feel comfortable when co-workers outside my generation try to make conversation with me.				
Co-workers outside my generation are not interested in making friends outside their generation.				
Workers of all ages are respected in my workplace.				
Co-workers outside my generation complain more than co-workers my age do.				
I feel pressure from younger workers to step down.				
I enjoy interacting with co-workers of different generations.				
I am able to communicate effectively with workers of different generations.				
Working with co-workers of different ages enhances the quality of my work life.				

I feel pressure from older workers to step down.				
Co-workers outside my generation tend to work differently than co-workers my age do.				
People work best when they work with others their same age.				

Please answer each of the following questions by checking the box showing how often you do each item.

	Never	Sometimes	Often	Very Often
How often do you have conversations about work-related matters with co-workers outside your generation?				
How often do you have conversations with co-workers outside your generation relating to things other than work?				
How often do you talk with co-workers outside your generation about your personal lives?				
How often do you eat meals with co-workers outside your generation during the workday?				

B-2: Job Satisfaction Scale (JSS)

Please indicate your level of agreement with the following statements by checking either “Strongly Disagree,” “Disagree,” “Agree,” or “Strongly Agree” for each statement.

	Strongly Disagree	Disagree	Agree	Strongly Agree
The work that I do is in line with my personal values.				
I have a trusting relationship with my co-workers.				
I find meaning in my work.				

Most of my interactions at work are positive.				
I feel appreciated at work.				
I trust the leadership of my organization.				
My values are in line with my organization's mission.				
I receive recognition for the work that I do.				
I respect the work of my co-workers.				
Overall, I am satisfied with my job.				

B-3: Stereotypes about Older Workers (St-O)

Please indicate your level of agreement with the following statements by checking either "Strongly Disagree," "Disagree," "Agree," or "Strongly Agree" for each statement.

	Strongly Disagree	Disagree	Agree	Strongly Agree
Older workers are difficult to train compared to younger workers.				
Older workers are less likely to adapt to new technology than younger workers.				
Younger workers are easier to train than older workers.				
Younger workers are more likely to adapt to new technology than older workers.				

B-4: Stereotypes about Younger Workers (St-Y) Scale

Please indicate your level of agreement with the following statements by checking either "Strongly Disagree," "Disagree," "Agree," or "Strongly Agree" for each statement.

	Strongly Disagree	Disagree	Agree	Strongly Agree
Older workers have a stronger work ethic than younger workers.				

Older workers are more loyal to their organization.				
Younger workers don't work as hard as older workers.				
Younger workers are less loyal to their organization than older workers.				

B-5: Mentorship Question

Do you mentor any of your co-workers?	Yes	No

APPENDIX C:

WIA SCORING GUIDE

Subscale/item labels are presented below in parentheses following each item. Scores for each item's possible responses are presented in the corresponding boxes for "Strongly Disagree," "Disagree," "Agree," and "Strongly Agree". Neither the subscale labels nor the scoring schema should be shown to participants when completing the scale.

	Strongly Disagree	Disagree	Agree	Strongly Agree
Co-workers outside my generation usually talk about things that don't interest me. (LOS4)	4	3	2	1
My co-workers make older workers feel that they should retire. (WIR1)	4	3	2	1
I believe that my workplace is a healthy one for people of all ages. (WGI1)	1	2	3	4
In my workplace, qualified younger workers tend to be overlooked for promotions. (WIR4)	4	3	2	1
My co-workers outside my generation are interesting and unique individuals. (PA3)	1	2	3	4
I feel comfortable when co-workers outside my generation try to make conversation with me. (PA1)	1	2	3	4
Co-workers outside my generation are not interested in making friends outside their generation. (LOS1)	4	3	2	1
Workers of all ages are respected in my workplace. (WGI2)	1	2	3	4
Co-workers outside my generation complain more than co-workers my age do. (LOS2)	4	3	2	1
I feel pressure from younger workers to step down. (WIR2)	4	3	2	1
I enjoy interacting with co-workers of different generations. (PA2)	1	2	3	4
I am able to communicate effectively with workers of different generations. (WGI3)	1	2	3	4

Working with co-workers of different ages enhances the quality of my work life. (WGI4)	1	2	3	4
I feel pressure from older workers to step down. (WIR3)	4	3	2	1
Co-workers outside my generation tend to work differently than co-workers my age do. (LOS3)	4	3	2	1
People work best when they work with others their same age. (PA4)	4	3	2	1
	Never	Sometimes	Often	Very Often
How often do you have conversations about work-related matters with co-workers outside your generation? (IC1)	1	2	3	4
How often do you have conversations with co-workers outside your generation relating to things other than work? (IC2)	1	2	3	4
How often do you talk with co-workers outside your generation about your personal lives? (IC3)	1	2	3	4
How often do you eat meals with co-workers outside your generation during the workday? (IC4)	1	2	3	4

Respondent scores may be computed for each subscale and as a total scale. Subscale scores are computed by finding the mean of the responses for the items in that subscale, with the highest possible subscale score being a 4, and the lowest a 1. A subscale mean should not be computed if more than one response in that subscale is missing.

Total WIA scores are computed by summing the five subscale means, resulting in a total WIA score of up to 20 points. A total WIA score should not be computed if any subscale mean scores are missing.

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The dissertation is therefore accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

_____ _____

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