

# Ageism and Productive Engagement: The Roles of Self Efficacy and Intergenerational Contact

By

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## Abstract

Although ageism has been widely recognized as a barrier to productive engagement among older adults for many years, the understanding of its determinants remains quite limited. The relationship between ageism and productive engagement has not been fully developed conceptually or tested empirically. The negative associations between ageism and productive engagement require extensive research. Using the Risks of Ageism Model as a conceptual framework, I described and examined the relationship between ageism and productive engagement, focusing on the negative effects of ageism on productive engagement among older adults. Further, self-efficacy was examined as a potential mediator for the relationship between ageism and productive engagement; intergenerational contact was also examined as a potential moderator for the relationship between ageism and productive engagement. Data on 8,796 respondents aged 50 years and older from the nationally representative longitudinal datasets of the 2014 and 2016 Health and Retirement Study were analyzed. Negative self-perceptions of aging and age discrimination were used to measure ageism. Productive engagement was operationalized in four constructs: formal paid work, volunteering, grandchild caregiving, and informal help. Multiple regression analysis was conducted using SPSS 25.0 to examine the direct relationship between ageism and productive engagement, controlling other covariates. Structural equation modeling (SEM) analysis was conducted using Mplus 7.0 to examine the pathways between ageism and productive engagement. The potential mediating effects of self-efficacy and moderating effects of intergenerational contact were tested with SEM bootstrapping analysis and multiple-group SEM analysis, respectively. A meaningful relationship was found between ageism and productive engagement among older adults. Negative self-perception of aging negatively affected productive engagement, and age discrimination was positively associated

with productive engagement. Self-efficacy was found to mediate the effects of ageism on productive engagement. Intergenerational contact was also shown to be a potential moderator of the relationship between ageism and productive engagement. Due to the presence of a rapidly aging population in the United States, research to improve the understanding of the ageism encountered by older adults as they take part in productive engagement, and ultimately to reduce it, is vitally needed. The results of this study provide supportive evidence for social work practices to advance older adults' well-being by identifying best practices for lessening the effects of ageism and supporting aging well.

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## Chapter 1: Introduction

No living being can defy or avoid the natural progression of aging. Having gray hair was once considered in traditional cultures as a respected sign of one's life experiences (Simonton, 1990). Aging is a process by which people are given the opportunity to become more mature (Elder & Johnson, 2003). It is also considered an opportunity to become dignified and self-controlled by understanding and overcoming immaturity and youth's temptations (Fischer, 1978). However, aging is now an often-unwelcome process as many people view it pessimistically (Tosato et al., 2007). The process of aging is frequently regarded as a challenge where people lose their self-esteem and productivity (Schafer & Shippee, 2009). Older adults' overall social and cultural status has declined amidst industrialization and modernization (Aboderin, 2004; Nelson, 2005). Modern society tends to devalue older adults' experiences and wisdom, leading to a reduction in their roles and participation in many aspects of society (Moody, 2006).

Research has indicated a high prevalence of ageism in the United States. Palmore (2004) found that 84% of older adults in his survey reported that they experienced ageism. McGuire et al. (2008) also reported that 84% of their participants from East Tennessee felt they had experienced ageism. More recently, an ageism study by the American Association of Retired Persons (AARP, 2014) conducted in the workplace indicated that 64% of survey respondents had witnessed or experienced ageism. Negative beliefs and attitudes toward older adults contribute to and exacerbate their exclusion from productive labor (Skirbekk, 2004). This leads to older adults often being treated as passive recipients of welfare, who may also be faulted for indebting future generations (Hudson, 2012).

In our current information society, the ability to use new technology and adapt to fast-paced environments is becoming more critical (Marcinkiewicz-Wilk, 2016). Information-based communication technologies enhance older people's health and quality of life in multiple areas (Sixsmith, 2013). These technologies can also increase older people's independence by making online services accessible. However, due to the natural physical and cognitive changes that come with aging, older adults may find it harder to respond quickly to speedy information processing (Torrens-Burton et al., 2017).

At the same time, older adults' relationship to the labor force has changed. In this fast-moving society, older adults are often not considered as part of a productive labor force (Thanakwang & Isaramalai, 2013). These changes have led to an increase in job turnover rates with forced early retirement (Macdonald & Levy, 2016). However, longer life expectancy and lack of retirement savings make it necessary for many older adults to remain in the labor force (Rhee et al., 2015). Certain countries with a high proportion of older adults—such as Japan and the United States—are predicted to exhibit high labor participation rates among people aged 55 and over (Muramatsu & Akiyama, 2011; Toossi, 2009). In the United States, the number of people aged 55 and over in the labor force has been increasing rapidly since 2003 (Toossi & Torpey, 2017). According to the U.S. Bureau of Labor Statistics (BLS), about 38.7% of people aged 55 and older were employed in 2017. Specifically, approximately 62.5 % of people aged 55-64 years and approximately 18.6 % of people aged 65 and older were employed in 2017 (U.S. Bureau of Labor Statistics, 2018).

Consequently, to maintain a productive labor force, older adults must positively adapt to the dynamic changes required by our information-driven society and develop their capacity to easily access and navigate new technology. However, this is difficult for many older adults,

making it harder for them to maintain their power and status as they might have done in the past. In summary, societal changes, including changes in labor force demands, contribute to the loss of status by older adults, but they nonetheless need to continue to be productively engaged for economic and health reasons. Ageism experience could also contribute to and exacerbates this problem.

An aging population combined with an increased life expectancy and declining fertility are phenomena currently faced by most countries around the world (United Nations, 2015). In the United States, the population aged 65 and over numbered 49.2 million in 2016 and represented 15.6% of the total U.S. population (Roberts et al., 2018). By 2030, there will be nearly 73.1 million people aged 65 and over who are predicted to represent about 21% of the U.S. population (Vespa & Armstrong, 2018). About one-fifth of the U.S. population will be aged 65 and older in 2030. Given this expected growth in the older adult population, strategies must be developed to make it possible for older adults to continue participating meaningfully in society and to combat the negative impact of ageism experience on their productive engagement. Initial steps in developing such strategies include accurately measuring the effects of ageism on older adults and examining the impact of ageism on older adults' ability to remain productively engaged.

This dissertation consists of five chapters. Chapter 1 provides a definition, overview, and discussion of ageism and productive engagement. Particular attention is paid to the relationship between ageism and productive engagement. In Chapter 2, systematic constructs that represent leading theories and reflect on crucial aspects of ageism are presented through a comprehensive review of theoretical and empirical research on ageism. Chapter 2 also includes a review of theoretical and empirical research pertaining to the relationship between ageism and productive

engagement. Furthermore, two potential theoretical frameworks, intergenerational contact and self-efficacy, as the foundation for intervention to reduce ageism and its effect on productive engagement are suggested. Chapter 3 presents research questions and associated hypotheses along with the methodology for the dissertation, including the data source, study sample sampling, measures, and the data analysis procedures. Chapter 4 presents the study findings. Finally, Chapter 5 discusses the main findings and their implications for social work practice and policy for older adults. Limitations and suggestions for future research are discussed.

### **Ageism**

Ageism refers to stereotyping, discriminatory actions, or prejudiced attitudes based on age (Burnes et al., 2019). Historically, ageism has not received as much attention as racism and sexism (Nelson, 2005). It has often been considered less severe and less common (Tse et al., 2010). However, the results from multiple studies on ageism indicated that ageism against older people had become the most pervasive form of social discrimination (Iversen et al., 2009). Abundant research has reported that many older adults in the United States have witnessed or experienced ageism (AARP, 2014; McGuire et al., 2008). Before discussing ageism, it is necessary to review the cultural and historical background of attitudes toward older adults in the United States. Culture and history are deeply embedded in social phenomena, and examining them can expose the foundation of traditional norms on ageism and attitudes toward older adults. This may also provide insights for the development of a new approach to aging, one that is badly needed to respond to a rapidly aging population.

### ***Cultural Background of Attitudes toward Older Adults in the United States***

Ideas concerning aging vary across cultures, and different countries have developed varying methods of caring for their aging populations within their own unique historical and

cultural contexts (Hooyman & Kiyak, 2010; Finer, 1996). In early America, older adults were venerated, following the spirit of the prevailing Judeo-Christian ethic (Fischer, 1977).

Christianity, as practiced in this period, places high importance on the concept of family value that enjoins care for older adults. God is presented as an older adult in this tradition, and during aging, a person becomes dignified and self-controlled through understanding and overcoming immaturity and the temptations of youth (Malone & Dadswell, 2018). These Americans of that period have been characterized as generally believed that survival to an advanced age without difficulty was a glory of God and the highest honor a person could achieve (Fischer, 1977).

Honoring one's parents was required of the faithful as one of the Ten Commandments (Weiner & Solomon, 2007). Respecting older adults was the responsibility of the individual, and in this Christian view, righteous people of faith should seek to carry out this responsibility (Malone & Dadswell, 2018).

Before 1870, a significant proportion of workers in the United States were employed on family farms, and many other industries functioned as forms of the family enterprise (Chapin, 2017). The family was considered an economic unit (Ross & Sawhill, 1977), and its productivity depended on the leadership of the oldest person in it, who also often owned the land or business. Here, the head of a family had an essential role to play in both the family proper and in the family business, thanks to his tremendous breadth of experience. Older adults used their wisdom to lead young people in times of crisis (Parisi et al., 2009). Living a long life could also grant political power. Of course, the actual degree of respect afforded to older adults differed in relation to their economic status. Further, this respect entailed an emotional distance between the older and younger generations.

As society industrialized in the late 19th century, it became challenging to keep pace with the omnipresent changes and increased demand for rapid production through more effective processes (Tuomi et al., 1997). In general, it is difficult for older adults to keep pace with change than for younger people, and they tend to lose power and status in this context. Traditional support for older adults disappeared far faster in the United States than in Eastern countries. Fischer (1977) suggests that the notion of forced retirement at a fixed age, which began with industrialization, is the principal reason why older adults came to require certain social and policy protections. This social requirement was produced by technological advances that raised poverty rates among older adults.

The change from reliance on the extended family to a life generally restricted to the nuclear family greatly increased the number of older adults living alone. It is now considered normal for older parents in the United States to live alone and independently from their children, based on long-standing principles of individualism and pragmatism. Values centered on the younger generation are dominant in many respects.

### ***Definition of Ageism***

Societal “isms” refer to discrimination and oppression produced directly or indirectly against various groups of people that share certain characteristics (Saucier, 2013): race (racism), sex (sexism), sexual orientation (heterosexism), ability (ableism), and age (ageism) (Kim, 2015). Unlike other societal isms, ageism can be directed, theoretically, at individuals of any age, making it a common problem for most members of society at one time or another (Nemmers, 2005). Since ageism tends to be relatively unnoticed and unchallenged, it is often overlooked (Makins, 2014).

Butler first introduced the concept of ageism in 1969, defining it as age-based discrimination and prejudice between age groups. Later, he redefined ageism aimed at older adults to highlight its negative aspects: “systematic stereotyping of and discrimination against older people because they are old” (Butler, 1975, p. 12). This definition has influenced many studies on ageism (Iversen et al., 2009) and has been used directly (McCann & Giles, 2002) and revised by many scholars who research ageism (Bytheway, 2005; Cohen, 2001). While ageism can produce positive stereotypes or attitudes—such as images of older adults as wise or altruistic (Angus & Reeve, 2006; North & Fiske, 2012)—it is most often associated with negative stereotypes or attitudes (Bai et al., 2016; Palmore, 1999). Theoretically, all age groups can be targeted by ageism, but in most cases, ageism has been observed against older adults and/or in late adulthood (Ayalon & Tesch-Römer, 2018).

Ageism can be manifested implicitly or explicitly (Iversen et al., 2009). Explicit ageism is distinguished by conscious awareness, intention, or control (Levy & Banaji, 2002). Implicit ageism refers to implicit or unconscious thoughts, feelings, and behaviors without conscious awareness, intention, or control (Levy & Banaji, 2002). In contrast, explicit ageism indicates thoughts, feelings, and behaviors driven by conscious awareness (Iversen et al., 2009). Not only ageism can be expressed towards others, but ageism can also be self-directed (Ayalon & Tesch-Römer, 2018). Furthermore, ageism can be manifested on individual, interpersonal, institutional, and cultural levels (Iversen et al., 2009).

Ageism includes the classic social and psychological components of discrimination: cognitive (stereotypes), affective (prejudice), and behavioral components of discrimination (Iversen et al., 2009). Stereotypes are “beliefs and opinions about the characteristics, attributes, and behaviors of members of various groups” (Whitley & Kite, 2006, p. 6). Stereotypes are

harmful to older adults' health, functioning, and well-being (Ory et al., 2003), leading to prejudice and discrimination (Plous, 2003). Common stereotypes of older adults are often based on old age vulnerabilities due to poor health and functioning (Ory et al., 2003). Prejudice refers to an attitude that includes biased, negative preconceptions against older adults (Nelson, 2005). Ageist prejudice is one of the most socially condoned and institutionalized forms of prejudice, and it is reflected in many areas of society (Nelson, 2005). Discrimination involves distorted behavior, such as treating people differently in a negative way (Dovidio et al., 2011). Discrimination is one of the major acculturative stressors associated with psychological health (Pascoe & Smart Richman, 2009).

Throughout this dissertation, ageism is defined as discriminatory and prejudiced actions or attitudes against older adults due to negative stereotypes based on chronological age ranges.

### ***Prevalence of Ageism***

Many research studies indicated a high prevalence of ageism in the United States (AARP, 2014; McGuire et al., 2008; Palmore, 2004). Certain scholars argue that negative attitudes toward older adults have increased over time (Nelson, 2005; Scharlach et al., 2000). Specifically, research indicates that younger people are more likely to have negative images of older adults implicitly (North & Fiske, 2015) and show negative attitudes toward older adults explicitly (Diehl et al., 2014). Despite the prevalence of ageism, little scholarly effort has been devoted to comparing ageism to other primary interpersonal dimensions of societal "isms," such as sexism and racism. Through the multidisciplinary academic database ProQuest Research Library (April 2018), 5,648 sources could be found containing the keyword "ageism." The number of search results containing the keyword "racism" was 173,718, while the number for "sexism" was 37,958. Even though ageism has been recognized for a long time, it has not been considered an

urgent social issue due to its relative social acceptability (Gendron et al., 2017). Moreover, ageism often operates in conjunction with sexism or racism (Jones et al., 2017), and yet it is the least studied of the three (Lloyd-Sherlock et al., 2016).

Ageism is a subjective concept and a multifaceted phenomenon (Kolpina & Shlychkova, 2013), so it must be understood through a variety of lenses: demographically, psychologically, socially, culturally, economically, and politically. Moreover, the notion of ageism varies across different cultures, and it is deeply embedded in their social structure (Ayalon & Tesch-Römer, 2018). Generally, ageism has been assumed to occur more prevalently in Western rather than in Eastern societies (Ayalon & Tesch-Römer, 2018). There is an assumption that older adults in the East are more revered and protected than older adults in the West. Meanwhile, older adults in the West are typically treated as equals regardless of age. Such beliefs usually originate from the idea that most Eastern countries are heavily influenced by Confucian principles, which stress that older adults must be treated with respect (Yun & Lachman, 2006).

### *The Mechanism of Ageism*

**Theoretical Perspectives on the Causes of Ageism.** Ageism is a multifaceted phenomenon driven by individual, social, and cultural factors (Bergman, 2017). Various social-psychological theories explain ageism on individual, interpersonal, and socio-cultural levels (North & Fiske, 2012). Industrialization and modernization theories, which explain ageism on a socio-cultural level, have served as foundational frameworks to define ageism (Kahana et al., 2017). Industrialization and technological advances have required people to keep up with rapid changes as the demand for quick results through effective processes continues to increase (Tuomi et al., 1997). These transitions have made older adults less needed, and their activities

are less visible (Solem, 2005). Older adults have become more marginalized in society, and it has weakened the capacity for their contribution.

Social role theory also contributes to our understanding of why older people are less valued and less likely to be considered part of a productive labor force than in the past (Kite et al., 2005). In fact, older adults are sometimes perceived as not valuable members of society (Levy & Banaji, 2002) and as passive beings that drain welfare systems and programs (Walker & Maltby, 2012). The idea of older adults as less competent increases negativity toward them. Socio-cultural accounts of ageism provide a general explanation of why society has a negative attitude toward older adults. These accounts serve as the basis to explain why American society became more ageist after the Industrial Revolution (Nelson, 2005).

On an individual level, terror management theory and social identity theory propose that the cause of ageism is an ego defense mechanism (North & Fiske, 2015). According to terror management theory, older adults might arouse the fear of death in other people, which increases the unconscious death-related cognition or a fear of loss (Greenberg et al., 2017). Consequently, this may be one of the reasons that some people avoid older adults (Martens et al., 2005). Social identity theory posits that group-based identities provide distinctive meaning (Jetten et al., 1997), which is manifested by biases that favor the in-group (young people) versus the out-group (older adults) (Bodner, 2009). Young people may attempt to keep older people at a distance in an effort to enhance the value of their self-concept, especially if it is based on the belief that youth is the superior state. On an interpersonal level, negative halo effects are often produced (North & Fiske, 2012). This theory assumes that older adults are perceived as physically unattractive and that they are more likely to be portrayed as having negative traits, including poor physical health and low competency, as they get older (Chrisler et al., 2016).

**The Mechanism Underlying the Effects of Ageism.** Many studies have shown a consistent pattern of results where ageism significantly influences both physical and psychological health (Bryant et al., 2012; Kim, 2015; Kim et al., 2016; Sabik, 2015). Explicitly, ageism results in social isolation by excluding older adults from social opportunities and resources. It may also contribute to low self-esteem and self-confidence (Orth et al., 2010). Implicitly, ageism against older adults is reproduced and unconsciously reflected in social and/or cultural spheres (Angus & Reeve, 2006). Older adults who go through a discriminatory experience due to their chronological age tend to be more vulnerable to stress (Snape & Redman, 2003) and social deprivation (Tougas et al., 2004), which have deleterious effects on older adults' mental health (Pascoe & Richman, 2009). Allen (2015) pointed out that recurrent experiences of ageism might be chronic stress in older adults' lives, leading to adverse health conditions and physical deterioration. Prior studies have indicated that ageism may have harmful effects on older adults' physical and psychological well-being and that it has been linked to mental health issues such as depression and anxiety (Bryant et al., 2012).

The results of a study by Emile et al. (2014) indicated that when older adults endorse negative stereotypes, they are more likely to experience a broader range of adverse health outcomes. Research conducted by Garstka et al. (2004) and Sabik (2015) found that ageism negatively affected older adults' psychological well-being. Finally, Kim (2015) and Kim et al. (2016) revealed that ageism is directly associated with depression.

## **Productive Engagement**

### ***Origin and Definition of Productive Engagement***

Introduced by Butler and Gleason (1985), productive engagement is a key element of productive aging and has long been considered a vital component of successful aging (Rowe &

Kahn, 2015). Productive aging emphasizes the positive aspects and potential effects of aging (Taylor & Bengtson, 2001), which may be specified as productive activities that contribute to individual lives, the community, and society as a whole (Hinterlong et al., 2001). The concept of productive aging counters the perception of older adults as inactive, non-contributing members of society (Hinterlong et al., 2001).

Older adults' productive engagement is generally defined as "any activity by an older individual that produces goods or services, or develops the capacity to produce them, whether they are paid or not" (Bass et al., 1993). These activities, therefore, contribute positively to older adults' individual lives and/or to their communities and societies (O'Reilly & Caro, 1995). Ultimately, productive engagement is a multi-dimensional concept determined by multiple components and factors (Sherraden et al., 2001).

In light of the rapid growth of older adults' population around the world, research on productive engagement has recently received significant attention, resulting in abundant research on the topic. However, the operationalization of productive engagement has not been firmly established because a clear consensus on how to define the term "productive" has not been reached (Thanakwang & Isaramalai, 2013). Therefore, a clear discussion on which dimensions and activities should be considered and included is needed. This section begins by proposing a specific definition for productive engagement among older adults.

Two different dictionaries define "productive" as (1) "causing or providing a good result or a large amount of something" (Cambridge Dictionary, 2018), and (2) "yielding results, benefits, or profits" (Merriam-Webster, 2018). "Engagement," in turn, is defined as a behavior or emotional involvement or commitment. According to these dictionary definitions, "productive engagement" can, therefore, be defined as a behavior or emotional involvement or commitment

(state of being involved) that produces positive results or financial gain. Ultimately, this definition can be either narrowed or broadened based on which element—involvement or commitment—is emphasized. A primary focus on involvement leads to a narrower definition of productive engagement as productive activities that generate goods or services: work, volunteering, caregiving, and informal help. On the other hand, a focus on commitment leads to a broader definition that includes the capacity to engage in productive activities. Therefore, a broader definition of productive engagement features self-care, continuing education, home maintenance, and social and leisure activities that strengthen productive capacity (Morrow-Howell & Wang, 2013). This second definition includes activities that occur outside the marketplace and the labor force (Hinterlong et al., 2001).

Most studies have focused on a narrower definition. Hinterlong (2007) defined productive engagement in his research as an activity producing goods or services, whether paid or unpaid. The author outlined five specific, measurable activities: formal paid employment, irregularly paid work, unpaid volunteering, caregiving, and informal help to others. Ludlow et al. (2014) defined productive engagement as engagement through older adults' productive roles: workers, volunteers, adult caregivers, and informal helpers. Morrow-Howell and Wang (2013) also adopted a broader definition of productive engagement as activities or services that have economic value, whether paid or unpaid (including working, volunteering, and caregiving). Other studies, however, viewed productive engagement through a broader lens. Glass, Mendes de Leon, Bassuk, and Berkman (2006) used the term social engagement to refer to social, leisure, and productive activities typically arising from meaningful social roles. Burr et al. (2007) included self-care and household maintenance activities under the category of measurable productive engagement.

In this dissertation, productive engagement is defined as older adults' involvement and activities that produce goods or services, whether paid or unpaid. This study operationalized productive engagement by including paid work, volunteering, caregiving, and informal help within its definition.

### ***Challenges and Barriers to Productive Engagement among Older Adults***

Older adults' engagement in a range of activities is increasingly important as they age. However, there has been some controversy about how we understand the nature of productive engagement (Hinterlong et al., 2001). First, methods to identify and examine manifestations of productive engagement have not been thoroughly explored. Conceptual clarification of productive engagement—that is, the classification of the productivity of specific modes of engagement—is a complex issue that has not been definitively resolved. Most importantly, there is significant uncharted terrain regarding the questions of how to operationalize productive engagement's multi-dimensions and of how to measure each dimension. We must also pay attention to the particular characteristics of productive engagement (e.g., whether voluntary or forced). Older adults' freedom to participate (or not) in both productive and nonproductive activities is consonant with social work values.

Generally, the age-related physical and physiological decline may discourage older people from actively engaging in activities (McPhee et al., 2016). Additionally, encountering ageism during active engagement can become a barrier to older adults' productive engagement, as numerous studies have shown (Taylor & Bengtson, 2001; Warburton et al., 2007). Negatively stereotyping older adults due to their age prevents individuals from recognizing the significant socio-economic value that older adults provide to society throughout their productive engagement (Loh & Kendig, 2013).

An aging population has amplified the urgency of establishing effective future policies for older adults. Thus far, policies related to older adults have focused on addressing the potential negative impacts of the increasing number of older adults (Rowe & Kahn, 2015). Many policies view older adults as passive recipients of welfare who are indebting future generations (Hudson, 2012). The older adult population's potential positive contributions to socio-economic development have been largely ignored.

### ***Implications of Productive Engagement***

The outcomes of productive engagement can be witnessed on individual, familial, communal, and social levels (Hinterlong et al., 2001). On the individual level, participation in productive engagement activities later in life is a potential strategy to increase older adults' well-being (Gonzales et al., 2015). Empirical literature investigating productive engagement has found that it positively supports the subjective well-being of older participants (Baker et al., 2005; Hao, 2008). Paid work in later life fulfills older adults' financial needs (Beehr & Bennett, 2015), and it is associated with improved physical and mental health (Hinterlong et al., 2007). Volunteering activities similarly help in reducing anxiety, depression, and mortality risks (Hao, 2008; Konrath et al., 2012), leading to a higher degree of life satisfaction (Pilkington et al., 2012). In addition, older adults who give informal caregiving to others have better mental health (Kim et al., 2016). Informal social participation and informal social support were associated with fewer symptoms of depression (Chiao et al., 2011) and a higher level of psychological well-being (Huxhold et al., 2014). Trust and friendly bonds generated by social participation make post-retirement life more productive, which also contributes to maintaining a positive attitude and high self-esteem (Newsom & Schulz, 1996). Eizenman et al. (1997) studied informal social participation as an essential factor that facilitates older adults' successful aging, manages

symptoms of anxiety and stress (Kempen et al., 2012), and enhances older adults' well-being (Wedgeworth et al., 2017). Most research findings on the topic have pointed to the consistent psychological benefits that arise from older adults' productive engagement, suggesting that remaining productively engaged in later life improves older adults' quality of life.

Productive engagement is important not only on an individual level. Older adults remaining engaged in productive activities has numerous positive effects on communities and societies (Hinterlong et al., 2001). By working longer, older adults contribute significantly to their economies. Working older adults were once considered a burden on the economy (Gonzales et al., 2015), but they are now more likely to be considered powerful contributors that drive economic growth (AARP, 2016). Volunteer activities also make socio-economic contributions to society. According to the Corporation for National and Community Service (CNCS), approximately 11 million volunteers aged 65 and older provided voluntary services in 2015, with an estimated economic contribution through volunteering of 45.4 billion dollars. Informal caregiving, including supplementary grandchild care provided by older adults, is also becoming more prevalent as a valuable resource for working parents (Di Gessa et al., 2016). In 2011, approximately 21.1% of employed mothers in the United States received childcare assistance from their parents (Laughlin, 2013). Through its economic and societal contributions cannot be measured exactly; the financial value of caregiving activities has been estimated at over 100 billion dollars (Johnson & Schaner, 2005).

### **Study Rationale**

While the concept of ageism can be illustrated through positive stereotypes or attitudes (Palmore, 1999), it is more likely to be perceived by older adults in the form of negative stereotypes and attitudes (Coudin & Alexopoulos, 2010). A growing body of research shows that

ageism negatively affects older adults' psychological well-being and even physical functioning (Bryant et al., 2012; Kim, 2015; Kim et al., 2016; Sabik, 2015).

Older adults often exposed to ageism tend to internalize negative stereotypes (Dionigi, 2015; Ory et al., 2003) and confine themselves within the limits of age stereotyping, seeing themselves as weak, unhealthy, and even as having a poor capacity to learn (Streb et al., 2008). These internalized negative stereotypes lead to low levels of self-esteem and self-confidence (Orth et al., 2010), and they may hinder older adults' participation in various activities (Eibach et al., 2010). Older adults who consider themselves too old to engage socially may be more susceptible to the negative effects of ageist stereotypes, including decreased self-efficacy (Eibach et al., 2010). In turn, this is associated with low productive engagement (Thanakwang & Isaramalai, 2013). Conversely, positive perception and attitudes toward one's own aging may have beneficial consequences for productive engagement and even productive aging (Morrow-Howell et al., 2015). Although ageism has been recognized as a barrier to productive engagement among older adults for many years (Angus & Reeve, 2006; Morrow-Howell et al., 2015), our understanding of its determining factors is still quite limited.

This dissertation examines the relationship between ageism and productive engagement and possible mediating and moderating factors with the ultimate goal of finding, testing, and widely implementing ways to mitigate the negative effect of ageism experience, especially on the productive engagement of older adults. Research on the relationship between ageism and older adults' productive engagement is currently at an early stage with ample room for theoretical and empirical development. We need to expand social work theory and practice to include more research on ageism and its relationship to productive engagement. Theoretical constructs of productive engagement and ageism need to be more fully developed, and more empirical studies

that focus on this relationship are needed. This study offers an initial step in measuring the frequency and influence of ageism on older adults' productive engagement, with the purpose of gaining an accurate picture of this phenomenon. The study functions as a foundation for subsequent research and study into how ageism experience affects productive engagement.

## **Chapter 2: Theoretical and Empirical Basis**

Three theoretical frameworks are discussed: 1) the RAM, 2) social identity theory, 3) activity theory. This study explored how and why ageism negatively impacts productive engagement using the Risks of Ageism Model, introduced by Swift et al. (2017). The RAM provides supports for the relationship between ageism and productive engagement. The nature and causes of ageism were examined using social identity theory, while activity theory provided a theoretical basis for productive engagement. The following section provided a critical review of the empirical literature on ageism scales and a detailed literature review on ageism and productive engagement. I also discussed self-efficacy as possible mediators in lessening ageism's effects on productive engagement and intergenerational contact as a possible moderator between ageism and productive engagement. Taking into account that productive engagement plays a vital role in aging well, a comprehensive understanding of the relationship between ageism and productive engagement may provide insights into how ageism's effects can be countered.

### **The Risks of Ageism Model**

Theories reviewed and applied in much of the literature on ageism and productive engagement tend to be descriptive, featuring only limited discussions on how ageism influences older adults' productive engagement. However, the Risks of Ageism Model (RAM) was recently introduced to offer a deeper understanding of the potential role of ageism in active aging (Swift et al., 2017). The RAM presents a useful framework to develop insights into how ageism inhibits older adults' productive engagement. Furthermore, the comprehensive RAM model provides new ideas on how to prevent ageism's potential negative effects. However, given the RAM's extensiveness and complexity, its applicability in actual research remains largely undeveloped. Since the RAM was proposed so recently, there are few empirical studies to support it.

Swift et al. (2017) introduced the Risks of Ageism Model (RAM) as a new systematic paradigm for explaining the risks of ageism in active aging. RAM reflects theoretical debates on the relationship between ageism and active aging. The model features three specific domains of active aging: autonomy, independence, and quality of life. It also uses the active aging determinants framework developed by the World Health Organization (WHO) in 2002. These determinants, considered as key factors in active aging, are (1) economic conditions (e.g., income and employment), (2) health and social services, (3) behavior (e.g., healthy living engagement), (4) personal characteristics (e.g., biological and psychological factors), (5) social situation (e.g., social support and freedom from violence and abuse), and (6) physical environment (e.g., the level of safety of living environments).

The RAM investigates three pathways of ageism that potentially inhibit active aging. The first pathway is the stereotyped embodiment, which refers to a person's internalization of age stereotypes through life-long exposure to them (Levy, 2009). This pathway posits that the internalization of age stereotypes tends to negatively impact older adults psychologically, behaviorally, and physiologically. The second pathway that interferes with active aging identified by the RAM is the age-based stereotype threat. This is defined as "the threat experienced by individuals when they feel that a certain situation puts them at risk of confirming a negative stereotype about their age group" (Swift et al., 2017, p. 203). The stereotype threat may limit an individual's cognitive ability. The final pathway is ageism itself, particularly discrimination based on age. The RAM explores these three pathways and identifies where and how ageism influences the determining factors in active aging. Ultimately, the RAM offers a comprehensive framework for considering the effects of ageism on active aging.

## **Social Identity Theory**

Social identity has been defined as “that part of an individual’s self-concept which derives from his knowledge of his membership in a social group (or groups) together with the value and emotional significance attached to that membership” (Tajfel, 1981, p. 255). This theory features a categorization process, which enables a clear distinction between the in-group (us) and the out-group (them) (Stets & Burke, 2000). In simpler terms, if certain people perceive themselves as part of a group, the group is their in-group. Individuals’ sense of who they are is built on the in-group’s shared beliefs, actions, intentions, and attitudes (Tajfel, 1974). On the other hand, persons who are dissimilar from the self (or that sense of self) are considered as part of the out-group (Stets & Burke, 2000). This categorization often leads to stereotyping and prejudice between groups (Tajfel & Turner, 1979). The theory suggests that the in-group may discriminate against the out-group based on the notion that the in-group possesses a positively valued distinctiveness that out-groups do not possess (Stangor, 2000). This theory, therefore, highlights a connection between social identity and self-image, emphasizing the critical need to achieve a positive self-image (Tajfel & Turner, 1979).

According to social identity theory, people tend to maintain a positive self-image by establishing their in-group’s positively valued uniqueness and distinguishing themselves from the out-group to develop their self-esteem (Turner, 1981). That is, social identity theory posits that a person’s self-esteem is enhanced when the in-group is judged positively while the out-group is judged negatively (Stets & Burke, 2000). With regard to ageism, this social categorization process provides a context for one of the causes of ageism. The concepts of “in-group” and “out-group” help us understand the dynamics between old and young groups. Prejudiced views between the in-group and out-group—especially when directed against the out-

group—explain a significant cause of ageism. Members of young groups may be prejudiced and discriminate against older adults to enhance their own self-image (Garstka et al., 2004).

Consequently, older adults may be negatively influenced by their poorly valued social identity.

When older adults' group membership is judged negatively, they are likely to experience suffering from a negative social identity.

Understanding the processes of social identity offers an insight into how to cope with ageist prejudice and discrimination (Desmette & Gaillard, 2008). Intergenerational contact, as referenced above and explained by social identity theory, is a proactive strategy to reduce ageism. This intergroup contact helps to improve older adults' status by lessening the boundaries between older and younger workers (Desmette & Gaillard, 2008). In turn, this approach may lead to re-categorization, which further eliminates the distinction between groups (Hagestad & Uhlenberg, 2005).

By adopting the concept of intergroup comparisons, social identity theory has played an important role in explaining the causes of ageism. However, social identity theory has also been criticized for ignoring individuality (Huddy, 2001). As mentioned above, older adults make up a diverse population. The baby boomer generation—consisting of individuals born between 1946 and 1964—is more racially diverse than its previous generation (Frey, 2010). Moreover, social identity theory does not fully explain the complicated relationship between self-esteem and in-group bias (Hornsey, 2008). In other words, the theory provides limited information or evidence as to why favoritism among members of younger groups may result in discrimination against older adults. Finally, social identity theory provides a partial explanation for ageism but leaves out important predictive factors—such as economic status, health, and social position—and intermediary factors that would more fully explain the causes of ageism.

## **Activity Theory**

The following section focuses on the individual-level factors that influence productive engagement and discusses the contributions of activity theory in exploring older adults' productive engagement. Havighurst (1961) first introduced the activity theory to respond to and oppose the disengagement theory. According to disengagement theory, it is natural for aging adults to withdraw from society. A decrease in individual relationships with reduced communication and interaction is therefore seen as inevitable for older adults. Contrastingly, activity theory posits that aging can be an active and satisfying process full of meaningful activities.

Activity theory has been applied extensively in studies on productive aging, and it represents one of the earliest efforts to explain how people adjust to changes as they age (Hooyman & Kiyak, 2010). The theory emphasizes the importance of remaining active through productive activities—both voluntary and leisure activities—to cope with the sense of loss along with potentially declining cognitive function. Maintaining a productive role in old age can serve as an underlying foundation for a successful adjustment to aging.

Activity theory is premised on the belief that being active helps to overcome challenges and obstacles in later life and fosters psychological well-being, thereby contributing to successful aging. This theory is compatible with the dynamics that support productive engagement, as it asserts that individual social problems related to aging can be solved in part by promoting productive activities (Engeström, 2009). The theory focuses not only on maintaining productive roles individually but also on fostering socially engaging activities (Moody, 2006). Studies have shown that social interaction through active engagement contributes substantially to good mental health and life satisfaction (Moody, 2006). Activity theory provides particular insights into the

dynamics that support productive engagement, emphasizing that being active through productive activities can solve some of the problems that older adults face. The relationship between ageism and productive engagement may further our understanding of how to counter the effects of ageism.

Activity theory is a foundational theory for productive engagement. The theory's application has provided useful accounts of how meaningful activities, such as productive engagement, positively contribute to older adults' aging process. However, activity theory has been criticized for its assumptions regarding the concepts of individual desirability, physical and cognitive functioning, and structural conditions. This theory is criticized primarily for overlooking people's individual preferences in staying active and maintaining social interactions. That is, it is not guaranteed that all older adults desire to engage in productive engagement, even if it is highly valued by society and potentially something that could be meaningful to the individual. According to activity theory, older adults are expected to participate in new activities and build new relationships. However, many older adults might hesitate to try new activities after retirement. Instead, they sometimes wish to engage in the same activities and maintain the same relationships from their earlier years. Furthermore, new activities and relationships might not fully replace more established ones. Participating in productive engagement may not always lead to positive outcomes for older adults. Activity theory also ignores variations in older adults' health status, which can deter people from engaging in activities. For some older adults, physical and cognitive functional limitations may profoundly affect their capacity to remain healthy and actively engaged. Additionally, economic, social, and cultural conditions that may negatively affect the ability to remain active should be considered when evaluating activity theory.

## **Ageism Scales**

Before Butler (1975) introduced the concept of ageism, there were few measures to assess age-related stereotypes (Rupp et al., 2005). Tuckman and Lorge (1953) developed a questionnaire to measure the respondents' level of agreement with 137 statements regarding misconceptions and stereotypes about older adults (respondents were aged 20-48). Kogan (1961) developed two sets of 17 statements measuring attitudes toward old people (OP scale) using a Likert-type agree-disagree scale. The main contents of both sets of statements are identical, but they are worded either positively or negatively.

These early measures were mostly constructed as a single dimension focusing on the cognitive component of ageism to assess overall negative perception toward older adults (Lassonde et al., 2012; Rupp et al., 2005). Since the 1990s, scales used to measure ageism tend to include more dimensional components. For example, the Fraboni Scale of Ageism (FSA) was developed to measure diverse aspects of ageism, especially affective components (Fraboni et al., 1990). Palmore's (2001) Ageism Survey targeted participants aged 60 and above to measure the negative aspects of ageism. Contrary to the previous scales, Palmore's (2001) scale intended to measure older adults' own experience of ageism. Most recently, Cary et al. (2017) developed the Ambivalent Ageism Scale (AAS) that measures both hostile and benevolent ageism.

### ***Ageism Scales Review***

This section critically examines the empirical literature on ageism scales. Most prior ageism scales have focused on younger people's attitudes and beliefs toward older adults. Only Palmore's (2001) scale examined how older adults felt and thought about their experiences of being treated as a stereotype. However, Palmore's scale is incomplete because it does not fully measure ageism and its ambiguity of wording makes it difficult to interpret the originally

intended meaning of items. Many studies have adopted and revised ageism scales that were developed specifically to measure younger people's attitudes toward older adults, meaning that the scales' validity has been problematic when administered to older adults. There is also considerable variance in the scales' reliability. In Gluth et al.'s (2010) study, for example, the Aging Semantic Differential scales' reliability was significantly different when it was used with younger versus older participants.

Most ageism scale development research did not provide convincing answers to whether their samples are sufficient to establish the validity and reliability of ageism scales. That is, they failed to give clear evidence as to why and how they set a criterion for determining the sample number for validity and reliability of ageism scales. Further, most studies did not adequately examine the validity of their scales. Palmore (2001) and Cherry and Palmore (2008) only tested face validity, which is the weakest form of validity. Although some recent scales developed by North and Fiske (2013) and Cary et al. (2017) were evaluated in a systematic way through criterion validity tests, the authors did not consider the theoretical aspects of their scales. Validity represents an overall judgment of the degree to which both empirical evidence and theoretical considerations support the interpretation of the scale and the implications for use (Cronbach, 1971). However, most scales indicated high reliability that shows a robust internal homogeneity. However, reliability is required for validity, while validity is not to be implied from reliability. Taken together, many have been tested using a small sample size, and most have not undergone rigorous reliability and validity testing.

Many studies that discussed older adults' experience of ageism used uni-dimensional or simple measures. Kim (2015) used a dichotomous variable to measure ageism based on two concepts: perceived everyday discrimination and attributions of everyday discrimination. Bai et

al. (2016) examined ageism indirectly through the concept of burden views toward older adults. None of the existing scales take into account cultural differences. The existing scales are more suitable for Western societies. Historical circumstances and cultural roots are often reflected in how specific societies perceive the status of old age. Many apparent differences exist, for instance, in how Western and Eastern cultures understand old age. Older adults in Eastern cultures are more revered and protected than older adults in Western culture, while older adults in Western culture tend to be treated as equals regardless of their age. As Palmore (2015) pointed out, ageism can be considered a social disease, reflecting deeply embedded societal and cultural contexts. However, socio-cultural uniqueness has not been considered when developing scales, nor has the scales' cross-cultural reliability and validity been tested. In other words, the actual impact of ageism on older adults—particularly among diverse populations—has not been adequately researched. For example, many studies have indicated that the extent to which older adults experience ageism varies according to race. North and Fiske (2013) and Cary et al. (2017) included participants of a diverse racial and ethnic background that can be reflective of the demographic composition of North America. However, they did not examine cross-cultural differences in ageism. They did not look at how prevalence varied by race and ethnicity. Therefore, studies on ageism that take into consideration factors like race and cultural origin must be conducted.

### *Ageism Measures in this Study*

A thorough review of the literature indicated that more work is needed to develop ageism scales that can take into account the multi-dimensional aspects of ageism, are sensitive to cultural differences, build on insights from older adults themselves about aging as they experience it, and have been rigorously tested for reliability and validity. Due to the current state

of scale development and the paucity of data enabling empirical examination of the relationship between ageism and productive engagement, I draw on the data from the Health and Retirement Study (HRS) data to examine this relationship. The ageism components that Iversen et al. (2009) suggested and the dimensions included in the Fraboni Scale of Ageism (FSA) were used to construct the ageism measure for this study, which included psychological components and behavioral components of discrimination. The proposed ageism scale included negative self-perception of aging as psychological components (i.e., stereotypes and prejudice) and age discrimination as the behavioral components of ageism. I focused on the negative aspects of self-perception of aging.

Self-perception of aging can be defined as personal attitude, perception, and evaluation of one's own aging (Macia et al., 2009; Moser et al., 2011). This concept can also be thought of as a reflection of others' perception toward oneself, whereby people internalize positive or negative perceptions and attitudes toward themselves from their experiences with others (Macia et al., 2009). Self-perception of aging is closely related to age stereotypes (Levy, 2009). Levy's (2009) Stereotype Embodiment theory explained how age stereotypes become internalized and how this internalization affects individuals' aging attitudes. People are exposed to age stereotypes throughout their lifetimes. Starting in early childhood, people experience these stereotypes. The frequency and degree of these experiences may differ, but they still contribute to and shape individuals' evaluations of their own aging experiences (Sun et al., 2017). Accordingly, older adults' internalized age stereotypes influence their self-perceptions of aging, and the direction and extent of their perception are influenced by their stereotypical information regarding aging (Moser et al., 2011; Sun et al., 2017). Ultimately, older adults who have experienced a greater degree of positive age stereotypes are more likely to perceive their own aging positively; on the

other hand, greater exposure to negative age stereotypes may lead to negative evaluations of older adults' personal experiences of aging.

Age discrimination refers to less favorable treatment or perceived behavior toward oneself due to age (Ayalon & Tesch-Römer, 2018). Age discrimination occurs within social relationships (Kim, 2015) and is often exhibited through interpersonal behavior such as biased language or harassment (Gendron et al., 2017). It appears extensively in the workplace and typically describes age-based discrimination in terms of employment or the work environment. More specifically, it refers to the less favorable treatment of a job applicant or employee due to his or her age. Workplace age discrimination is widespread in the United States and is becoming a severe problem for the country's aging population (Macdonald & Levy, 2016).

### **Ageism's Effects on Productive Engagement**

Ageism has been recognized as a barrier to productive engagement among older adults for many years (Angus & Reeve, 2006; Morrow-Howell et al., 2015). Ageism has been shown to adversely affect the way in which older adults participate in productive activities and to potentially limit accessibility to engagement sources (Donizzetti, 2019). Considering the multiple benefits of productive engagement, a comprehensive understanding of the association between ageism and productive engagement is needed. However, the current number of studies is too small to establish a firm association between ageism and older adults' psychological well-being. Thus far, articles on ageism are mainly conceptual or theoretical papers featuring discussions that tend to center on identifying the causes and consequences of ageism (Iversen et al., 2009). Further empirical studies are required to explore the hypothesis that ageism is harmful to older adults' productive engagement.

### *Ageism and Work*

During the past two decades, ageism in the workplace has been studied extensively. An increased life expectancy makes retirement the longest period of life for some people (Collins, 2003); many older workers try to remain employed for as long as possible by delaying their retirement (Poscia et al., 2016). Due to lack of financial means, some older adults must often work multiple jobs—including part-time jobs and self-employment—after retirement. The need to help older adults participate in the labor market is becoming increasingly apparent. The importance of community service to foster employability after retirement is also becoming increasingly recognized.

However, ageism is the most common barrier to employment throughout the hiring process for older adults, especially when it comes to recruitment decisions (Rhee et al., 2015). Many older adults encounter hostile ageism as they go through the hiring process (Ahmed et al., 2011). Certain studies have indicated that hiring decisions are often driven by implicit ageism, which is also prevalent in the workplace (Oliveira, 2017). Workplace ageism might lead to older adults being mistreated and limited in their ability to demonstrate their talents and skills fully (Dennis & Thomas, 2007). Consequently, ageism may significantly lessen older adults' capacity to remain in the workplace and diminish the opportunity for communities to recognize the many benefits that arise when older adults remain productive. Ageism in the workplace emerges as a consequence of the assumption that older adults' job performance is poor because job capacity and proficiency decrease with age.

The negative effects of ageism in the workplace are well-documented. Bayl-Smith and Griffin's (2014) study examined the effects of age discrimination on work engagement and intended retirement age. The study's participants were Australian employees aged 45 and above.

The study found that age discrimination had a negative effect on work engagement, but it did not have any statistically significant effect on the intended retirement age. The researchers measured perceived age discrimination using six items adapted from the standardized scales of ageism, with four items from Kunze et al.'s (2011) Perceived Age Discrimination Climate scale and two items from the Workplace Prejudice/Discrimination Inventory (James et al., 1994). Macdonald and Levy (2016) studied how perceived age discrimination affects job satisfaction, commitment, and engagement. The researcher used a single question to measure perceived age discrimination among the participants, who were workers aged 18 or older. Although age discrimination was negatively associated with the three job-related variables, it was not statistically significant. This result might be a consequence of the study's lack of segmentation into particular age groups since the researcher focused on achieving a deep understanding of the study's variables using a diverse age sample.

### ***Ageism and Volunteering***

While the impact of ageism on volunteering in later life has been largely ignored, some studies have mentioned the potential risk of ageism in volunteering activities. More specifically, studies have shown that many older adults are concerned about encountering ageism when they volunteer (Principi et al., 2012; Warburton et al., 2007). Anderson and Dabelko-Schoeny (2010) also argued that ageism restricts access to volunteer activities. Considering the significance of volunteering to older adults, how ageism affects volunteering needs to be researched and discussed extensively. Thus far, there has been limited systematic research on how ageism influences participation in volunteering activities among older adults. Moreover, there is no data showing the prevalence of ageism in a range of volunteering activities. That is, given current

information, we are unable to measure the frequency and types of ageism that occur in volunteering.

As the health benefits of volunteering are increasingly recognized, many older adults seek volunteer opportunities. Indeed, approximately 11 million people aged 65 and older (Bureau of Labor Statistics, 2018)—or 23% of the population in this age group—were involved in volunteer activities in 2015. Volunteering is a key element of productive engagement, positively associated with social benefits for older adults that help to reduce loneliness and social isolation (McNamara & Gonzales, 2011; Warburton et al., 2007). Besides, numerous studies have indicated that volunteering can contribute to the improved physical and psychological well-being of older adults (Pilkington et al., 2012; Tang et al., 2010).

Warburton et al. (2007) used a mixed-method approach to explore the benefits and limitations experienced by older people during volunteering. The researchers developed their own scale to measure age discrimination, featuring a single measurement with a five-point Likert-type scale. Participants were asked whether they had any concerns about encountering age discrimination. All participants were at least 50 years old, and they mostly reported feeling worried about facing ageism while volunteering. The researchers' qualitative study results did not reach a consensus regarding the fear of encountering ageism while volunteering. A systematic review of the obstacles preventing older adults' volunteer engagement conducted by Principi et al. (2012) found that ageism is one of the potential barriers to volunteer activities. The study ultimately highlighted how the concern of encountering ageism might hinder older adults from taking on volunteer responsibilities.

### *Ageism and Grandchild Caregiving and Informal Help*

A significant number of grandparents provide childcare to their grandchildren, and this number has increased since the mid-1990s (Kropf & Kelley, 2019). A national survey conducted by AARP in 2018 found that 96% of respondents aged 65 and over were grandparents, and 38% of them consider themselves caregivers (AARP, 2020). Grandchild caregiving has benefits, including countering ageism through intergenerational connections. Little is known about how ageism influences older adults who provide grandchild care, but some work has been done on this subject. Silverstein and Parrott (1997) found that positive attitudes resulted from grandparent-grandchild contact. However, Stelle et al. (2010) found that both grandparents and grandchildren might experience ageism from such contact due to the age gap.

Informal help is a broad concept, which includes a wide range of informal help, support, and care activities provided to family, relatives, friends, and neighbors (Jegermalm & Grassman, 2012). Informal help has an important role to play for older adults in the community (Davey & Patsios, 1999). Through informal help, relationships are built, and support networks are formed that can provide assistance during hardships or emergencies and in response to limitations in activities of daily living. Older adults who engage in several productive activities concurrently, such as caregiving and informal support, report better health (Rozario et al., 2004). Unfortunately, no studies have examined the direct effects of ageism on informal help. However, much research has found that ageism may be a barrier to community participation for older adults (Goll et al., 2015), as frequent community engagement can lead to increased experiences of prejudice, aggression, or discrimination.

## **Combatting Ageism**

### ***Intergenerational Contact***

The importance of reducing or preventing ageism is often noted (Nelson, 2005; Raposo & Carstensen, 2015). There is no consensus as to a specific method or variable that may help to reduce ageism, but intergenerational contact is a persuasive intervention that has convincingly redressed ageism. Many studies have already recognized the importance of intergenerational contact (Cadieux et al., 2018; Christian et al., 2014; Drury et al., 2016), which may work effectively between the old and young generations in improving their relationship and reducing prejudice between these groups (Abrams et al., 2006; Brown & Hewstone, 2005; Hale, 1998).

Allport's (1954) intergroup contact theory, which posits that intergroup contact is the most effective way to reduce prejudice among different groups, is a foundational source for intergenerational contact. This theory is based on the assumption that interaction between people in different groups leads to a better understanding of others and improves intergroup relations, which finally leads to the reduction of prejudice (Amir, 1976). The interactions between different groups start from personal acquaintances between members through face-to-face communication (Grefe, 2011), and the accumulation of acquaintances enables people to understand and appreciate different points of view involving other people's ways of life (Amir, 1976).

The quality of contact, as well as the frequency of contact, should be considered as necessary when applying intergenerational contact theory. More comfortable and enjoyable interactions through well-managed contact between older adults and young people can lead to a better relationship (Allport, 1954; Christian et al., 2014; MacInnis & Page-Gould, 2015), and these interactions could make friendship-developing mechanisms possible (Pettigrew, 1998). That is, when people have positive relationships, especially friendships, across intergroup

boundaries, this may create the potential for better understanding of the outgroup (Pettigrew, 1998). Conversely, negative contact will not.

The intergenerational contact between older adults and young people should be viewed on a long-term basis. Intergroup contact requires time to produce good results, and a long period of time helps in measuring the results of the contact accurately (Pettigrew, 1998). Contact is the first step to building a relationship with others, and a relationship requires agreeableness with others. Moreover, a bond of sympathy between generations can be developed by establishing a close rapport based on positive interactions (Christian et al., 2014). These processes normally require a lot of time, so the result of contact, such as promoting and improving the image of older adults, would appear after a long time.

Intergenerational contact can act as a buffer against negative influences from young people toward an exclusive group of older adults based on subgroup culture, which is one of the concepts used as a theoretical basis of ageism. In other words, this theory can be used as a foundation for interaction to increase intergenerational exchanges and can ultimately lead to social integration.

### *Self-efficacy*

Self-efficacy has been studied as an important factor that can contribute to older adults' successful aging and enhance their well-being (Eizenman et al., 1997). Much research has been conducted on the importance of older adults' self-efficacy, but its role as a possible mediator or moderator in lessening the effects of ageism has not been fully explored. Increased self-efficacy as a remedial approach to reduce the negative effects of ageism on productive engagement is an important topic, given the role of self-efficacy in successfully manage anxiety and stress

(Bandura, 1982) and that it has been proven to effectively contribute to well-being (Karademas, 2006; Lunenburg, 2011).

The construct of self-efficacy was originally developed as an important component in Bandura's learning theory (Ashford & LeCroy, 2010), which later was renamed social cognitive theory (Bandura, 2011). Self-efficacy is a key construct of Bandura's social cognitive theory (Luszczynska & Schwarzer, 2005), and it plays a central role in the mechanism of self-directedness (Bandura, 1991). Self-efficacy is also one type of expectancy that helps determine motivation and behavior (Conner & Norman, 2005). According to Bandura (1994), self-efficacy is "people's beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives" (p.72). Bandura (1977) considered the concept of efficacy a sort of conviction or belief that a person can achieve goals. Belief in one's self-efficacy can play a role in motivation, accomplishments, and even emotional arousal (Bandura, 1977). A strong sense of self-efficacy helps in overcoming life's challenges and obstacles (Bandura, 1977) and fostering more active coping strategies that contribute to better responses to anxiety and stress (Bandura, 1982).

Considering that cognitive capabilities decline with age (Glisky, 2007), it is highly possible that the level of self-efficacy or belief in personal efficacy of older adults is relatively low. A weak sense of self-efficacy can decrease the level of life satisfaction of older adults by increasing their vulnerability to stress and depression and blocking the development of social support (Bandura, 1994).

Self-efficacy affects all aspects of human behavior in varied life domains (Bandura, 1977; Grembowski et al., 1993), and its effectiveness has been examined in many academic fields (Lunenburg, 2011). Research on self-efficacy was once dominated by a focus on young

and middle-aged adults (Grebowski et al., 1993). However, with the rapidly increasing number of older adults, there have been considerable recent scholarly efforts aiming to apply self-efficacy theory to older adults. For older adults, self-efficacy plays an essential role in lowering health risks and improving health (Grebowski et al., 1993), initiating and maintaining physical activity (Lee et al., 2008), and motivating social activities (Perkins et al., 2008). That is, self-efficacy is a central aspect of older adults' health and physical and social behaviors, and it leads to benefits for individual well-being. Health behaviors are the most studied area in self-efficacy research, and most studies have found beneficial effects of self-efficacy on older adults' health behavior and health status (Grebowski et al., 1993). Thus, older adults who have a strong sense of self-efficacy are more likely to acquire or maintain protective health behaviors (Grebowski et al., 1993). Self-efficacy has also been considered an important predictor of the physical behaviors of older adults (McAuley & Blissmer, 2000), and some studies have suggested self-efficacy plays a role in enhancing physical activities (Lee et al., 2008). Self-efficacy is strongly associated with the frequency of social activities (Perkins et al., 2008), which is directly related to individual life satisfaction (Helliwell & Putnam, 2004).

Self-efficacy can have a role as a remedial strategy to reduce the effects of ageism on the productive engagement of older adults after it occurs. In addition to self-efficacy's role as a predictor, many attempts have been made to examine the self-efficacy of older adults as a moderator or a mediator. However, no research has examined the role of self-efficacy in the relationship between ageism and the productive engagement of older adults. Nevertheless, some previous studies have examined how self-efficacy mediates or moderates between a certain predictor and the life satisfaction of older adults. Maciejewski et al. (2000) found that self-efficacy significantly mitigated the association between stressful life events and symptoms of

depression. McAuley et al. (2006) suggested a possible mediational role of self-efficacy between physical activity and quality of life among older adults. Rejeski and Mihalko (2001) also presented the self-efficacy of older adults as a potential mediator or moderator between physical activity and quality of life.

### **Summary of Research Gaps**

Although existing theoretical and empirical discussions support the negative effects of ageism, there is not yet a clear understanding of the relationship between ageism and productive engagement. Theories reviewed and applied in much of the literature on ageism and productive engagement tend to be descriptive, featuring only limited discussions on how ageism influences older adults' productive engagement. Supportive empirical evidence for the relationship between ageism and productive engagement is not sufficient.

More specifically, given the complex and various pathways suggested in this literature that depicts the effects of ageism on productive engagement, it would be extremely difficult to test in its complete form. There are many factors that should be considered when it comes to productive engagement, but research has mostly focused on ageism at work. Considerable empirical support exists for risks of ageism that impede job performance at the workplace; other productive engagement such as volunteering, caregiving, and informal help received less scholarly attention. As previously discussed, the benefits of such engagement have become increasingly important.

Inconsistency across studies in terms of productive engagement's conceptualization and measurement is one of the main challenges in this research area. The meaning of productive engagement is often implied rather than clearly delineated. While there is a general consensus on

the definition of productive engagement, the construction of its specific dimensions and transformation of variables into measurable factors have varied widely.

A review of the empirical literature indicates a potential problem with representativeness and inference. Most research did not fully present how they select their samples, and some studies followed non-probability sampling methods. Therefore, it is not clear that what is found as true for the sample is also likely to be true for the population from which the sample was drawn. How accurately we can generalize the results from a given sample to the population depends on the representativeness of the sample (Krysiak & Finn, 2013). The selected studies for the review are mainly explanatory research that predicts how ageism affects productive engagement. In this type of research, an ideal sampling approach is a probability sampling that contributes to strong generalization and accretes inference with low sampling error. Besides, it is questionable whether the sample numbers were sufficient to adequately represent the population. Since there is no national data set or census data regarding ageism and its effect on productive engagement, most research used a relatively small number of samples. The small sample size might lead to low statistical power that reduces the chance of detecting significant results between variables.

To encourage productive engagement, we must address the factors that encourage ageism and mitigate the negative effects of ageism on productive engagement. The importance of reducing or preventing ageism is often noted, but a specific method or variable that may help to reduce ageism has rarely been presented. More efforts need to be made to build a literature base that can be used to guide future research on the factors that may mediate or moderate the effects of ageism. Effective mediators and moderators against ageism provide the evidence for social work policy and practice.

This study contributes to filling several gaps in the literature. It provides empirical evidence to illuminate the relationship between ageism and productive engagement. The HRS data allowed for examining multiple arenas for productive engagement such as work, volunteer, care, and informal help. I scrutinize various facets of productive engagement using a robust sample that is somewhat racially and ethnically diverse. I examine mediating and moderating factors that will potentially affect the relationship between ageism and productive engagement.

## Chapter 3: Methods

### Conceptual Models and Hypotheses

The Risks of Ageism Model (RAM) by Swift et al. (2017) suggests that ageism and negative attitudes toward age may impede productive engagement for older adults. The theoretical literature reviewed in previous chapters suggests that older adults who experience ageism might have lower participation rates for various activities, including productive engagement (Goll et al., 2015). However, no studies to date have empirically examined whether ageism is related to productive engagement in later life. This may be the first study to explore this relationship empirically. Additionally, this study examines how intergenerational contact affects the relationship between ageism and productive engagement and explores the potential mediating role of self-efficacy.

#### *Direct Effects of Ageism on Productive Engagement*

The prediction by the RAM of the influence of ageism on the productive engagement of older adults is verified first. The RAM supports the idea that ageism is negatively associated with productive engagement in later life. In this study, I assume a unidirectional relationship between ageism and productive engagement. However, from a theoretical point of view, bidirectional relationships can exist between the two. For example, social identity theory posits that negative bias can develop between groups through repeated adverse social interactions (Bodner, 2009). Ageism is highly manifested in areas that are most closely associated with productive activities, such as the workplace and within families, societies, and cultures (Macdonald & Levy, 2016). My review of the literature identified several theoretical and empirical studies that indicated a possible negative influence for ageism on productive engagement as well (Anderson & Dabelko-Schoeny, 2010; Bayl-Smith & Griffin, 2014; & Morrow-Howell et al., 2015).

*Research Question 1. How does ageism affect engagement in productive activities of older adults?*

Hypothesis 1.1. Older adults who experience age discrimination more will engage less in productive activities.

Hypothesis 1.2. Older adults who experience age discrimination more will engage less in work.

Hypothesis 1.3. Older adults who experience age discrimination more will engage less in volunteering.

Hypothesis 1.4. Older adults who experience age discrimination more will engage less in grandchild caregiving.

Hypothesis 1.5. Older adults who experience age discrimination more will engage less in informal help.

Hypothesis 1.6. Older adults who report more negative perception of their own aging will engage less in productive activities.

Hypothesis 1.7. Older adults who report more negative perception of their own aging will engage less in work.

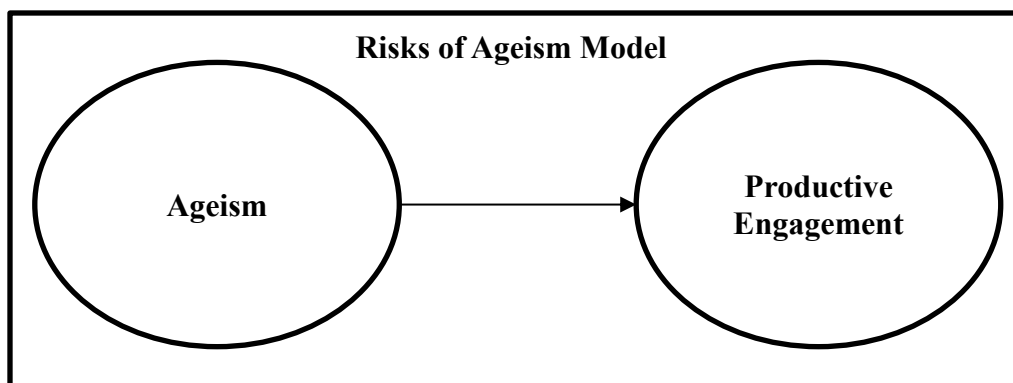
Hypothesis 1.8. Older adults who report more negative perception of their own aging will engage less in volunteering.

Hypothesis 1.9. Older adults who report more negative perception of their own aging will engage less in grandchild caregiving.

Hypothesis 1.10. Older adults who report more negative perception of their own aging will engage less in informal help.

**Figure 1**

*Direct Effects of Ageism on Productive Engagement*



***Mediating Effects of Self-Efficacy***

The mechanism linking ageism and productive engagement can be understood more clearly by investigating the mediating effects of self-efficacy. Mediation here refers to the effects of ageism on productive engagement through self-efficacy. In this study, self-efficacy was defined as older adults' beliefs about their capabilities to achieve goals. Enhanced self-efficacy may prevent older adults from internalizing their negative experiences of ageism. That is, their self-efficacy might be a buffer against the psychological anxiety or distress that originates from ageism (Bandura, 1982), and it might play a role in mitigating the negative relationship between ageism and productive engagement. Theoretical discussions have supported the mediating effects of self-efficacy, but no empirical study has yet examined this question.

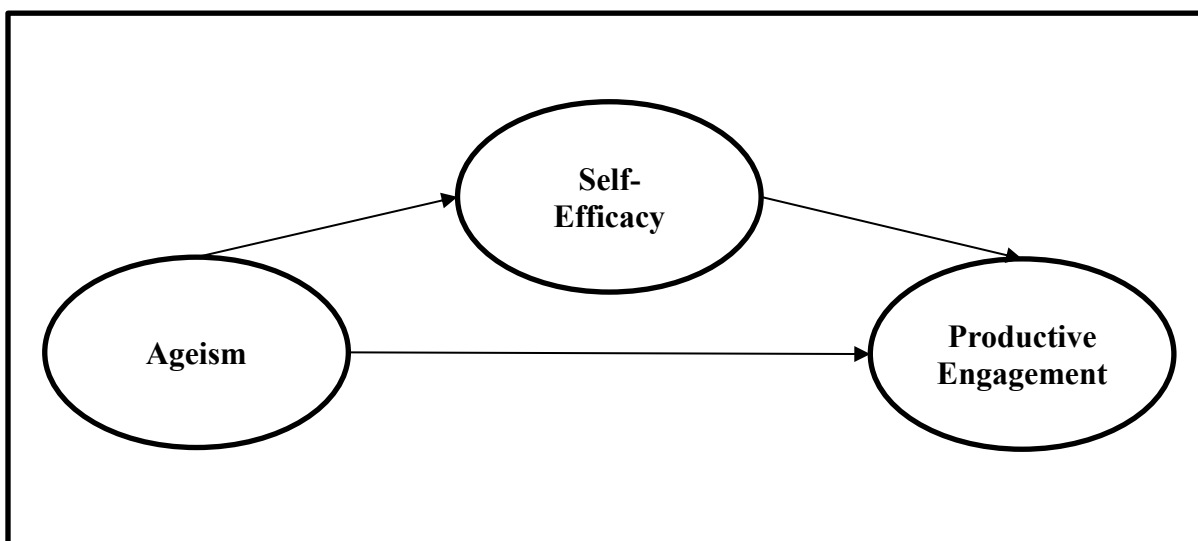
*Research Question 2. Does self-efficacy mediate the relationship between ageism and productive engagement?*

Hypothesis 2.1. Self-efficacy mediates the relationship between age discrimination and productive engagement.

Hypothesis 2.2. Self-efficacy mediates the relationship between negative self-perception of aging and productive engagement.

**Figure 2**

*Mediating Effects of Self-Perception of Aging and Self-Efficacy*



*Moderating Effects of Intergenerational Contact*

The moderating effects of intergenerational contact on relationships between ageism and productive engagement were examined. Specifically, the group differences by intergenerational contact frequency were compared, and how these differences affect the relationship between ageism and productive engagement was examined. A multigroup analysis SEM approach was used to compare the group means of latent constructs. The literature suggests that frequent well-managed intergenerational contact on a long-term basis could lead to improved understanding between older adults and younger people, which improves the image of older adults and reduces the negative prejudices that are associated with them (Drury et al., 2016; Iweins et al., 2013).

*Research Question 3. What differences are there in the relationship between ageism and productive engagement between older adults with a high*

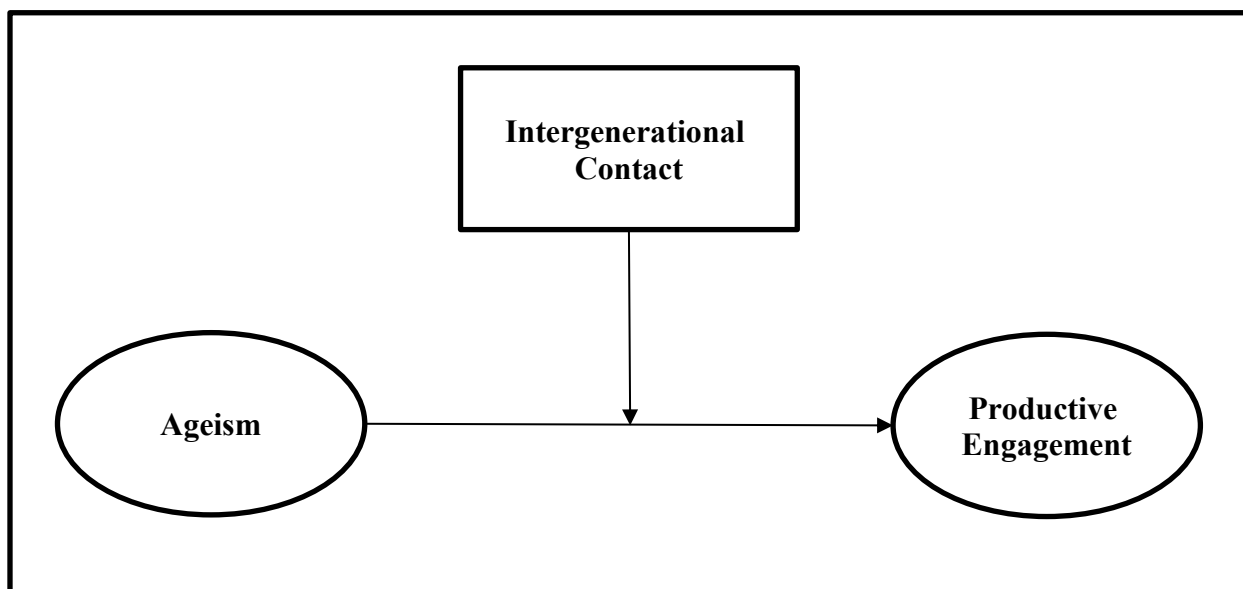
*intergenerational contact frequency and others with a low frequency of intergenerational contact?*

Hypothesis 3.1. The effects of age discrimination on productive engagement are smaller for people with a high frequency of intergenerational contact frequency.

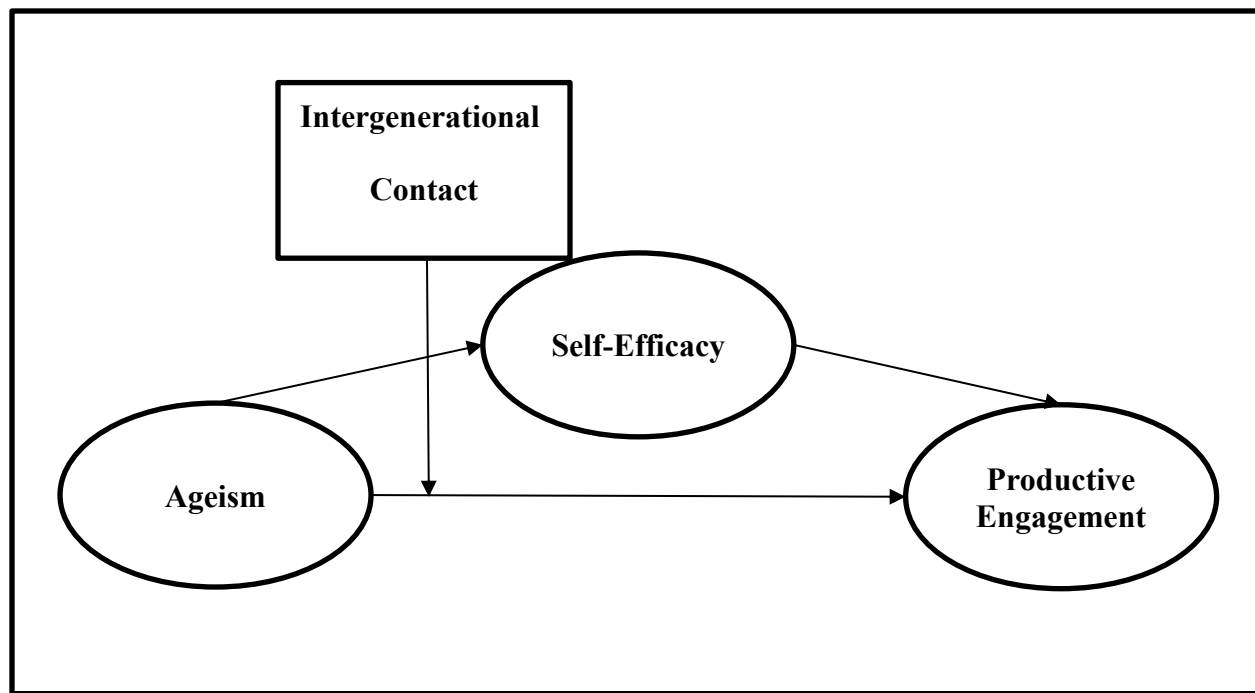
Hypothesis 3.2. The effects of negative self-perception of aging on productive engagement are smaller for people with a high frequency of intergenerational contact.

### Figure 3

*Moderating Effects of Intergenerational Contact*



The full conceptual model below depicts mostly unidirectional relationships between ageism and productive engagement and its relationship with self-efficacy and intergenerational contact. Because some of the relationships may proceed in the opposite way from those depicted here, the directionality was examined using SEM.

**Figure 4***Full Conceptual Model***Study Design***Data Source*

This study used secondary data from the 2014 and 2016 datasets of the Health and Retirement Study (HRS), a representative longitudinal survey of Americans over the age of 50 that began in 1992. The survey is conducted every two years by the Survey Research Center of the Institute for Social Research of the University of Michigan, in collaboration with the National Institute on Aging and the Social Security Administration (Steffick, 2000). In early 1988, an Ad Hoc Advisory Panel convened by the NIA (National Institutes of Health) recommended the initiation of a new, long-term study to examine how the changing health of older adults health interacts with their social, economic, and psychological factors and with their retirement decisions (Karp, 2007). The original sampling frame for the HRS included

approximately 22,000 Americans born between 1931 and 1941. Every six years, a new cohort is selected and added to the original sample (Kim, 2015). A multistage area probability design involving geographical stratification is used, and the survey oversamples households containing Black, Hispanic, and Asian individuals (Sonnegga et al., 2014).

The main survey, also called the core survey, has been conducted every even-numbered year since 1992 to collect information on the following factors related to well-being among older adults: health and use of health services, income and wealth, employment, family connections, and functional limitations (Sonnegga et al., 2014). The Psychosocial and Lifestyle Questionnaire (PLQ) was added in 2004 and included social relationships, well-being, and lifestyle (Smith et al., 2017). Supplementary surveys are also conducted during even-numbered years to examine a range of topics in subsamples of 3,000 to 7,000 participants from the main sample. The Consumption and Activities Mail Survey is a supplementary survey to the HRS that tracks changes in spending and activities throughout retirement (Karp, 2007). The main survey data are mostly gathered in face-to-face interviews, while the supplemental surveys are done via mail. The initial contact survey is conducted in an in-person interview in the study subject's home, but follow-up interviews can be done either in person or over the phone. This study used the demographics, health status, assets, employment, and psychosocial/lifestyle components derived in the 2014 and the 2016 HRS core surveys.

### *Sample*

The sample included adults aged 50 and older who responded to the 2014 and the 2016 HRS core surveys. For the intergenerational contact and grandchild caregiving measures, only respondents who indicated having a grandchild were included. I used data on age discrimination, negative self-perception of aging, and self-efficacy. The PLQ is a leave-behind questionnaire that

collects in-depth psychosocial information on well-being, lifestyle, and self-related beliefs (Smith et al., 2017). In each wave, only half of the core HRS sample answers the PLQ, and the other half does so in the next wave.

The present sample was drawn from HRS respondents eligible for the PLQ in 2014 (7,541) and 2016 (6,370), combined into one dataset composed of 13,911 respondents. Preliminary analyses revealed no significant differences between the 2014 and 2016 PLQ half-samples in terms of SES or other demographic measures, ageism, self-efficacy, or rate of involvement in paid work, volunteering, or helping. Of the 13,911 participants, the number of respondents aged 50 and over with a grandchild was 9,948.

As Table 1 shows, the productive engagement variables had the most missing data. However, the missing values of each variable amounted to less than 2.5%, and they were classified as missing at random (see Table 1). Such a value is not missing in a way that relates to other missing data but may depend upon some other unobserved variable (Scheffer, 2002). Advanced imputation techniques such as SPSS multiple imputations (MI) were performed because this approach reflects variability in participants' missing responses more accurately. It resolves the uncertainty of missing data through multiple imputations (Musil et al., 2002). However, after multiple imputations, it appears that the multiple imputations lowered the coefficient of determination statistics, such as the R-squared value (approximately 0.1-0.5). For handling missing data in SEM analysis, full-information maximum likelihood (FIML) is preferred because it can handle appropriately and efficiently missing indicators with less biased parameter estimates without deleting observed variables to correct Type 1 error and increase statistical power (Cham et al., 2017). However, considering the negligible amount of missing data and the only slightly different results that can be considered inconsequential from each

imputation (Schafer, 1999), the pairwise deletion may be a better approach to handling the missing observations. Therefore, to preserve the accuracy of the information, I used pairwise deletion to account for the missing data.

After this procedure, there were 8796 samples.

**Table 1**

*The Pattern of Missing Variables (n=9948)*

Domains	Variables	Total n	Valid n	Missing n	% of missing
Age discrimination	ad1	9948	9948	0	0.0
	ad2	9948	9948	0	0.0
	ad3	9948	9948	0	0.0
	ad4	9948	9948	0	0.0
	ad5	9948	9948	0	0.0
	ad6	9947	9946	1	0.0
Negative self-perception of aging	pa1	9871	9794	77	0.8
	pa3	9861	9774	87	0.9
	pa7	9900	9852	48	0.5
	pa8	9901	9854	47	0.5
Self-efficacy	se1	9834	9720	114	1.1
	se2	9789	9630	159	1.6
	se3	9804	9660	144	1.4
	se4	9818	9688	130	1.3
	se5	9832	9716	116	1.2
	se6	9852	9756	96	1.0
	se7	9851	9754	97	1.0
	se8	9816	9684	132	1.3
	se9	9843	9738	105	1.1
	se10	9860	9772	88	0.9
Productive engagement	Work	9732	9516	216	2.2
	Volunteer	9706	9464	242	2.4
	Grandchild caregiving	9709	9470	239	2.4
	Informal help	9927	9906	21	0.2

**Variables**

**Ageism.** The negative self-perception of aging measure was used for the psychological components such as stereotypes and prejudice of ageism, and the age discrimination measure was used for the behavioral component of ageism. Cronbach's alpha for all items was 0.781.

*Negative self-perception of aging.* Negative self-perception of aging was measured using four items. Two were adopted from the Attitude Toward Own Aging subscale of the Philadelphia Geriatric Center Morale Scale, and the other two were from the Berlin Aging Study. The participants were asked to report the extent to which they agreed with the following statements: 1) “Things keep getting worse as I get older,” 2) “The older I get, the more useless I feel,” 3) “The older I get, the more I have had to stop doing things that I liked,” and 4) “Getting older has brought with it many things that I do not like.” Responses were given on a 6-point Likert scale (1 = strongly disagree to 6 = strongly agree).

*Age discrimination.* Participants were asked how often they experience everyday discrimination. This measure used six statements, including, 1) “You are treated with less courtesy or respect than other people,” 2) “You receive poorer service than other people at restaurants or stores,” 3) “People act as if they think you are not smart,” 4) “People act as if they are afraid of you,” 5) “You are threatened or harassed,” and 6) “You receive poorer service or treatment than other people from doctors or hospitals.” These items were assessed on a 6-point scale (1 = never, 2 = less than once a year, 3 = a few times a year, 4 = a few times a month, 5 = at least once a week, and 6 = almost every day). This measure was based on the Everyday Discrimination Scale developed by Williams et al. (1997), and it is widely used. If participants reported any experience of these forms of discrimination, they were then asked whether they thought the discrimination was due to their gender, race, age, physical disability, and/or other characteristics. Participants who reported being discriminated against because of their age were coded as 1, and those who did not report age discrimination were coded as 0.

**Productive Engagement.** Productive engagement was operationalized in four constructs: formal paid work, volunteering (formal or informal), grandchild caregiving, and informal help. A

five-category variable for paid work was created to measure the time respondents committed to work. “Hours of paid work per week” and “How many weeks did you work in the last 12 months?” were used. These two variables were multiplied to measure a total for hours of paid work. The responses were recoded into four categories (0 = None, 1 = 1–1040 hours, 2 = 1041–2080 hours, and 3 = 2081+ hours). Two items were selected for volunteering: “Have you spent any time in the past 12 months doing volunteer work for religious, educational, health-related or other charitable organizations?” and “Total hours of volunteering.” A four-category variable was created using these variables (0 = none, 1 = 1–100 hours, 2 = 101–200 hours, 3 = 201+ hours).

Hour of grandchild caregiving per year was used to measure caregiving, and a five-category variable was created (0 = 0–100 hours, 1 = 101–200 hours, 2 = 201–300 hours, 3 = 301–400 hours, and 4 = 401+ hours). To measure informal help, respondents were asked “Have you spent any time in the past 12 months helping friends, neighbors, or relatives who did not live with you and did not pay you for the help?” A four-category variable was created (0 = none, 1 = 1–100 hours, 2 = 101–200 hours, 3 = 201+ hours). Figure 5 graphically depicts how respondents answered for productive engagement questions. 31.5% of the respondents were engaged in any work, and 33.6% were engaged in any volunteering activities. 29.4% of the respondents involved in any grandchild caregiving, and 48.2% involved in any informal help.

**Figure 5***Histograms for Productive Engagement*

**Self-efficacy.** Self-efficacy assessment in HRS was drawn from a modified version of the sense of control scale of the Midlife Developmental Inventory (MIDI) (Lachman & Weaver, 1998). A total of 10 items were used to measure perceived mastery (e.g., I can do the things that I want to do) and perceived constraint/self-efficacy (e.g., What happens in my life is often beyond my control). Responses were assessed on a 6-point Likert scale from strongly disagree

(1) to strongly agree (6). Perceived constraint and self-efficacy were reverse coded, and a higher value was taken to indicate stronger self-efficacy. Cronbach's alpha for these 10 items was 0.868.

**Intergenerational Contact.** Intergenerational contact was derived from HRS family data, with the question, "In the past 12 months, how often have you had contact either in person or by phone, mail, or e-mail with your child?" Participants provided the number of contact occasions. The number of answer variables increased in relation to the number of children. Multiple responses to this question were combined to measure individual contact frequency. The continuous results were re-coded into a three-category variable: (0 = no contact in the past year, 1 = 1–9 times a year, 2 = 10+ times a year).

**Covariates.** Several variables were included as covariates due to their associations with productive engagement: age, gender, race, Hispanic ethnicity, education, marital status, self-rated health, and household income. Age was measured in years, and gender was a binary variable (0 = male, 1 = female). Hispanic ethnicity was a binary variable (0 = non-Hispanic, 1 = Hispanic). Race was a categorical variable, with the categories of White/Caucasian, Black/African American, and Other. This categorical variable was dummy coded into two dichotomous variables (0 = White, 1 = Black/African American; 0 = White, and 1 = Other). Education was measured as years of schooling in the United States, and it was re-coded as a four-level ordinal variable (0 = less than high school, 1 = high school graduate/GED, 2 = some college, and 3 = college and above). Marital status was recorded as a binary variable (0 = married, 1 = divorced, widowed, and never married). Self-rated general health status was measured using a single item with a 5-point scale ranging from 1 (poor) to 5 (excellent). Household income was generated based on the RAND HRS variable for total household income, HwATOT.

## **Analysis Plan**

The data were analyzed using the statistical programs SPSS 25.0, and Mplus 7.0. Descriptive analyses were conducted using SPSS to describe the demographics of the sample, and basic statistical information such as frequencies, percentages, means, standard deviations, skewness, and kurtosis was obtained for the study variables. One-way analysis of variance was used to assess differences in ageism by gender, age group, race, ethnicity, marital status, educational level, or self-rated health. Multiple regression analyses were conducted in SPSS to examine the direct relationship between ageism and productive engagement, controlling other covariates. The SEM analysis was performed using Mplus 7.0 to test the theoretical model. SEM was chosen for its ability to test complex models that include assessments of measurement structure and direct and indirect effects among variables, including latent variables (Tarka, 2018). Both confirmatory factor analysis and path analysis were conducted, and the potential mediating effects of self-efficacy were tested using SEM. Using the second-order factor model, the relationship of ageism as a single factor, which includes the different effects of the components age discrimination and negative perception of aging, to productive engagement was investigated. Additionally, multiple group analysis was conducted with SEM to examine the possible relationship differences between ageism and productive engagement across groups in terms of contact frequency.

### ***Direct Effects through Multiple Regression Analysis***

For research question 1, to examine the relationship between ageism and productive engagement, multiple regression analyses were performed. Before they were conducted, exploratory factor analysis (EFA) was performed to identify the factors for the measures of experienced age discrimination, negative self-perception of aging, and self-efficacy, and

Cronbach's alpha was calculated to test the internal reliability of these resulting scales.

Correlation analysis was carried out between the independent variables and the control variables to evaluate multicollinearity prior to multiple regression analysis. Further analysis was conducted with variance inflation factors (VIF) and tolerance to judge the multicollinearity of the variables. Productive engagement was regressed on ageism with control for age, gender, race, Hispanic ethnicity, education, marital status, self-rated health, and household income.

Four regression models were created to examine how ageism affects the productive engagement components of work, volunteering, grandchild caregiving, and informal help.

### ***Structural Equation Modeling***

SEM was conducted to examine the pathways between ageism and productive engagement. In SEM, equations given with parameters are used to analyze the relationship between theoretical constructs expressed as latent variables and measures expressed as observed variables (Jöreskog & Sörbom, 1993). The relationship between latent and observed variables appears as a causal relationship or correlation. It is called an SEM in the sense that the structure, magnitude, and direction of this relationship are expressed in the form of a system of equations (Tarka, 2018).

SEM is a comprehensive approach that is bound with a broad class of related statistical analyses to reveal relationships among observed and latent variables (Hoyle, 1995). SEM is a multivariate data analysis method that can analyze dynamic and varied theories of specific phenomena, incorporating correlation coefficients, covariance coefficients, multiple regression analyses, path analyses, and factor analyses (Musil et al., 1998). SEM is more flexible than other statistical methods in that it can handle both observed and latent variables and assign multiple dependent variables (Sarstedt et al., 2014).

An SEM, or more specifically, structural regression (SR), model was chosen for its ability to test a theoretical model and investigate relationships among a set of observed and latent variables. SR models integrate confirmatory factor analysis and path analysis (Schreiber et al., 2006). In confirmatory factor analysis, the validity of the variables and models based on the theory can be confirmed in empirical data (Schreiber et al., 2006). Factors are hypothetical and latent constructs (Bollen, 2002). Those that are not directly observed are called latent variables, and this category is free of measurement error (Bollen, 2002). Path analysis estimates and tests the strength of relationships. In path analysis, the degree of explanation of a causal model composed of latent variables can be understood (Tarka, 2018). In other words, this allows the relationship between the independent variable and the dependent variable to be estimated as well as the relationship between dependent variables to develop a latent variable that is not observed (Lee, 2005).

To form and verify a clear factor structure, confirmatory factor analysis (CFA), which is also used to develop measurement models with an acceptable fit to the data, was conducted. Pathways were examined between ageism, self-efficacy, and productive engagement. Direct and indirect effects were estimated.

**SEM Data Estimation.** Many estimation methods can be used in SEM. Maximum likelihood estimation (ML), general least squares, and weighted least squares (WLS) are the most commonly used techniques to estimate SEM models (Fan et al., 2016). ML, which is the default estimator in Mplus, is the most commonly used estimation method for SEM analysis due to its efficiency and flexibility (Bae, 2016). ML mostly leads to unbiased estimates in larger samples (Muthén & Muthén, 2017). That is, it minimizes the fit function, which describes the discrepancy between the sample covariance matrix and the model-implied covariance matrix

(Schermelleh-Engel et al., 2003). However, ML requires strong assumptions about the structure of the data. It assumes multivariate normality (Bae, 2016). For data with nonnormal continuous variables, ML might yield biased estimates of standard errors for parameter tests and might detrimentally affect SEM fit statistics and chi-square testing (Muthén & Muthén, 2017). Our data, specifically the indicators for age discrimination, were non-normally distributed (see table 2). Univariate normality testing indicated severe violations of skewness and kurtosis for most indicators for age discrimination. Skewness ranges of  $> \pm 2$  and kurtosis ranges of  $> \pm 7$  are considered as moderate or severe non-normality (West et al., 1995). This is because of the nature of this variable, which included a large number of responses that indicated respondents had never having experienced age discrimination, totaling about 72% of participants.

Therefore, Maximum likelihood estimation with robust standard errors (MLR) was chosen to estimate the model (Bae, 2016). MLR is a more robust estimation, which supplements some issues that unadjusted ML may have, such as the complexity and instability of its weight matrix, its minimum sample size, and underestimation of estimated standard error (Muthén & Kaplan, 1992). MLR is a more suitable estimation method for analyzing non-normal data and non-independence of observations (Muthén & Muthén, 2017).

**Table 2**

*Means, Standard Deviations, Skewness, and Kurtosis of Variables (n=8796)*

Domains	Variables	Mean	SD	Skewness	Kurtosis
Age Discrimination	ad1	0.50	1.06	2.28	4.78
	ad2	0.30	0.76	3.02	9.92
	ad3	0.45	1.00	2.51	6.19
	ad4	0.17	0.64	4.49	22.33
	ad5	0.13	0.51	5.16	31.47
	ad6	0.15	0.53	4.46	24.34
	pa1	2.35	1.60	-0.10	-1.19
	pa3	1.50	1.61	0.70	-0.79

Negative Self-perception of aging	pa7	2.62	1.64	-0.22	-1.14
	pa8	2.84	1.58	-0.37	-0.91
Self-efficacy	se1	4.68	1.50	-0.88	-0.40
	se2	5.04	1.43	-1.43	0.94
	se3	4.61	1.54	-0.86	-0.44
	se4	4.82	1.48	-1.13	0.17
	se5	5.01	1.41	-1.43	1.08
	se6	4.77	1.35	-1.19	0.74
	se7	4.90	1.25	-1.35	1.48
	se8	4.55	1.37	-0.93	0.14
	se9	4.72	1.38	-1.14	0.57
	se10	4.66	1.41	-1.08	0.35
Productive engagement	Work	0.67	0.99	1.11	-0.24
	Volunteer	0.67	1.06	1.31	0.16
	Grandchild caregiving	0.62	1.08	1.45	0.47
	Informal help	0.80	1.00	1.01	-0.16

**The Second-Order Factor Model.** Two sub-constructs of ageism were considered in this study: its psychological components and its behavioral components. A second-order factor model was used to measure ageism. As described in chapter 2, the concept of ageism must be constructed with multidimensional factors to enable a more in-depth examination. A second-order or higher-order-factor model is a statistical approach that can be used to verify the structures of multidimensional factors within the framework of the SEM. A second-order CFA is used “to confirm that the theorized construct in a study loads into certain number of underlying sub-constructs or components” (Awang, 2012, p. 163). A second-order model was chosen for its ability to assess several related constructs that seem distinct but can be accounted for with a shared underlying higher-order (Chen et al., 2005). Many psychological constructs have been hypothesized to have hierarchical structures among latent factors (Byrne, 2005). For instance, the concept of successful aging is typically modeled in this way. Kim’s (2013) study constructed the concept of successful aging with four latent variables as first-order factors.

A second-order confirmatory factor model of ageism was designed and is shown in Figure 6. A second-order factor is related to two first-order factors that can be measured by their respective observed variables. There were two first-order factors, namely, age discrimination and negative self-perception of aging, and these were identified to load on one second-order factor, ageism. The second-order concept does not have a measurement variable but is linked to measuring lower-order concepts indirectly. That is, the influence of the second-order factor on the first-order factors is the main interest of the second-order measurement model. The commonality of (correlations among) the first-order factors are accounted for by the second-order factor. For the first-order factors, there were no cross-loadings, and there was no correlated uniqueness. LISREL representation of the factor structure between the second-order and first-order factors is below:

$$\eta = \Gamma\xi + \zeta$$

$\eta$  : first-order factors (endogenous latent variables): age discrimination and negative self-perception of aging

$\xi$  : second-order factor (exogenous latent variables): ageism

$\Gamma$  : factor loadings of the first-order factors loading on second-order factors

$\zeta$  : disturbances of the first-order factors

LISREL representation of the factor structure between the first-order factors and items:

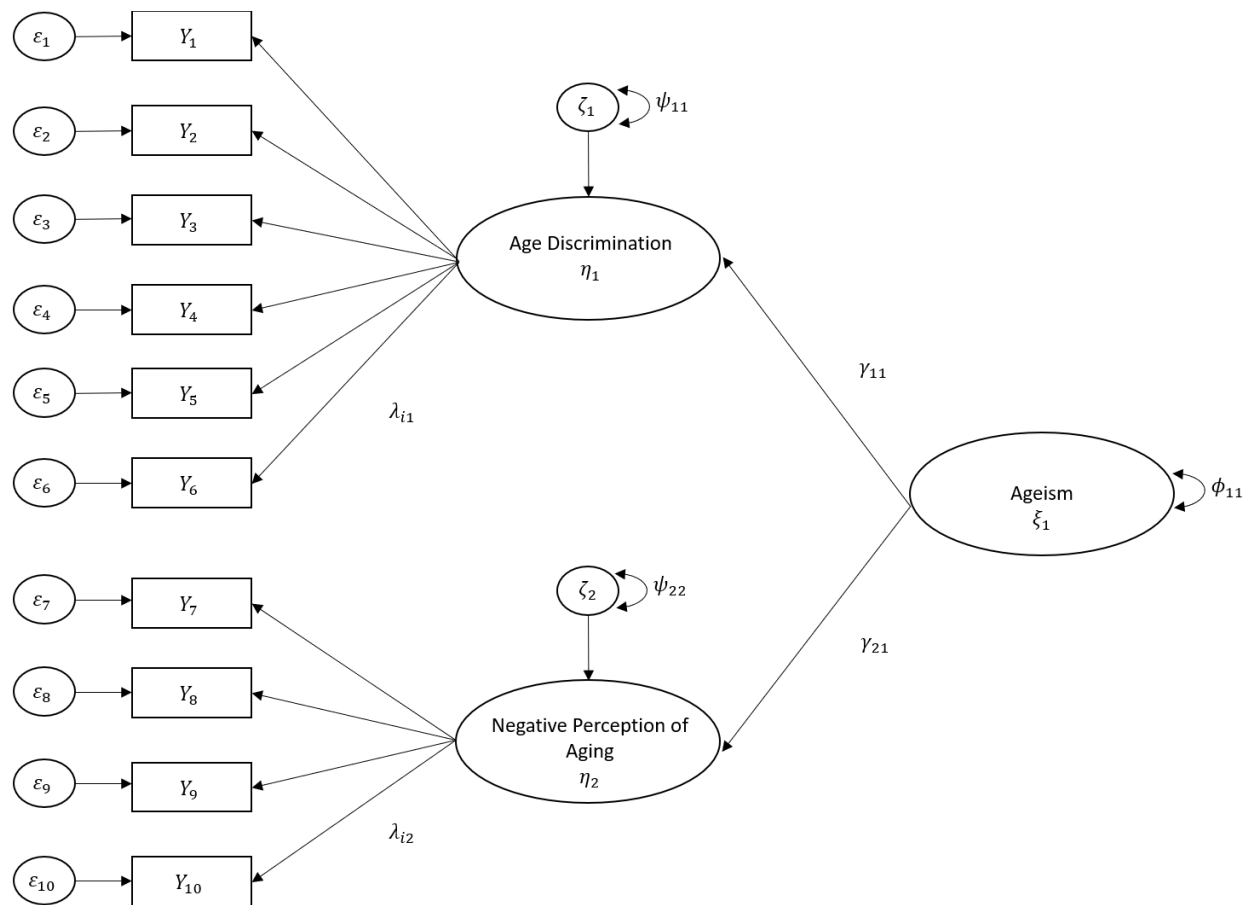
$$Y = \Lambda\eta + \epsilon$$

$Y$  : items of first-order factors (endogenous latent variables)

$\eta$  : first-order factors (endogenous latent variables)

$\Lambda$  : factor loadings of the items loading on first-order factors

$\epsilon$  : unique factors of the items

**Figure 6***Second-Order Confirmatory Factor Model of Ageism*

**Mediation Analysis.** The potential mediating effects of self-efficacy were tested with SEM (Baron & Kenny, 1986). Specifically, indirect effect estimates using the Sobel test and bias-corrected (BC) bootstrapped confidence intervals (CIs) were examined to evaluate the significance of the mediating effect. The Sobel test is widely used to verify mediating effects because it directly calculates them and verifies their magnitude (Koopman et al., 2015). The Sobel test assumes and requires that the sample is normally distributed (Koopman et al., 2015). However, sample distributions used in mediating effects tests tend to be biased rather than distributed normally (Koopman et al., 2015). This reduces the ability to capture statistically

significant mediating effects. Since age-discrimination was not normally distributed, bootstrapping was used to test the mediating effects of self-efficacy. This is a nonparametric method that estimates a sampling distribution by repeatedly resampling from the original data (Bland & Altman, 2015). In this way, the approximate standard error, confidence interval, and significance probability of the estimated sample distribution can be calculated (Preacher & Hayes, 2008). Bootstrapping does not rely on the assumption of normality. It calculates a 95% confidence interval for the estimate of the mediating effect, calculated through bootstrapping iterations (Bland & Altman, 2015). Mediation is determined by whether 0 is included in the 95% CI of the re-extracted sample distribution (Bae, 2016). There are two main techniques for calculating a confidence interval, the percentile method and the bias-corrected method (Bae, 2016). Bias-corrected bootstrapped CIs were examined because they are better suited to correcting both bias and skewness in the distribution of the bootstrapped estimate (Haukoos & Lewis, 2005).

**Multiple-Group SEM Analysis.** Multiple group analysis was performed in the SEM framework to test possible structural differences between ageism and productive engagement in relation to intergenerational contact. Multiple group analysis is used to analyze two or more groups to determine whether there is a statistically significant difference in path coefficients between groups (Jöreskog & Sörbom, 1993). To investigate the frequency of differences in intergenerational contact differences in older adults' ageism in affecting productive engagement, comparative SEM models were developed. Three groups were generated by intergeneration contact frequency: those who indicated no intergenerational contact, those who had contact with their child(ren) less than ten times per year, and those who had contact with their child(ren) more than ten times per year.

SEM was estimated and analyzed for each group following the two steps (Bae, 2016). In the first step, with unconstrained SEM models across the groups, all structural path coefficients were freely estimated without imposing equality constraints and were developed and evaluated. In the second step, constrained SEM models across all the groups, with all structural path coefficients constrained with equality constraints for all paths, were developed and evaluated. Path coefficients and model fit were compared across groups in both models from step 1 and step 2. MLR was used as the estimator, and the Satorra–Bentler scaled chi-squared test was used to estimate the chi-squared difference between the unconstrained SEM model and the constrained SEM model. Using the chi-squared difference, the significance of intergenerational contact as a moderating effect was examined.

## Chapter 4: Results

### Descriptive Statistics

The final sample before handling missing data was 9,948 people aged 50 years and over. The participants' mean age was 69.6 years; they were primarily female (62.8%), and most identified as Caucasian/White (73.4%). Participants with a high school diploma were the largest group by educational attainment (55.3%). About 59% indicated that they were married and living with a partner. The largest share self-rated their health as good (35%), very good (28.5%), or excellent (7.5%). While 8.8% had no intergenerational contact with their child(ren), 64.4% had contact with their child(ren) less than 10 times a year, and 26.9% had contact with their child(ren) on more than 10 occasions per year. Average household annual income was \$65,045.

Productive engagement was measured, and 69.5% of the sample were not engaged in any work in the last year. In the remainder, 7.9% worked less than 1,040 hours (20 hours per week), while 16.4% worked 1,041 to 2,080 hours (40 hours per week), and 6.2% worked 2,081 or more hours in the previous year. No volunteering was done by 66.4% of the sample, while 12.9% had slight engagement of fewer than 100 hours, and 8.2% had moderate engagement of 101 to 200 hours. Then, 12.4% were highly engaged, volunteering 201 or more hours over the last year. Of the total sample, 70.6% of the sample were not involved in any grandchild caregiving, while 8.5% showed slight engagement of fewer than 100 hours, and 3.9% were moderately engaged, caregiving for their grandchild(ren) for 101 to 200 hours over the previous year. Finally, 16.9% were highly engaged, with 201 or more grandchild caregiving hours.

Informal help was not provided by 51.8% of the sample, while 26.9% had slight engagement of fewer than 100 hours, 11.6% had moderate engagement with 101 to 200 hours, and 9.8% were highly engaged with 201 or more hours of informal help over the previous year.

Few reported age discrimination, with a mean of 0.3 on a 6-point scale, and 72.7% reported not having experienced age discrimination. Negative self-perception of aging was rated at 2.3 on a 6-point scale. Perceived self-efficacy was relatively high, with a mean of nearly 4.8 on a 6-point scale.

**Table 3**

*Descriptive Statistics*

Categorical Variables	Number	Percent (%)
Gender		
Male	3847	37.2
Female	6101	62.8
Total	9948	100.0
Race		
White/Caucasian	7307	73.4
Black or African American	1868	18.8
Other	779	7.8
Total	9948	100.0
Hispanic or Latino		
Non-Hispanic	8660	87.1
Hispanic	1288	12.9
Total	9948	100.0
Education		
Less than high school	1718	17.3
High school graduate	5499	55.3
College	1905	19.1
Graduate or above	826	8.3
Total	9948	100.0
Marital Status		
Divorced, widowed and never married	4110	41.3
Married	5838	58.7
Total	9948	100.0
Self-rated health		
Poor	675	6.8
Fair	2217	22.3
Good	3478	35.0
Very good	2832	28.5
Excellent	741	7.5
Total	9948	100.0
Intergenerational Contact		
No Contact	876	8.8

Categorical Variables	Number	Percent (%)
1-9 Times a Year	6405	64.4
10 Times or more	2667	26.9
Total	9948	100.0
Work Hour (Year)		
No Work	6764	69.5
1hr-1040hr (Part time)	768	7.9
1041hr-2080hr (Full time)	1599	16.4
2081hr or more	601	6.2
Total	9732	100.0
Volunteer (Year)		
No Volunteer	6447	66.4
1hr-100hr	1252	12.9
101hr-200	799	8.2
201hr or more	1208	12.4
Total	9706	100.0
Grandchild Caregiving (Year)		
No Caregiving	7031	70.6
1hr-100hr	848	8.5
101hr-200	388	3.9
201hr or more	1680	16.9
Total	9948	100.0
Informal Help to Others (Year)		
No Informal Help	5025	51.8
1hr-100hr	2612	26.9
101hr-200	1124	11.6
201hr or more	948	9.8
Total	9709	100.0

Continuous Variable	Mean	SD	Min	Max
Age	69.6	10.3	50	104
Total Household Annual Income	\$65,045.9	98,331.0	0	\$2,395,272.8
Ageism (Age Discrimination)	0.3	0.6	0	5
Ageism (Negative Self-perception of Aging)	2.3	1.2	0	5
Self-efficacy	4.8	1.0	1	6

*Note.* Number of missing not included in the calculation of number, percent, or mean.

### Preliminary Analyses

One-way ANOVA tests were conducted to examine how ageism differs by gender, age, race, ethnicity, and marital status. The means for age discrimination and negative self-perception of aging were calculated. The assumption of homogeneity of variance between pairs of groups

was examined first using Levene's test for equality of variances, using SPSS 25. When the assumption was not met, the t statistics were computed without assuming homogeneity of variance between the groups. First, whether there were statistically significant differences in ageism according to gender was examined (Table 4). The results showed that differences in both age discrimination and negative self-perception of aging were statistically significant. They also suggest that males groups experienced age discrimination more often and had greater negative self-perception of aging than females.

**Table 4**

*ANOVA Test Result by Gender*

Measure	Male ( <i>n</i> = 3459)		Female ( <i>n</i> = 5337)		<i>F</i> (1, 8794)
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Ageism					
Age Discrimination	.30	.64	.27	.58	5.58**
Negative SP of Aging	2.36	1.21	2.31	1.22	3.94*

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

A one-way ANOVA test was conducted to observe any statistically significant differences in ageism according to age group (Table 5). In this test, the participants were divided into three age groups: 50 to 64 years old, 65 to 74 years old, and 75 years old and older. Both age discrimination and negative self-perception of aging varied substantially among the age groups, and these differences were statistically significant. The youngest of the three age groups experienced age discrimination more often and had the lowest level of negative level of self-perception of aging.

**Table 5***ANOVA Test Result by Age Group*

Measure	50-64 ( <i>n</i> = 3200)		65-74 ( <i>n</i> = 2557)		75+ ( <i>n</i> = 3039)		<i>F</i> (2,8793)
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
	Ageism						
Age Discrimination	.31	.68	.29	.60	.25	.53	8.01***
Negative SP of Aging	2.11	1.23	2.20	1.20	2.67	1.16	188.60***

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

A one-way ANOVA test was conducted to examine statistically significant differences in ageism according to race (Table 6). Only negative self-perception of aging varied among those groups, and the differences among groups were statistically significant. Participants of other races reported more negative perception of their own aging than White and Black or African American groups.

**Table 6***ANOVA Test Result by Race*

Measure	White/Caucasian ( <i>n</i> = 6540)		Black or African American ( <i>n</i> = 1601)		Other ( <i>n</i> = 655)		<i>F</i> (2, 8793)
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
	Ageism						
Age Discrimination	.28	.57	.32	.69	.29	.69	2.74
Negative Self-perception of Aging	2.38	1.21	2.1	1.22	2.44	1.30	34.60***

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

A one-way ANOVA test was conducted to examine whether there were statistically significant differences in ageism according to ethnicity (Table 7). Both age discrimination and negative self-perception of aging varied substantially between non-Hispanic and Hispanic respondents, and the differences between the groups were statistically significant. Hispanic

participants experienced age discrimination less often and reported more negative perception of their aging than non-Hispanic people.

**Table 7**

*ANOVA Test Result by Ethnicity*

Measure	Non-Hispanic ( <i>n</i> = 7718)		Hispanic ( <i>n</i> = 1078)		<i>F</i> (1, 8794)
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Ageism					
Age Discrimination	.29	.61	.23	.60	7.50**
Negative Self-perception of Aging	2.30	1.20	2.54	1.34	35.45***

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

A one-way ANOVA test was conducted to determine whether there were statistically significant differences in perception of ageism according to marital status (Table 8). Divorced, widowed, and never-married respondents experienced age discrimination more often and reported more negative self-perception of their aging than married respondents.

**Table 8**

*ANOVA Test Result by Marital Status*

Measure	Married ( <i>n</i> = 5248)		Divorced, widowed, and never married ( <i>n</i> = 3548)		<i>F</i> (1, 8794)
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Ageism					
Age Discrimination	.27	.58	.31	.64	12.18***
Negative Self-perception of Aging	2.25	1.19	2.45	1.25	61.97***

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

A one-way ANOVA test was conducted to determine whether there were statistically significant differences in perception of ageism according to education level (Table 9). For the ANOVA test, the education variable was categorized into three groups: less than high school,

high school graduate, and college or above. Negative self-perception of aging varied substantially among those groups, and the differences among groups were statistically significant. People with lower educational levels reported more negative self-perception of their own aging than those a higher educational level.

**Table 9**

*ANOVA Test Result by Education Level*

Measure	Less than high school ( <i>n</i> = 1435)		High school graduate ( <i>n</i> = 4889)		College or above ( <i>n</i> = 2472)		<i>F</i> (2, 8793)
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Ageism							
Age Discrimination	.26	.64	.29	.62	.28	.56	1.36
Negative SP of Aging	2.7	1.26	2.36	1.20	2.05	1.17	142.89***

*Note.* \**p* < 0.05, \*\**p* < 0.01, \*\*\**p* < 0.001

A one-way ANOVA test was conducted to examine whether there were statistically significant differences in ageism according to health status (Table 10). For the ANOVA test, the health status variable was categorized into poor or fair health, good health, and very good or excellent health. Age discrimination and negative self-perception of aging varied substantially among those groups, and the differences were statistically significant. Participants with poor or fair self-rated health experienced age discrimination more often and reported more negative perception of their own aging than those with better self-rated health.

**Table 10***ANOVA Test Result by Health Status*

Measure	Poor or Fair ( <i>n</i> = 2511)		Good ( <i>n</i> = 3085)		Very Good or Excellent ( <i>n</i> = 3200)		<i>F</i> (2, 8793)
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Ageism							
Age Discrimination	.37	.75	.28	.58	.22	.48	47.53***
Negative SP of Aging	3.0	1.18	2.38	1.08	1.75	1.09	897.85***

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

**Regression Results**

Table 11 presents results from the hierarchical regression analysis. Before conducting the multiple regression analysis, correlation analysis among predictor variables was carried out to verify multicollinearity. The correlation coefficients between predictor variables were  $|r| > 0.4$ , which did not exceed threshold collinearity,  $|r| > 0.7$  (Booth, Niccolucci, and Schuster, 1994). Further analysis with variance inflation factors (*VIF*) and tolerance was also conducted to judge the multicollinearity of the variables. *VIF* values of a set of predictor variables were lower than 1.39, which did not exceed a threshold value 10, and the tolerance value of each variable (0.716 - 0.996) was also within the acceptable range of an appropriate indicator,  $> 0.1$  (Hair et al., 2006). Multiple regression analyses were conducted to test all hypotheses. To test hypothesis 1, a regression included all control variables and the independent variable as productive engagement predictors. Through the regression models below, I tested whether ageism could predict within-individual decreases in productive engagement among older adults by statistically controlling other variables.

### ***Ageism and Work***

I tested whether ageism experience predicted within-individual decreases in work hours by statistically controlling other variables. The overall multiple regression was statistically significant ( $adj R^2 = .294$ ,  $F = 306.1$ ,  $p < .001$ ), and an optimal linear combination of all three variables accounted for 29% of the variance in work hours. Both age discrimination ( $b = .057$ ,  $p < .001$ ) and negative perception of aging ( $b = -.034$ ,  $p < .001$ ) significantly predicted work hours. People who experienced more age discrimination reported greater work hours, while participants who reported more negative perception of their own aging reported fewer work hours. As expected, the block of control variables accounted for a statistically significant proportion of the variance in each of the outcome variables. Higher educational background, better self-rated health, and higher income were associated with longer work hours. Older age, African American race, married marital status, and female gender were associated with fewer work hours.

### ***Ageism and Volunteering***

Multiple regression produced statistically significant results for ageism and volunteering ( $adj R^2 = .102$ ,  $F = 84.0$ ,  $p < .001$ ), and an optimal linear combination of all three variables accounted for 10% of the variance in volunteer activities. Both age discrimination ( $b = .050$ ,  $p < .01$ ) and negative perception of aging ( $b = -.057$ ,  $p < .001$ ) significantly predicted hours of volunteering. People who experienced more age discrimination reported greater volunteer hours, while participants who reported more negative perception of their own aging reported fewer volunteer hours. Black/African-American participants reported greater engagement in volunteer activities than respondents who self-identified as White/Caucasian or other races. Participants who were married, non-Hispanic with higher educational background, better self-rated health, and female gender reported greater engagement in volunteer activities.

### ***Ageism and Grandchild Caregiving***

The overall multiple regression for ageism and grandchild caregiving produced statistically significant results ( $adj R^2 = .79$ ,  $F = 66.7$ ,  $p < .001$ ), and an optimal linear combination of all three variables accounted for 8% of the variance in care activities. The negative self-perception of aging ( $b = -.023$ ,  $p < .05$ ) were significant for predicting hours of grandchild caregiving. Participants who reported more negative perception of their own aging reported fewer caregiving hours. Participants who were married and had a higher educational background reported greater engagement in caregiving activities and those with older age reported less engagement in these activities.

### ***Ageism and Informal Help***

Overall multiple regression for ageism and providing informal help produced statistically significant results ( $adj R^2 = .119$ ,  $F = 99.9$ ,  $p < .001$ ), and an optimal linear combination of all three variables accounted for 12% of the variance in informal help. Both age discrimination ( $b = .083$ ,  $p < .001$ ) and negative perception of aging ( $b = -.047$ ,  $p < .001$ ) were significant for predicting hours of informal help. People who experienced age discrimination more reported greater informal help hours, while participants who reported more negative perception of their own aging reported fewer informal help hours. Non-White participants provided less informal help than White/Caucasian ones. Hispanic participants reported less informal help than non-Hispanics. People who were married with higher educational backgrounds and better self-rated health reported providing more informal help, while participants with older age and females reported providing less informal help.

Table 11

Coefficients from Regressions from Work, Volunteering, Grandchild Caregiving, and Informal Help

Variable	Work		Volunteering		Grandchild Caregiving		Informal Help	
	B	$\beta$	B	$\beta$	B	$\beta$	B	$\beta$
(Constant)	3.497		-.236		2.508		1.765	
Gender	-.195***	-.097	.109***	.050	.047	.020	-.091***	-.045
Age	-.044***	-.457	.002	.015	-.028***	-.253	-.019***	-.192
Education	.023***	.043	.118***	.200	.017*	.027	.064***	.116
African American	-.048*	-.019	.070*	.025	.057	.019	-.162***	-.063
Hispanic	.040	.013	-.088*	-.027	-.003	-.001	-.308**	-.101
Other Race	-.036	-.010	-.023	-.005	.055	.013	-.147**	-.039
Marital Status	.070**	.035	-.139***	-.064	-.128***	-.055	-.046*	-.023
Health	.130***	.138	.100***	.098	.026	.024	.093***	.097
Income	.000***	.128	.000	.020	.000	-.011	.000	.005
Age discrimination	.057***	.035	.050**	.029	.027	.014	.083***	.050
Negative SP of Aging	-.034***	-.043	-.057***	-.065	-.023*	-.026	-.047***	-.064
Self-efficacy	.016	.016	0.059***	.054	.009	0.07	.065***	.064
	$F(12,8783) = 306.060,$		$F(12,8783) = 84.039,$		$F(12,8783) = 66.673,$		$F(12,8783) = 99.938,$	
	Adj $R^2 = .294$ ( $p < .001$ )		Adj $R^2 = .102$ ( $p < .001$ )		Adj $R^2 = .079$ ( $p < .001$ )		Adj $R^2 = .119$ ( $p < .001$ )	

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

## Measurement Structure

CFA was conducted using Mplus MLR to determine the measurement structures for ageism, self-efficacy, and productive engagement. The factor model is a measurement model that specifies the relationships between the latent constructs and the corresponding indicators observed (Mueller & Hancock, 2001). For CFA, the latent factor is a common cause of observed indicators, and it accounts for the commonality (correlations) between the observed indicators (Mueller & Hancock, 2001). Most CFA assumes a linear relationship of the latent factor to the observed indicators (Mueller & Hancock, 2001). The strength of the relationship between the latent factor and observed indicator is factor loading (Bae, 2016).

Many global fit indexes were examined to establish the model fit to the data (West et al., 2012). Absolute fit indexes, as the  $\chi^2$  statistic, root mean squared error of approximation (RMSEA), and standardized root mean square residual (SRMR) were examined. The  $\chi^2$  statistic was used to test the null hypothesis ( $H_0$ ) “The population model-implied covariance matrix equals to the population covariance matrix (Kline, 2015).”  $\chi^2$  verification is a widely used method of model evaluation through statistical verification (Kline, 2015). If the null hypothesis is correct, the observed  $\chi^2$  value will likely be very small, which means that accepting the null hypothesis can adequately explain the data for the established model. Other approaches to statistical verification typically seek to reject the null hypothesis because the researcher can only accept the proposed alternative hypothesis when the null hypothesis is rejected (Lee, 2005).

The  $\chi^2$  value is sensitive to even slight differences between the input covariance matrix and estimated covariance matrix as the sample size increases, leading to the drawback of possible over-estimation of any inconsistency between the model and the data (Lee, 2005). That is, all else being equal, the  $\chi^2$  value increases with the sample size (Lee, 2005). This results in a

low probability of a small  $\chi^2$  value, which in turn results in the rejection of the null hypothesis (Lee, 2005). In addition, the null hypothesis for  $\chi^2$  verification is too strict: even a slight inconsistency would lead to a rejection of the hypothesis, which then makes it impossible to reflect the interests of the researcher (MacCallum et al., 1996). To summarize, the  $\chi^2$  value must be considered in tandem with other goodness-of-fit indexes. In addition to its excessively strict criteria, it is so sensitive to the sample number that it may be overestimated when the number of cases is high. Therefore, alternative general fit indexes RMSEA, SRMR, CFI, and TLI were examined.

RMSEA estimates the lack of fit ( $\chi^2 - df$ ) per degrees of freedom (df in the denominator) in the population. It indicates how close a model is to a misfit boundary, and a value below .05 indicates a good fit (Hu & Bentler, 1999). SRMR represents the square root of the average of all squared standardized residuals. SRMR values below .08 indicate a good fit (Hu & Bentler, 1999). Both fit indexes are absolute indexes and do not involve a baseline model. The relative fit indexes that do involve a baseline model, the comparative fit index (CFI), and the Tucker–Lewis index (TLI) were also examined. Values  $> .95$  for both the CFI or TLI are considered to reflect a good model fit (Hu & Bentler, 1999).

For age discrimination, a single latent variable with six indicators, CFA was conducted. The results for  $\chi^2$  for the model ( $\chi^2(9) = 197.737, p < .001$ ) supported the rejection of the null hypothesis; that is, the population model-implied covariance matrix is not equal to the population-covariance matrix. Large  $\chi^2$  values indicated significant differences between the specified model and the data (MacCallum et al., 1996). The RMSEA estimate was .049, which is less than .05. The models' RMSEA estimates showed a good fit, and the test of RMSEA is not significant ( $p > 0.05$ ). That is, it did not reject the null hypothesis, which indicated that the model

adequately fit the data. The SRMR value (.036) was lower than .08, which indicated a very good fit. The CFI and TLI estimates were .957 and .928, respectively, and both estimates indicated a good fit. Even though the model had high  $\chi^2$  value, the global fit indexes indicated that the model had a good fit to the data. In this CFA model, all indicators were statistically significant in the loading on this construct, and the standardized factor loadings of the indicators were substantial.

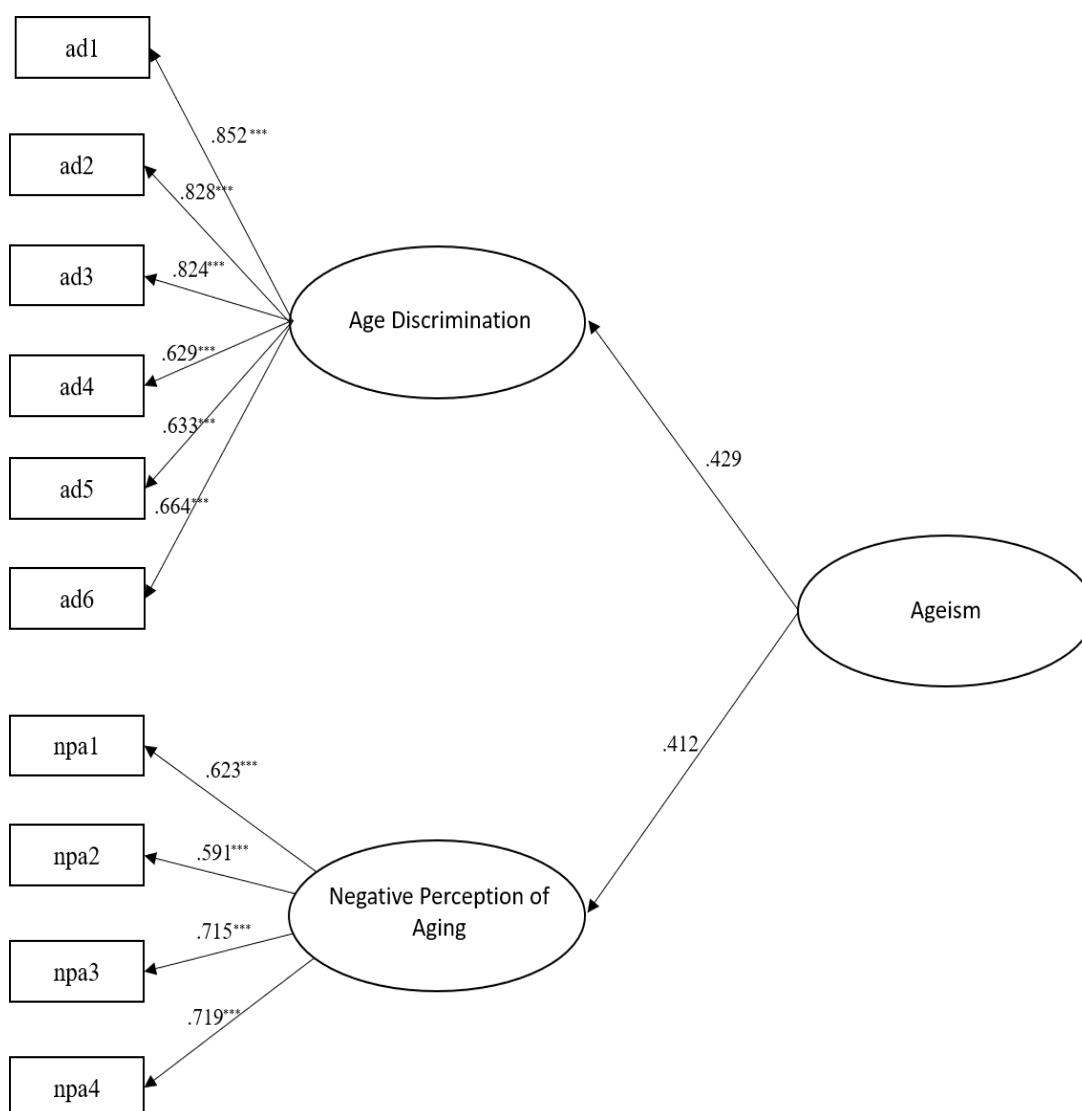
For negative self-perception of aging, a single latent variable with four indicators, CFA was conducted.  $\chi^2$  values ( $\chi^2(2) = 251.632, p < .001$ ) were high, indicating a statistically significant difference between the observed and the expected value. The RMSEA was .119 [90% CI .107 .132], suggesting poor fit. However, CFI indicated a good fit (.956), TLI showed a fair fit (.867), and the RMSEA suggested a good fit (.031). In this CFA model, all indicators were statistically significant in the loading on this construct, and the standardized factor loadings of the indicators were fair.

CFA for the second-order factor of ageism, including lower factors, age discrimination, and negative self-perception of aging, was conducted. The model fit was calculated by analyzing all lower factors and indicators for these factors. The  $\chi^2$  values ( $\chi^2(33) = 1673.467, p < .001$ ) were excessively high, which indicated a significant difference between the observed and the expected value. The RMSEA estimate was .075, which is slightly above the threshold of .05. The models' RMSEA estimates showed a fair fit, but the 90% CI for the model did not include .05, so the model rejected  $H_0$  ( $p \leq 0.05$ ). The SRMR value (0.033) was lower than .08, which indicated a good fit. The CFI and TLI estimates were .953 and .936, respectively, and both estimates were within the range of good fits. Overall, the global fit indexes indicated a good fit of the model to the data. However, lower factors were not statistically significant in the loading

on the second-order construct. This result indicates that these scales did not measure the same particular construct (i.e., ageism). An alternative model was proposed that used age discrimination and negative self-perception of aging as separate independent variables. In this alternative model, each relationship with productive engagement was examined, and a possible mediating effect of self-efficacy was also examined.

**Figure 7**

*Ageism CFA, Second-order Factor Model*



*Note.* Standardized parameter statistics are provided.

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

For self-efficacy, a single latent variable with ten indicators, CFA was conducted.  $\chi^2$  values ( $\chi^2(36) = 10291.482, p < .001$ ) were extremely high, indicating a statistically significant difference between the observed and the expected value. The RMSEA was .180 [90% CI .177 .183], suggesting a poor fit. CFI (.613) and TLI (.516) indicated poor fit, and the SRMR suggested a poor fit (.163). In this CFA model, all indicators were statistically significant in the loading on this construct, and the standardized factor loadings of the indicators were fair. A latent variable for self-efficacy needed to be revised through modification indexes. Self-efficacy measurement model could be improved by adding additional relations among observed variables. I reconstructed the latent variable for self-efficacy by adding potentially correlated uniqueness among observed variables when estimating a full SEM model.

For productive engagement, a single latent variable with four indicators, CFA was conducted.  $\chi^2$  values ( $\chi^2(3) = 888.594, p < .001$ ) were extremely high, indicating a statistically significant difference between the observed and the expected value. The RMSEA was .183 [90% CI .173 .193], suggesting poor fit. CFI (.270) and TLI (.459) indicated a very poor fit, and the SRMR suggested a fair fit (.094). While all indicators were statistically significantly loading on this construct, the indicators' standardized factor loadings were low.

### **Structural Equation Modeling (SEM) Results**

SEM was used to test the overall research model, and MLR estimation was employed to calculate the indexes to determine the adequacy of the model fit to the data. Both the original SEM model (model 1), which included the second-order factors, and the alternative model (model 2), which did not, were examined.

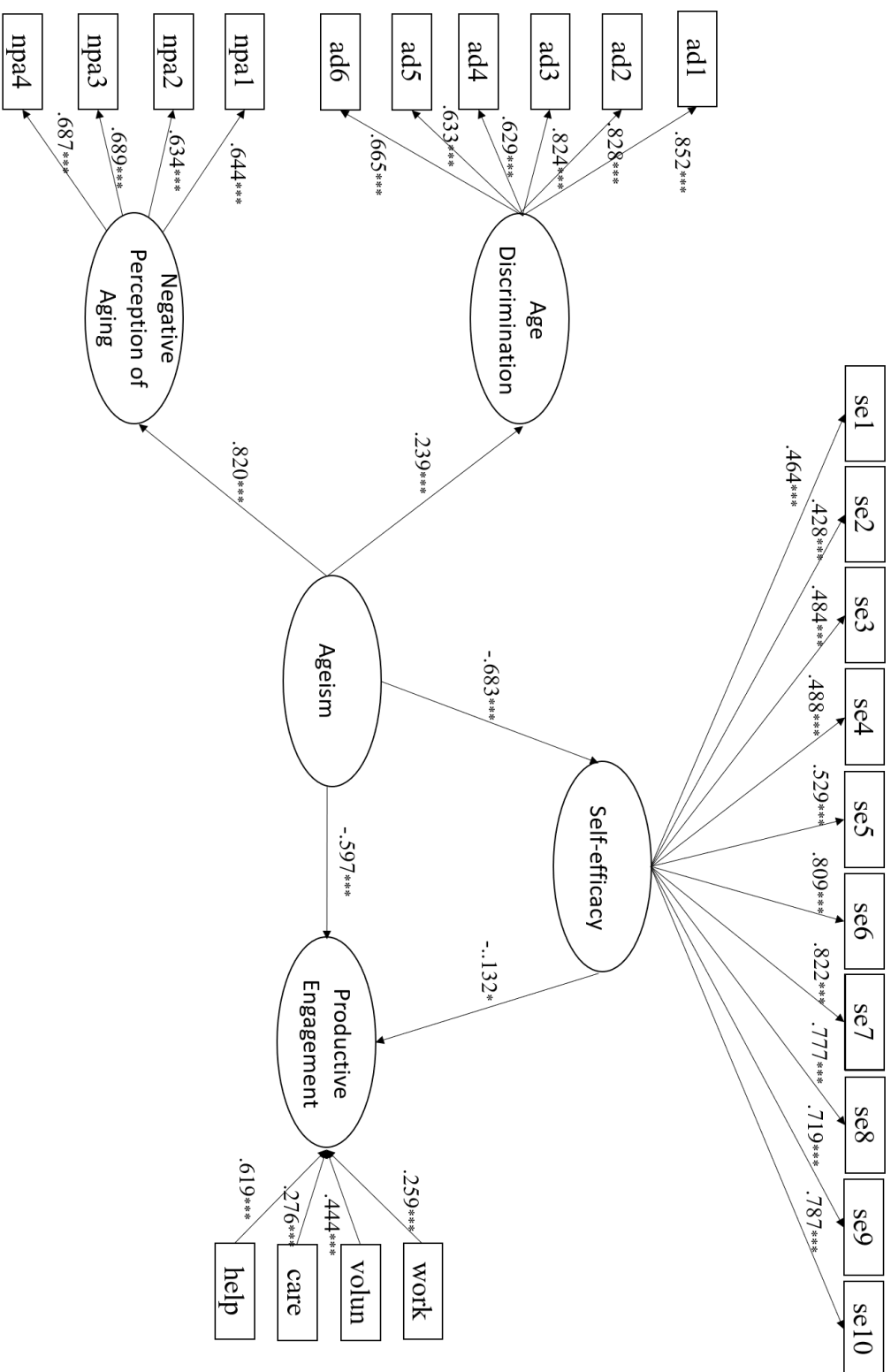
### *Evaluation of the Full Structural Model*

The basic logic for choosing a method to evaluate the overall model is to determine how well the sample covariance matrix derived from the collected data resembles the model covariance matrix calculated from the model established theoretically (Lee, 2005). Therefore, when evaluating the overall model, the null hypothesis is ( $H_0$ )= “the researcher’s model corresponds to the data.” In this study, a goodness of fit analysis was conducted to verify the RAM model, which stated that ageism negatively affects productive engagement among older adults. It is suitable for estimating the given empirical data and evaluating the fit between the hypothetical causal model and the actual empirical data.

Regarding Model 1, the results of  $\chi^2$  for the model ( $\chi^2(247) = 15795.723, p < .001$ ) rejected the null hypothesis; that is, the population model-implied covariance matrix is not equivalent to the population covariance matrix. The RMSEA estimate was .085, which is higher than .05 (close fit). The models’ RMSEA estimates showed a fair fit, but 90% CI for the model did not include .05, so the model rejected  $H_0$  ( $p \leq .05$ ). The SRMR value (.082) was close to .08, which indicated a good fit. The CFI and TLI estimates were .746 and .716, respectively, and both estimates were within acceptable fits. Overall, the full measurement model did not adequately fit the data. Only the SRMR value was acceptable. Figure 8 displays the standardized path coefficients and the standardized factor loadings of Model 1.

**Figure 8**

*Path Coefficients and Factor Loadings in the Theoretical SEM Model (Model 1)*



Note. Standardized parameter statistics are provided.

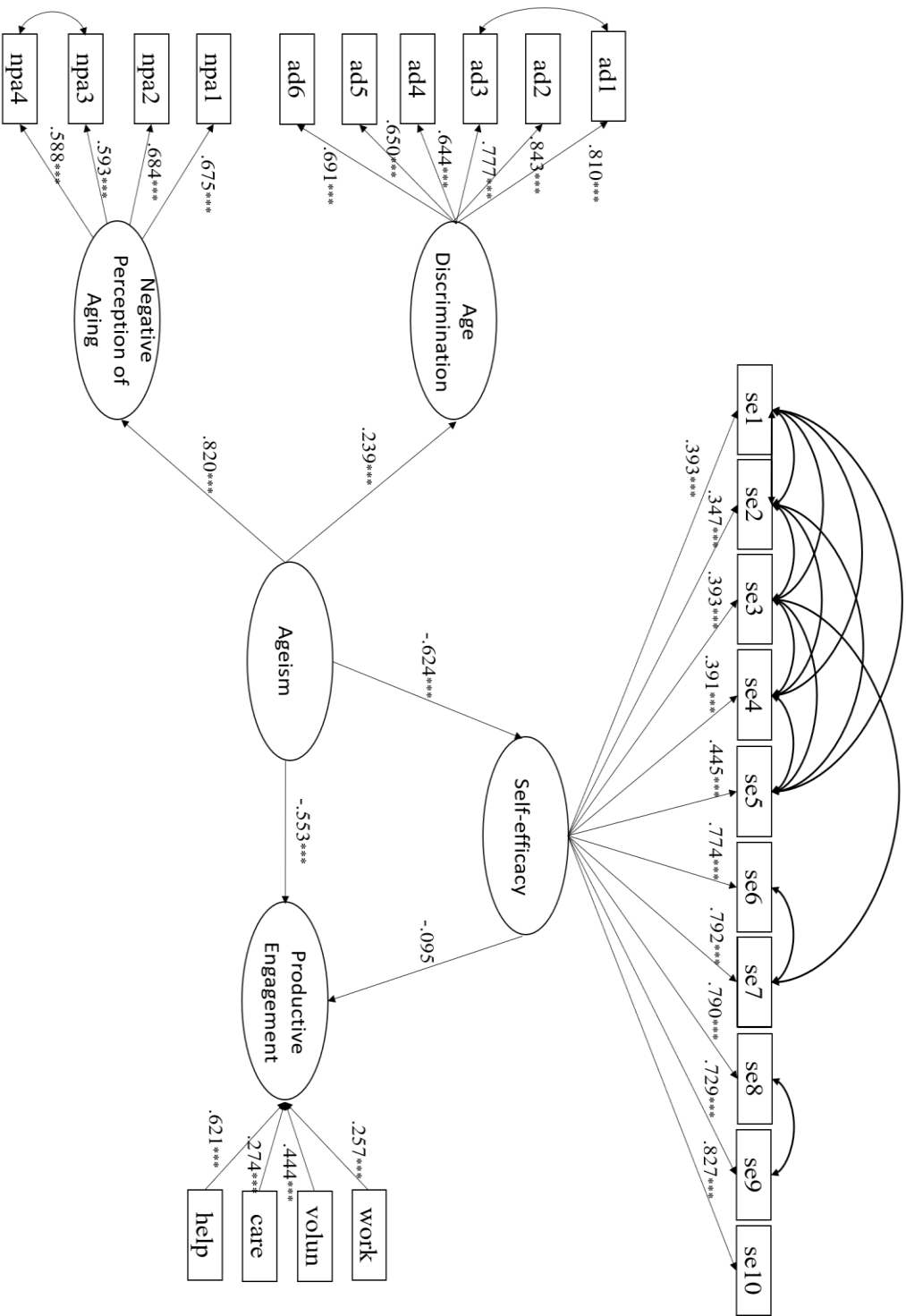
\* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$

I individually examined the model fit for each parameter, especially the key parameters. First, I examined whether standardized residuals (z-scores) were negative or showed substantial standardized residuals ( $> \pm 1.96$ ). There were many standardized residuals that were not within the acceptable range ( $> \pm 1.96$ ). I also checked the modification indexes (MI), which involve the estimate of how much the chi-square for the model would be reduced if a single parameter is made free—one at a time. Modification indexes propose that this measurement model could be improved by adding additional relations that were not freely estimated, such as omitted paths, cross-loadings, factor correlations, and correlated uniqueness to the measurement model. Revising the model using the modification indexes may improve the model fit to the sample data, but it may widen the gap between the model and the population. Modifications should be theory-based, so any covariance between latent variables was not added. Simply covariances among observed variables in the same latent were added.

As CFA results for self-efficacy indicated, there were lots of not explained covariance among observed variables. Expected change of the  $\chi^2$  statistic was high through the modification. Thirteen covariances among observed variables for self-efficacy, one covariance among observed variables for age discrimination, and one covariance among observed variables for negative self-perception of aging that have extreme values for the modification indexes (MI  $> 500$ ) were added to the model. Figure 9 displays the standardized path coefficients and the standardized factor loadings of revised Model 1. Figure 9 also showed where the covariances were added.

**Figure 9**

*Path Coefficients and Factor Loadings in the Theoretical SEM Model (Revised Model 1)*



Note. Standardized parameter statistics are provided.

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

In the revised model, all model-fit indices were greatly improved. Although the chi-square test was still statistically significant, the RMSEA estimate showed a good fit. The RMSEA estimate was .038, which showed an excellent fit, and the test of RMSEA is not significant ( $p > 0.05$ ). That is, it did not reject the null hypothesis, which indicated that the model adequately fit the data. CFI and TLI indicated a good fit, and SRMR suggested a good fit (CFI = .953; TLI = .944; SRMR = .058). To compare whether model 1 or the revised model 1 fit the data better,  $\chi^2$  difference test was conducted. The Satorra–Bentler scaled chi-squared test was used due to its robustness to nonnormality (Satorra & Bentler, 2001). Results indicated that the revised model significantly improved the model fit (see table 12). Therefore, the modified structural model was retained and was compared with model 2.

**Table 12**

*Model-Fit Indices for Measurement Model1 and Revised Model1*

Measurement Model	$\chi^2$	df	Scaling Correction Factor	RMSEA	CFI	TLI	SRMR
Model1	15795.723***	247	1.34	.085	.746	.716	.082
Revised Model1	3115.980***	232	1.28	.038	.953	.944	.058
$\chi^2$ difference <sup>1</sup>	7803.19***	15	2.20 <sup>2</sup>				

*Note.* Chi-square difference test completed using the Satorra-Bentler Scaled Chi-Squared Test.

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

<sup>1</sup> Sattora-Bentler Scaled Chi-Square Difference

<sup>2</sup> Difference Test Scaling Correction

I also examined the alternative model (model 2), which does not include the second-order factor for ageism. I applied the modified measurement structure for estimating model. In the model 2, the results of  $\chi^2$  for the model ( $\chi^2(231) = 3007.362, p < .001$ ) rejected the null hypothesis. Although the chi-square test was statistically significant, the RMSEA estimate indicated that the model2 adequately fit the data. The RMSEA estimate was .037, which showed an excellent fit, and the test of RMSEA is not significant ( $p > 0.05$ ). CFI and TLI indicated a

good fit, and SRMR suggested a good fit (CFI = .955; TLI = .946; SRMR = .054). Figure 10 displays the standardized path coefficients and the standardized factor loadings of the alternative SEM model (model2).

To compare whether revised model 1 or model 2 fit the data better,  $\chi^2$  difference test was conducted. Results indicated the model 2 fits the data better and  $\chi^2$  difference was statistically significant (see table 13). Finally, model 2 was retained as the final SEM model and was used to examine the direct path between ageism and productive engagement and the indirect path through self-efficacy. A multiple-group analysis was also conducted by using model 2.

**Table 13**

*Model-Fit Indices for Measurement Revised Model1 and Model2*

Measurement Model	$\chi^2$	<i>df</i>	Scaling Correction Factor	RMSEA	CFI	TLI	SRMR
Revised Model1	3115.980***	232	1.28	.038	.953	.944	.058
Model2	3007.362***	231	1.28	.037	.955	.946	.054
$\chi^2$ difference <sup>1</sup>	176.22***	1	.75 <sup>2</sup>				

*Note.* Chi-square difference test completed using the Satorra-Bentler Scaled Chi-Squared Test.

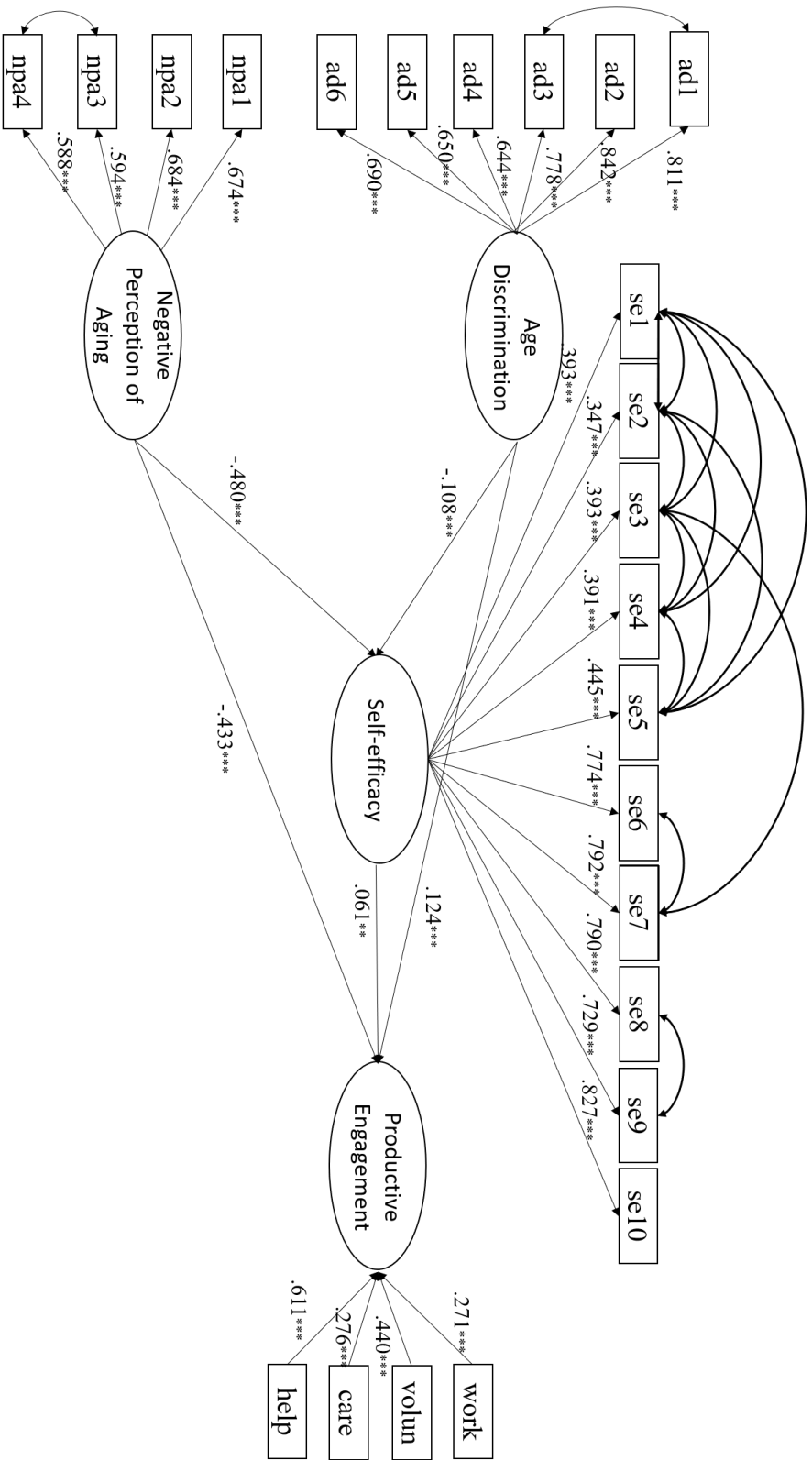
\* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$

<sup>1</sup> Sattora-Bentler Scaled Chi-Square Difference

<sup>2</sup> Difference Test Scaling Correction

**Figure 10**

*Path Coefficients and Factor Loadings in the Alternative SEM Model (Model 2)*



*Note.* Standardized parameter statistics are provided.

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

### ***Direct Effects***

In model 2, age discrimination was positively associated with productive engagement ( $b = .038, \beta = .124, p < .001$ ), and the negative self-perception of aging was negatively associated with productive engagement ( $b = -.107, \beta = -.433, p < .001$ ). Taken together, respondents who held more negative self-perception of aging were less likely to engage in productive activities. However, respondents who experienced more age-discrimination were more likely to engage in productive activities.

**Table 14**

#### *Direct Effects of Ageism on Productive Engagement*

Direct Paths	Unstandardized		Standardized	
	Coefficient	S.E.	Coefficient	S.E.
Model2				
Age discrimination to Productive Engagement	.038***	.006	.124***	.017
Negative Self-perception of aging to Productive Engagement	-.107***	.012	-.433***	.025

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

### ***Indirect Effects***

In model 2, the model result indicated that self-efficacy mediates the relationship between ageism and productive engagement. The results of the Sobel test suggested that the mediating effects of self-efficacy showed statistically significant differences between age discrimination and productive engagement ( $b = -.002, \beta = -.007, p < .01$ ) and between negative self-perception of aging and productive engagement ( $b = -.007, \beta = -.029, p < .01$ ). Productive engagement was expected to decrease by .007 SDs for every SD increase in age discrimination and by 0.029 SDs for every SD increase in negative self-perception of aging via its prior effect on self-efficacy.

Tests of mediation using bootstrapping analyses with 5000 resample within this sample were also used to test for mediation, as recommended by Preacher and Hayes (2008). Bootstrapping analyses demonstrated that increased self-efficacy partially mediated the relationship between age discrimination and productive engagement ( $\beta = -.007$ , CI [-.011, -.003]). Because zero was not within this 95% CI for the indirect effects of self-efficacy, the indirect effect was judged statistically significant. Self-efficacy also partially mediated the relationship between negative self-perception of aging and productive engagement ( $\beta = -.029$ , CI [-.047, -.014]). The 95% CI for the indirect effects of ageism on productive engagement ranged from -.172 to -.070. Because zero was not within this interval, the indirect effect was judged statistically significant.

Taken together, Age-discrimination was positively associated with productive engagement. According to the indirect effect results, self-efficacy helped respondents who experienced more age-discrimination to less engagement in productive activities. To better interpret this result, we need to consider that there might be a reverse directional effect from productive engagement to ageism. In other words, people who engaged more in productive activities were more likely to encounter age discrimination. In this way, self-efficacy may potentially play a role in reducing perceiving age discrimination in productive activities. Respondents who reported more negative self-perception of aging were more likely to have a lower level of self-efficacy, and this relationship led to less engagement in productive activities. However, the negative indirect indicated that older adults who had a higher level of self-efficacy potentially had more positive self-perception of aging and engaged more in productive activities.

**Table 15**

*Indirect Effects of Self-Efficacy on the Relationship Between Ageism and Productive Engagement (Sobel Test Results)*

Indirect Paths	Unstandardized		Standardized	
	Estimate	S.E.	Estimate	S.E.
Model2				
Age discrimination → Self-efficacy → Productive Engagement	-.002**	.001	-.007**	.002
Negative Self-perception of aging → Self-efficacy → Productive Engagement	-.007**	.002	-.029**	.009

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

**Table 16**

*Indirect Effects of Self-efficacy on the relationship between Ageism and Productive Engagement (Bootstrapping Test Results)*

Indirect Paths	Unstandardized		Standardized	
	Estimate	95% C.I.	Estimate	95% C.I.
Model2				
Age discrimination → Self-efficacy → Productive Engagement	-.002	-.004 -.001	-.007	-.011 -.002
Negative Self-perception of aging → Self-efficacy → Productive Engagement	-.007	-.004 -.001	-.029	-.047 -.011

### ***Multiple Group SEM Analysis Results***

SEM multiple group analysis was conducted to investigate the moderating role of intergenerational contact in the relationship between ageism and productive engagement. The significance of the difference in moderating effects of intergenerational contact was examined in the Satorra–Bentler scaled chi-squared test. Three groups were generated by intergenerational contact frequency: those who indicated no intergenerational contact, those who had contact with their child(ren) less than ten times per year, and those who had contact with their child(ren) more than ten times per year. The first step was developing and estimating an unconstrained model in

which all structural path coefficients were freely estimated for each group. Parameter values and model fit indices were estimated for each group through multi-group analysis. Then, a constrained model in which all structural path coefficients are constrained with equality constraints for all paths across the groups was developed. If there is no moderating effect of intergenerational contact and the path coefficients of the three groups are the same, the equivalence constraint would not affect the model fit of the first step.  $\chi^2$  difference test was conducted between the unconstrained SEM model and the constrained SEM model. The results of the Satorra–Bentler scaled chi-squared test are provided in table 17. The  $\chi^2$  difference was statistically significant, and it indicated that intergenerational contact might moderate the relationship between ageism and productive engagement.

**Table 17**

*Comparison of Unconstrained and Constrained Models (Model 2)*

Measurement Model	$\chi^2$	df	Scaling Correction Factor	RMSEA	CFI	TLI	SRMR
Model with Unconstrained Path Coefficients	3662.916	693	1.2419	.038	.953	.944	.058
Model with Constrained Path Coefficients	3854.703	694	1.2414	.039	.950	.940	.059
$\chi^2$ difference <sup>1</sup>	264.00***	1	.89 <sup>2</sup>				

*Note.* Chi-square difference test completed using the Satorra-Bentler Scaled Chi-Squared Test.

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

<sup>1</sup> Sattora-Bentler Scaled Chi-Square Difference

<sup>2</sup> Difference Test Scaling Correction

Standardized path coefficients from ageism to productive engagement are provided in table 18. Unstandardized path coefficients were used to compare the impact of ageism on productive engagement among groups. For the within-group comparison, standardized path coefficients are used to compare the impact of different paths within a single sample (Kwan &

Chan, 2011). However, when comparing the impact of the same path between groups, unstandardized path coefficients are used (Kim, 2015). With regard to the effect of age discrimination on productive engagement, the effect of age discrimination on productive engagement was marginally higher for respondents who had no contact ( $b = .043, p < .05$ ) than it was for respondents with more than ten occasions of contact per year ( $b = .027, p < .05$ ). In other words, the effects of age discrimination on productive engagement were bigger for people with a high frequency of intergenerational contact frequency. However, as noted in the indirect effects of self-efficacy, there might be a reverse directional effect from productive engagement to ageism. That is, people who engaged more in productive activities were more likely to encounter age discrimination. In this way, intergenerational contact may potentially play a role in reducing age discrimination experience in productive activities.

The effects of negative self-perception of aging on productive engagement were marginally higher for respondents who had no contact ( $b = -.110, p < .001$ ) than it was for respondents with more than ten occasions of contact per year ( $b = -.076, p < .001$ ). That is, negative self-perception of aging on productive engagement is smaller for people with a high frequency of intergenerational contact frequency. These differences between groups were statistically significant, indicating the moderating effects of ageism on productive engagement. However, there was no difference in both paths between respondents who had no contact and respondents who had contact with their child(ren) less than ten times per year.

**Table 18**

*Path Coefficients among Intergenerational Contact Groups by Contact Frequency*

Direct Paths	No Contact		Mid Contact		High Contact	
	<i>B</i>	$\beta$	<i>B</i>	$\beta$	<i>B</i>	$\beta$
Model2						
AE <sup>1</sup> to PE <sup>2</sup>	.043*	.114*	.043***	.135***	.027*	.107**
NPA <sup>3</sup> to PE <sup>2</sup>	-.110***	-.389***	-.109***	-.449***	-.076***	-.409***

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

<sup>1</sup>Age discrimination

<sup>2</sup>Productive engagement

<sup>3</sup>Negative self-perception of aging

### Summary of Results

I found a meaningful relationship between ageism and productive engagement among older adults. Negative self-perception of aging had negative effects on productive engagement while age discrimination positively associated with productive engagement. The ability of self-efficacy to mediate the effects of ageism on productive engagement was confirmed.

Intergenerational contact was also proved as a potential moderator of the relationship between ageism and productive engagement. Table 19 summarizes the hypotheses testing results.

**Table 19**

*Summary of Hypothesis Testing*

Research Question	Hypothesis	Supported (Yes/No)
Research Question 1. How does ageism affect engagement in productive activities of older adults?	Hypothesis 1.1. Older adults who experience age discrimination more will engage less in productive activities.	No
	Hypothesis 1.2. Older adults who experience age discrimination more will engage less in work.	No
	Hypothesis 1.3. Older adults who experience age discrimination more will engage less in volunteering.	No
	Hypothesis 1.4. Older adults who experience age discrimination more will engage less in grandchild caregiving	No

	Hypothesis 1.5. Older adults who experience age discrimination more will engage less in informal help.	No
	Hypothesis 1.6. Older adults who report more negative perception of their own aging will engage less in productive activities.	Yes
	Hypothesis 1.7. Older adults who report more negative perception of their own aging will engage less in work.	Yes
	Hypothesis 1.8. Older adults who report more negative perception of their own aging will engage less in volunteering.	Yes
	Hypothesis 1.9. Older adults who report more negative perception of their own aging will engage less in grandchild caregiving.	Yes
	Hypothesis 1.10. Older adults who report more negative perception of their own aging will engage less in informal help.	Yes
Research Question 2. Does self-efficacy mediate the relationship between ageism and productive engagement?	Hypothesis 2.1. Self-efficacy mediates the relationship between age discrimination and productive engagement.	Yes
	Hypothesis 2.2. Self-efficacy mediates the relationship between negative self-perception of aging and productive engagement.	Yes
Research Question 3. What differences are there in the relationship between ageism and productive engagement between older adults with a high intergenerational contact frequency and others with a low frequency of intergenerational contact?	Hypothesis 3.1. The effects of age discrimination on productive engagement is smaller for people with a high frequency of intergenerational contact frequency	No
	Hypothesis 3.2. The effects of negative self-perception of aging on productive engagement is smaller for people with a high frequency of intergenerational contact.	Yes

## Chapter 5: Discussion

### Synopsis of Findings

My study used the HRS database to examine the relationship between ageism and older adults' productive engagement. The research contributes to our understanding of ageism's impact on productive engagement and lends partial support to the Risks of Ageism Model proposed by Swift et al. (2017). To date, much of the existing research on ageism has focused on its negative impact on physical, functional, or mental health. Although there is well-documented research on the adverse effects of ageism on older adults, research on how ageism affects older adults' productive activities and aging is scant. I chose to study ageism's effect on productive engagement because of the current lack of research in this area.

The Risks of Ageism Model (RAM) suggests that age discrimination and negative attitudes toward aging impede productive engagement. The results of this study partially confirmed this model. Specifically, older adults with a more negative self-perception of aging were less likely to be productive workers, volunteers, and caregivers. However, age-discrimination and productive engagement are positively associated. Therefore, my results point to the need to examine the effects of ageism on productive engagement in more detail.

Self-perception of aging, which is considered a psychological component of ageism in this study, confirmed RAM. In contrast, experienced age-discrimination, a behavioral component of ageism in this study, does not support RAM. My results indicate that people with less negative thoughts and feelings toward aging had more productive engagement. However, direct age-based discrimination did not predict productive engagement, and findings suggest a reverse directional relationship between age-based discrimination and productive engagement. In other words, older adults who engage more in productive activities will also likely experience more ageism. This

finding provides partial support for an earlier study that indicated ageism's possible manifestation extensively in the areas closely associated with productive activities, such as the workplace and within families, societies, and cultures (Macdonald & Levy, 2016). Although I initially expected that older adults who reported age discrimination would be less likely to report higher levels of productive engagement, I found instead that higher levels of productive engagement, whether by choice from necessity, reported more age discrimination. This finding has important workplace and societal implications, as discussed below.

The most important finding of this study is that self-efficacy partially mediates the relationship between ageism and productive engagement. Some research examined the effects of ageism on self-efficacy (Alexander, 2020; Temple et al., 2019), but there is no research on the role of self-efficacy as a possible mediator for ageism. Self-efficacy is a basic conviction or belief that people can achieve goals to overcome life's challenges and obstacles encountered in aging. My study's findings indicate that less negative thoughts and attitudes toward aging lead to stronger self-efficacy beliefs in later life. Strong self-efficacy might reduce the negative effects of ageism and support more productive engagement in later life.

Previous studies found that intergenerational contact is important in reducing ageism, but my research found that contact did not dramatically affect the relationship between ageism and productive engagement. I discovered that intergenerational contact could partially mitigate the effect of ageism on productive engagement. The HRS intergenerational contact variable only provides contact frequency information. However, most studies that found the mediating impact of intergenerational contact on ageism also examined the quality of those interactions (Christian et al., 2014; Iweins et al., 2013).

In addition to the relationship between ageism and productive engagement, my study identified various socio-demographic variables with a statistically significant association between ageism and productive engagement. These variables included gender, age, race, relationship status, education, and health. In terms of gender, males experienced age discrimination more often and had greater negative self-perception of aging. Males also reported longer work hours, less engagement in volunteer activities, less engagement in care activities, and providing greater amounts of informal help. Older age participants reported age discrimination less often, but they had greater negative self-perception of aging. Older age is also associated with fewer work hours, less engagement in caregiving activities, and providing less informal help. However, there is no association between age and engagement in volunteer activities.

Black or African Americans experienced age discrimination more often and had a less negative self-perception of aging. They reported fewer work hours, greater engagement in volunteer activities, and less informal help than White/Caucasian. There was no statistical significant relationship between race and engagement in caregiving activities. Hispanic participants experienced age discrimination less often and reported a more negative perception of their aging. Hispanic participants also reported less informal help and fewer volunteer activities than non-Hispanics. There was no statistical difference in work hours and caregiving activities between Hispanics and non-Hispanics. Participants who are married experienced age discrimination less often and reported less negative perception of their aging compared to divorced, widowed, and never-married respondents. They also reported fewer work hours, greater engagement in volunteer activities, greater engagement in caregiving activities, and provided less informal help.

People with lower educational levels reported more negative perception of their aging than those with a higher educational level. They reported longer work hours, greater engagement in volunteer activities, greater engagement in care activities, and less provision of informal help. There was no statistical correlation between educational background and experienced age discrimination. Participants with poor self-rated health experienced age discrimination more often and reported more negative perception of their aging. They reported longer work hours, greater engagement in volunteer activities, and greater informal help. Self-rated health did not relate statistically to engagement in caregiving activities.

Overall, I found a relatively low level of age discrimination relative to the findings of other studies. In all, 27.8% of 8,796 respondents reported experienced age discrimination. By contrast, a 2014 AARP ageism survey found a 64% rate of experienced ageism (AARP, 2014). A more recent ageism survey conducted by the University of Michigan National Poll on Healthy Aging found that more than 80% of older adults reported ageism experienced in their daily lives (Malani et al., 2020). This gap in results may be due to the different way that the HRS posed their question. HRS first the respondents how often they experienced everyday discrimination, and then participants attributed a reason to this discrimination, such as gender, race, age, physical disability, and/or other characteristics. More detailed measures focusing on age discrimination might reduce this gap.

### **Limitations and Implications for Future Research**

As suggested by many previous studies, my research comprised an ageism measure that included psychological and behavioral components of ageism using HRS. Since HRS data does not have a comprehensive ageism scale to measure psychological and behavioral dimensions, I developed a second-order factor model for ageism. The global fit indices indicated that the initial

proposed model fits the data adequately, but the model's estimated parameters were not significant. Because the initial ageism's measure construct validity was insufficient, I proposed a revised model to examine the psychological and behavioral components separately.

As noted in Chapter 2, we need a comprehensive scale that considers the multidimensional aspects of ageism. New scales that correspond to the significant dimensions of ageism are required. Ageism is a subjective concept, and accurately measuring it requires much effort. A comprehensive set of constructs with cognitive, behavioral, and informative ageism components that include reliable and valid indicators is necessary to assess ageism adequately. In addition to measuring hostile ageism, measuring benevolent ageism is essential to capture the multifaceted nature of age-based prejudice. Ageism scales need to evolve and include new measures. They need to be sensitive to cultural differences and accurately reflect older adults' ideas, perceptions, and thoughts about the aging process, especially in our current society where values, norms, and lifestyles change rapidly. Constructing representative secondary data with appropriate ageism measures leads to more meaningful ageism research, and it provides an opportunity to reconsider social perception and attitudes toward older adults. For instance, the ageism questions that HRS uses do not sufficiently measure the concept of ageism. The scholars working to develop the HRS data should improve their ageism measures.

My study did not determine a causal relationship between ageism and productive engagement. I used two cross-sectional waves from the HRS data (2014, 2016), but the data did not determine the cause and effect. This lack of causal determination made it difficult to interpret associations. I assessed ageism and productive engagement simultaneously and treated the two variables as a temporal relationship with an underlying assumption that their relationship is unidirectional. According to the results, for example, age discrimination did not affect productive

engagement, but productive engagement might affect age discrimination. That is, people who engage in more productive activities are more likely to encounter age discrimination. These findings suggest a more complex bi-directional relationship between age discrimination and productive engagement. I suggest a longitudinal design to examine and confirm the causality of age discrimination and productive engagement relationships.

My study's intergenerational contact variable did not adequately conceptualize and operationalize my hypothesis. This lack of capture is one of the well-recognized secondary data analysis limitations because it is hard to match the study's research question with secondary data (Cheng & Phillips, 2014). When applying intergenerational contact theory, the quality of contact and the frequency of contact are important. More comfortable and enjoyable interactions through well-managed contact between older adults and young people lead to better close interactions, and these interactions could enable friendship-developing mechanisms. When people have positive relationships, especially friendships, across intergroup boundaries, this may create the potential for a better understanding of the outgroup. However, my study's variable was the frequency of contact with children, and the variable did not accurately reflect well-managed intergenerational contact. Intergenerational contact is a key factor that may reduce ageism and address its many negative consequences. Further study needs to focus on both the quality and quantity of contact. A high frequency of well-managed intergenerational contact on a long-term basis might lead to a better understanding between older adults and younger people, which improves the image of and reduces negative prejudices and stereotypes associated with older adults. Moreover, intergenerational contact in this study was limited to the relationship between respondents and their adult children. Contact from multi-generational relationships within various age groups might enhance the effects of intergenerational contact.

There is a lack of quantitative data focusing on both ageism and productive engagement, and this may be due to inadequate attention to how they are conceptualized and operationalized. Given this challenge, a qualitative approach may help address these issues. Moreover, meaningful narrative data could help to understand the deeper meanings of ageism. My study's results indicated that different components of ageism have different associations with productive engagement. That is, many segments of productive engagement exist, and each segment is affected differently by ageism. Therefore, the qualitative approach may generate insights into an unnoticed field as an exploratory study rather than discover generalizable findings. Specifically, the qualitative approach may help understand attitudes, perceptions, and views about older adults' daily life experiences. A qualitative approach enables researchers to discover ageism's nature and meaning and understand the complexity people face. It helps to explore how the ageism experience and/or perceived ageism affects adults' productive engagement. This qualitative study may provide insights into risk factors that interfere with successful and productive engagement and ways for reducing ageism. It could inform needed work on scales that more accurately measure the various dimensions of ageism. Such studies could also provide more insights into how age discrimination might be reduced and into strategies older adults use to cope with ageism in their families, communities, and workplaces.

Findings related to the grandchild care variable I used could be affected by potential non-independency of some of my sample responses. I used all respondents from HRS, which include each response from the same married couples. In interpersonal relationships like married couples, the frequency and quality of grandchild caregiving of one spouse affect those of the other spouse (Zvaraa et al., 2015). It might be assumed that the grandchild care variable from the same married couples may be interdependent in nature, which may lead to false positives

(McDonald, 2008). Even though I followed the protocol used by many researchers, future researchers should consider using one respondent from each married pair, especially relevant when looking at grandchild care, to prevent potential spurious relationships.

### **Implications for Social Work Practice**

Social work has been closely linked to social services for older adults. In particular, social workers have greatly contributed to promoting older adults' well-being. As Duffy (2017) has discussed, social work in the gerontological field will expand as the population ages, and social workers will do more work with older adults in various settings. Naturally, social workers in the clinical field of gerontology are required to be adequately prepared to provide services that are free from prejudicial beliefs (Azulai, 2014). However, social workers' strategies for responding to older adults are still not fully developed. Improving awareness of ageism can lead to a better practice environment for both older adults and their social workers. In addition, social work practice enhancing older adults' productive engagement is helpful to encourage older adults to participate in society, and it may provide an opportunity to address negative ageism against older adults.

Ageism crosses all racial, gender, ethnic, sexual orientation, and religious categories and is a problem that all individuals will potentially face. The form of ageism at any given time is shaped by multiple aspects, including society's values, concepts, and perception, which are in turn based on social and cultural contexts. Issues arising from ageism are therefore multi-faceted; addressing these issues requires a more comprehensive and nuanced understanding perspective of their complex processes. Social work research, and indeed, interdisciplinary research, must focus on ageism. Social work may provide insights into reducing bias and stigmatization associated with ageism, thereby helping to reduce depression and social isolation due to ageism.

By identifying potential effective practices for lessening the effects of ageism and supporting aging well, this research seeks to provide evidence for social work policy and practice to advance older adults' well-being. We need to consider how to increase self-efficacy and improve the self-perception of aging.

Finally, the results of the study support evidence for social work practice to advance older adults' well-being by identifying potential best practices for lessening the effects of ageism and supporting aging well. Considering that older adults will constitute a large portion of the future labor force—meaning that their future work will greatly impact society—emphasis on their productivity holds promise for social policymakers and social workers as they design specific policies and programs to support older adults' productive engagement.

### **Implications for Policy for Older Adults**

This study found that a higher level of age discrimination was perceived and experienced among those who people engage in more productive activities. Policies for older adults, especially workplace policies, need to focus on the work environment to lessen age discrimination. In some policies, older adults are treated as passive recipients of welfare while their capacities for productivity and independence are ignored (Walker & Maltby, 2012). In healthcare policies, older adults tend to be implicitly categorized as disabled and useless; they are often blamed for rising healthcare costs (Chapin, 2017). However, this labeling or assumption is far from reality, and it only considers certain negative features witnessed in old-old and oldest-old age groups. This negative policy assumption may contribute to the spread of ageism against older adults in society.

Certain policies for older adults reflect ageism. Defining old age criteria to determine eligibility for retirement and old-age social programs is highly problematic. In the United States,

the conventional age range for older adults begins at the chronological age of 65 years old; however, this number might no longer be adequate for the present era given an increased life expectancy. A more precise definition for “older adults” is required taking into account historical, regional, racial, and social variations (Orimo et al., 2006). Current theories that explain ageism focus heavily on a dramatic decrease in physical and cognitive functions, which is more applicable in very old age groups, such as old-old (75-84 years) and oldest-old (85+ years) (North & Fiske, 2013). In order to prevent current policies from promoting ageism, therefore, policy-making for older adults should consider the age differences among people aged 65+ rather than lumping them into broad age groups. Age criteria for older adults must be re-defined to reflect a rapidly increasing, and diverse, and older population. Some sub-groups of older adults are healthier than their parents while other groups face daunting barriers to good health in old age.

The Age Discrimination in Employment Act (ADEA), enacted in 1967 to prevent and combat ageism in the workplace and in the hiring process, targets employees aged 40 and above. This law prohibits work-related discrimination and workplace harassment based on age. Per the terms of this law, an employee must provide clear evidence to prove that age is a motivating factor in workplace discrimination. Historically, mandatory retirement policies were accepted and even encouraged based on negative beliefs about older adults’ limited abilities and the idea that young people deserve more job opportunities than older people. In 1986, the ADEA was amended to abolish mandatory retirement in most jobs. However, the prohibition on setting a mandatory retirement age has had little legal effect (Neumark, 2009). Whether retirement is mandatory or not, many companies still push older workers out of the workplace (Hannon, 2015).

In the workplace, the ADEA is an example of a policy that does not consider age diversity. This policy protects individuals over the age of 40 from age-based workplace discrimination. However, the experience of ageism may be qualitatively different, and perhaps more intense, for those aged 60 and over. Workers in older age groups, especially people aged 60 and over, tend to report more instances of ageism in the workplace than people in younger age groups.

The ADEA's effectiveness in reducing and preventing ageism in the workplace and the hiring process has not been firmly demonstrated. First, many employees still witness or experience ageism in the workplace (AARP, 2014). Gathering and presenting evidence to prove ageism is a motivating factor in age-based discrimination is also considerably difficult for employees (Rothenberg & Gardner, 2011). While 21,000 age discrimination complaints were filed in 2016, very few of these were actually addressed in court (Olson, 2017). The ADEA has also failed in reducing ageism in the hiring process. Neumark's (2009) study indicated that the ADEA law had little effect on the hiring of individuals in older age ranges. The ADEA should therefore be revised to strengthen the rights of older workers with broader goals for social and economic justice.

Furthermore, the future direction of the relevant policies for older adults should focus on enabling them to remain engaged in productive activities. As noted in Chapter 2, productive engagement of older adults support their well-being and has numerous positive effects on the community and society. Policies should focus on enabling older adults to stay active and to lead independent lives, which would help them develop the capacity to participate in productive individual and/or community activities.

## Conclusion

From a broader and long-term perspective, we need a new paradigm for understanding our aging society. More comprehensive insight into ageism is required to effectively address the challenges associated with aging. Research on ageism can, therefore, become an important foundational resource for social work practice with older adults, helping us to extend our understanding of older adults' status as willing and active participants in our society. However, the lack of adequate measures of ageism hampers this work. My findings that higher levels of productive engagement go hand in hand with higher levels of reported age discrimination indicates older adults who are so engaged face additional challenges. There is continued need to confront age discrimination in the workplace and in the larger society. My research also points to the key role self-efficacy may play in productive engagement. Further, research can provide an opportunity to reconsider social perception and attitudes toward older adults and ultimately inform our policy-making and social work practice. The future direction of policies for older adults should focus on avoiding ageism and supporting more aggressive enforcement to prevent and reduce ageism. Furthermore, advocacy and policy change must ensure that older adults' productive engagement is supported.

Given that the baby boom generation, which represents a large proportion of older adults' population, is regarded as a very active group that is capable of being more productive, research to improve understanding and ultimately help to reduce ageism encountered by older adults as they take part in productive engagement, is vitally needed. This study will function as a foundation for subsequent research and study into how ageism affects productive engagement. My work finds potential moderating and mediating factors that can influence the effects of

ageism on productive engagement and can help develop an evidentiary base for interventions to address ageism.

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