CAREER CALLING IN OLDER ADULTS: A SOCIOEMOTIONAL SELECTIVITY PERSPECTIVE

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CAREER CALLING IN OLDER ADULTS: A SOCIOEMOTIONAL SELECTIVITY PERSPECTIVE

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In memory of Sirius, my writing companion and best friend.

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SUMMARY

Over the past several decades, the meaning of work for employees has evolved beyond solely a means of financial support and toward a source of fulfillment and personal identity. Work that is purposeful, meaningful, and internally motivated can be considered a career calling. As the American workforce ages, fulfilling a career calling may be especially important for the longevity and well-being of older adult workers. Drawing on tenets of Socioemotional Selectivity Theory, the present study tested a model in which socioemotional motives and goal selection predict the attainment of calling, and occupational future time perspective was examined as a meaningful individual difference that may affect these relationships. I analyzed survey data collected from 267 working older adults over a two-week period using structural equation modeling. Support was found for the relationships between motives for meaning and positive emotions and calling. Emotional regulation goals were not found to mediate the relationships between motives and calling, and occupational future time perspective did not alter these relationships. By uniting Socioemotional Selectivity Theory with the calling literature, I further our understanding of antecedents of career calling in a priority working population. Theoretical implications for socioemotional selectivity theory and the calling literature, as well as practical implications for workers and organizations, are discussed.

CHAPTER 1. INTRODUCTION

Calling is a psychological approach to a role that reflects seeking purpose and meaning, is pro-social in nature, and motivated by an internal or external summons (Dik & Shimizu, 2019; Duffy et al., 2018). Over the past several decades, the meaning of work for employees has evolved beyond solely a means of financial support toward a source of fulfillment and personal identity. Consequently, pursuing work that fulfills a calling has become exponentially more important for modern workers (Thompson & Bunderson, 2019). Calling is associated with a host of beneficial outcomes, including life satisfaction (Duffy et al., 2012a; 2013a; Wrzesniewski et al., 1997), life meaning (Steger & Dik, 2009), engagement in health behaviors and health satisfaction (Clinton et al., 2017; Wrzesniewski et al., 1997), as well as personal growth (Duffy et al., 2014b). Recent events such as the shift to remote and hybrid work, the "great resignation," and a heightened focus on essential work have encouraged employees to critically examine the meaning and significance of their work roles (e.g., Rudolph et al., 2021; Zhu et al., 2021). Thus, it is more important than ever to understand how callings are developed and maintained, as this understanding is of critical importance to the satisfaction, health, and flourishing of workers, as well as worker performance and longevity in the workforce.

Calling is a research area rife with opportunity for study. A growing body of calling literature acknowledges both theoretically and empirically that calling appears to be a dynamic construct (e.g., Hall & Chandler, 2005; Hirschi et al., 2019; Praskova et al., 2014; 2015), however, this literature has hardly considered calling across the lifespan. There is a dearth of information about calling over the life span, as nearly all longitudinal studies that have been conducted are limited to two years of study or less (for an exception, see Dobrow, 2013), and are mainly concentrated in college students or very young adults (e.g., Duffy et al., 2014). This gap limits our ability to foster and maintain calling in all stages of adult life, hindering the well-being and functioning of all workers seeking meaning and identity in employment throughout their working lives.

The purpose of this study is to unite the calling literature with socioemotional selectivity theory (SST), a lifespan theory of motivation, to examine whether and why calling develops in older adult workers. In doing so, I will be able to study predictors of calling in older workers. Specifically, I will investigate the relationships between positive affect, social connection, and meaning with calling. I will also examine emotional regulation goals as theoretically-invoked mediators of these relationships (see Figure 1), as well as consider occupational future time perspective as a theoretically-invoked moderator.

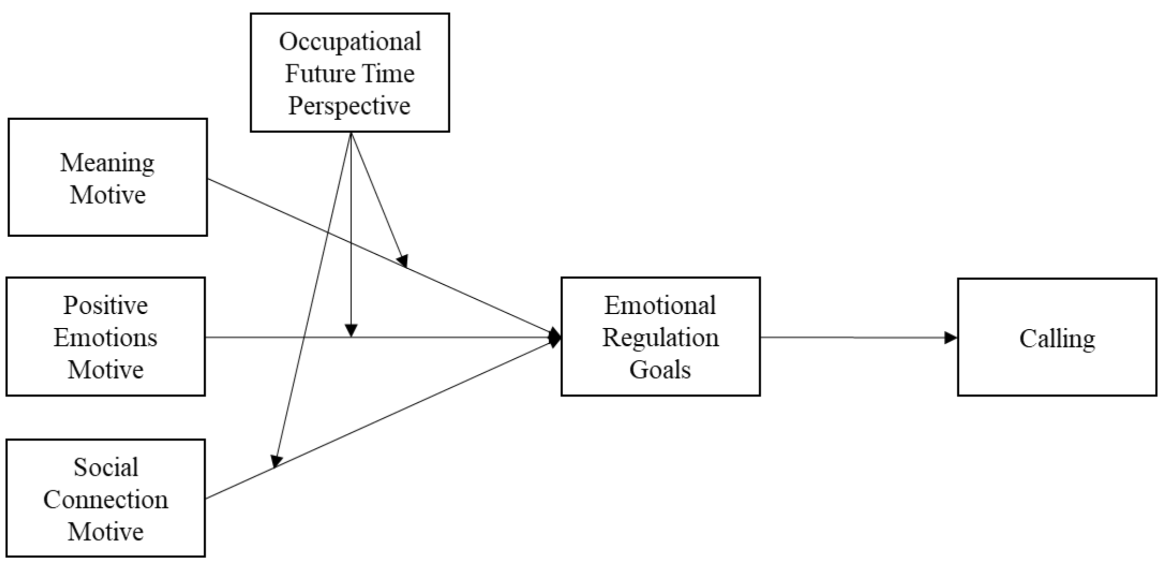

Figure 1. The Hypothesized Model.

This study contributes to the extant research in multiple ways. First, I contribute to the literature by focusing on the experiences of older adult workers. Adults aged 65 and older are projected to make up a greater proportion of the population than ever before by 2030 (United States Census Bureau, 2018), and workers over the age of 55 are expected to make up more than 25 percent of the workforce (Bureau of Labor Statistics, 2021a). Very few calling studies have centered older adults (Bengtsson & Flisback, 2017; Duffy et al., 2017; Hirschi et al., 2019), and two of those studies focused on retired workers. With more adults living and working for longer, not only do we have a gap in calling-related knowledge for a growing segment of the population, but a gap in knowledge of a historically undervalued (e.g., Posthuma & Campion, 2009) segment of the population. As callings are desirable and associated with many beneficial outcomes (e.g., Thompson & Bunderson, 2019), this study may have implications for maintaining workplace well-being throughout adulthood and into older age.

Second, within the extant calling literature, there is little focus on testing mechanisms that explain why or how calling is maintained. By examining the relationships between meaning, positive affect, social connection, emotional regulation goals, and calling, I contribute to the literature by demonstrating the explanatory power of emotional regulation goal selection as a theoretically-guided mediator linking socioemotional priorities to the presence of calling. This study will add empirical evidence to our understanding of the maintenance of calling in older adulthood, answering a recent call for more research on antecedents of calling and focus on decision processes surrounding calling (Thompson & Bunderson, 2019).

Finally, I examine whether individual differences in occupational future time perspective alter the relationships between socioemotional motives and calling. Occupational future time perspective, or the extent to which an individual views their working future as open-ended or limited (Zacher & Frese, 2009), is an adaptation of general future time perspective (Lang & Carstensen, 2002), a crucial construct from SST. Originally, future time perspective was often studied as a proxy of chronological age. More recently the extent to which you view your occupational future as open-ended or limited has been positioned as an individual tendency (e.g., Henry et al., 2017; Seijts, 1998). I propose that individuals with limited occupational future time perspective will experience stronger relationships between meaning, positive affect, and social connection motives and the selection of emotional regulation goals. By examining occupational future time perspective as a moderator, we will understand *for whom* these relationships are most salient.

CHAPTER 2 BACKGROUND AND HYPOTHESIS DEVELOPMENT

2.1 Calling

Though examinations of the meaning and purpose of work can be found in writings from ancient Greece, calling is a relatively young construct of study in psychology. When "calling" first entered into the English vernacular during the Protestant reformation (e.g., Luther, 1520), it had a fully religious connotation: Calling represented labor that was ordained by God. By the 20th century, calling had also taken on secular significance (e.g., Weber, 1918). In the late 20th century, Bellah and colleagues (1985) introduced calling as a work orientation, and proposed that those who view their paid work as a calling find work "morally inseparable from his or her life" (p. 66). In doing so, secular calling entered the mainstream of sociology and industrial-organizational psychology. Research on calling has gained popularity particularly over the past few decades, with an exponential increase in publications across fields such as industrial-organizational psychology, counseling psychology, positive psychology, and management (Thompson & Bunderson, 2019).

Scholars are still converging on a consistent conceptualization of calling. Some scholars (e.g., Dik & Duffy, 2009) still discuss callings in the religious sense, but many others (e.g., Dobrow & Tosti-Kharas, 2011; Hall & Chandler, 2005; Wrzesniewski et al., 1997) do not. In their 2010 review, Elangovan et al. identified two underlying dimensions that underscore most perspectives on calling: religious vs. secular, and occupation related vs. non-occupation related. Inconsistency in how researchers define calling has persisted, leading to a call for streamlined research and arrival at a coherent definition (Dik & Shimizu, 2019). In line with recent research, I define calling as a psychological approach to a role that reflects seeking purpose and meaning, is pro-social in nature, and motivated by an internal or external summons (Dik & Shimizu, 2019; Duffy et al., 2018).

Researchers have identified several correlates and outcomes of calling. Research suggests that having or perceiving a calling is associated with many beneficial personal outcomes such as life satisfaction (Wrzesniewski et al., 1997; Duffy et al., 2012a; 2013a), life meaning (Steger & Dik, 2009), personal growth (Duffy et al., 2014b), well-being (Conway et al., 2015), and engagement in health behaviors and health satisfaction (Clinton et al., 2017; Wrzesniewski et al., 1997). Having or perceiving a calling has also been associated with several positive work-related covariates such as work satisfaction (Wrzesniewski et al., 1997; Duffy et al., 2012a; 2013a), satisfaction with the work domain (Dobrow, 2006), work meaning (Bunderson & Thompson 2009, Yim & Fock 2013), work-related efficacy (Dik & Steger, 2008; Dobrow & Tosti-Kharas 2011; Domene, 2012), and work identity (Bunderson & Thompson, 2009). In addition to these beneficial outcomes, a smaller number of studies suggest calling may have a darker side (Thompson & Bunderson, 2019). For example, calling has been associated with an exaggerated sense of duty and burnout at work (Bunderson & Thompson, 2009; Schabram & Maitlis, 2017).

2.2 Antecedents of Calling

In the face of this history and research, researchers have sought to identify predictors of calling to better understand how callings are developed or maintained. A small but growing body of literature acknowledges that calling appears to be a dynamic construct (e.g., Hall & Chandler, 2005; Hirschi et al., 2019; Praskova et al., 2014; 2015). For example, a few theoretical models of calling propose that calling is updateable over time. In these models, calling changes in response to personal and environmental factors such as changed goals, abilities, career success, self-confidence, and work challenges (Dobrow, 2013; Hall & Chandler, 2005; Schabram & Maitlis, 2017). Calling may be further influenced by fluctuations in work meaning and enacted sensemaking (Rosso et al., 2010; Schabram & Maitlis, 2017).

Empirically, multiple (largely cross-sectional) studies have considered antecedents of calling. Experience meaning appears to be a particularly salient covariate of calling (Duffy et al., 2011b; Duffy et al., 2014a; Duffy et al., 2014b), and work-related variables like job satisfaction, career commitment, vocational clarity and vocational development are also related to higher presence of calling (Duffy et al., 2011b; Duffy et al., 2014a; Duffy et al., 2014b). There is also evidence that perceived social support is related to having a calling (Dalla Rosa et al., 2019). A recent review has called for more research on predictors of calling and identifying behaviors that tend to foster a sense of calling (Thompson & Bunderson, 2019).

According to a seven-year longitudinal study, behavioral involvement and social comfort within the calling domain are related to a decrease in calling over time (Dobrow, 2013). Growth modeling has demonstrated that career planning and career decidedness are related to increased presence of calling (Hirschi & Herrmann, 2013), and change in "career strategies" (seeking career guidance, self-presentation, etc.) may explain the positive relationship between change in career calling and change in psychological career success (Praskova et al., 2014). Finally, intra-individual increase in presence of calling has been related to increased positive affect, but also increased workaholism (Hirschi et al., 2019).

There is a dearth of information about calling and antecedents of calling in older adults, as most calling studies are concentrated in college students or very young adults (e.g., Duffy et al., 2014). Three empirical studies have examined calling in older adults. Hirschi et al. (2019) examined intra-individual change in calling over the course of one year in a sample of older workers aged 50 to 60 and found that an increase in presence of calling was related to both increased positive affect at work and increased workaholism. In a sample of *retired* adults aged 51 and above, Duffy et al. (2017) qualitatively examined barriers to living a calling in retirement, and measured the relationship between calling and life satisfaction. Last, Bengtsson and Flisback (2017) presented six in depth interviews with workers with callings who were about to retire, and then re-interviewed these participants directly after retirement. Examination of these interviews indicated that workers at the end of their career still identified with Dik and Duffy's (2009) tripartite definition of calling consisting of an external summons, broader purpose and meaning, and prosocial orientation. These interviews also indicated that impending retirement felt inevitable, and work appeared to have greater personal meaning as retirement approached. Based on these studies, there is limited but hopeful evidence that calling remains relevant for older workers. However, this small volume of research limits our ability to understand, foster, and maintain calling in later life and may limit middle-aged and older adults' exposure to a host of beneficial outcomes associated with calling.

2.3 Socioemotional Selectivity Theory

Socioemotional Selectivity Theory (SST) is a theoretical lens that may shed light on how and why callings occur among older workers. SST is a lifespan developmental theory that explains how and why preferences, motives, and goal-setting change with the passage of time. SST posits that patterns of social and emotional behavior that we typically associate with “old age” are patterns that actually reflect meaningful changes that have unfolded throughout the life course (Carstensen, 1992). These changes provide a framework for how calling may manifest for older adult workers.

First, SST posits an increase in emphasis on motives related to experiencing *positive emotion* (multi-component response tendencies that resemble positive sensations and positive moods; Cohn & Fredrickson, 2009), *meaning* (people's beliefs that their lives are significant, accompanied by the degree to which they perceive themselves to have a purpose or aim in life; Steger, 2012), and *social connection* (the ways one can connect to others, including social network size, social support, and relationship satisfaction; Holt-Lunstad, 2018) as we move throughout adulthood. As the end-of-life approaches, activities and relationships that are unpleasant or devoid of meaning are no longer compelling (Carstensen et al., 1999). For example, the social networks of the old and very old are relatively smaller than the social networks of younger adults. SST proposes this reduction is due to a careful, selective process resulting in close social contacts who provide support, emotional intimacy, and positive affect above and beyond any reduction due merely to loss or social withdrawal (Carstensen 1991; 1992; 1995). Further, older adults appear to pay more attention to emotionally salient information, and in memory recall tasks, the proportion of emotional material that is recalled increases with age (e.g., Carstensen & Turk-Charles, 1994). Experience sampling data suggests that older adults, when compared to younger adults, experience more positive emotions and more frequently and successfully engage in emotional regulation (Carstensen et al., 2000).

The salience of purpose and meaning, heightened attention to positive emotions, and importance of social connection align well with the construct of calling. As calling includes deriving meaning and purposefulness, enhancing fit and well-being, and enabling connection with others (e.g., Bellah et al., 1985; Dik & Duffy, 2009; Hunter et al., 2010), these three socioemotional motives may act as motivators, or predictors, of calling, as calling represents a desirable end state that fulfills these motives (Higgins, 1997). Empirically, life meaning and the search for meaning have consistently been positioned as correlates of presence of calling (e.g., Duffy et al., 2014b). While meaning, positive emotions, and social connection may be positively related to calling for all workers (e.g., Elangovan et al., 2010), these relationships should be particularly salient for older adults, as SST posits as the end of working life approaches, emphasis and attention are placed on the internal, intuitive, and subjective (e.g., Carstensen et al., 1999). Therefore, I predict:

Hypothesis 1: a) Meaning, b) positive emotion, and c) social connection motives will be positively related to calling for older workers.

2.4 Emotional Regulation Goals as a Linking Mechanism

Goals can be thought of as a cognitive representation of a desired end state that are used in service of underlying, internal motives (Talevich et al., 2017). Goals serve as behavioral stepping stones, or parts of behavioral sequences that transform internal intentions and motives into desirable end states (e.g., Kanfer & Kanfer, 1991; Locke & Latham, 1990; Talevich et al., 2017). SST posits there are two overarching classes of goals- information acquisition and emotional regulation goals (Carstensen, 1999; 2003; 1998). Information acquisition goals are characterized by pursuit of information, and are generally geared toward learning and gaining knowledge about the world around us (Carstensen, 1999). These include instrumental goals like seeking information and advice, and understanding the culture, language, and values of the environment you are in (e.g., Carstensen et al., 1999). Emotional regulation goals enable regulation and control over one's emotional state, usually via social contact. These goals prioritize emotional meaning, and have been theorized to include goals such as finding life meaning, gaining emotional intimacy, feeling socially embedded, maintaining one's self-concept, and experiencing more positive affect than negative (Carstensen, 1992; 1999).

As the end of working life approaches, SST posits that emotional regulation goals that align with socioemotional motives (e.g., meaning, positive emotions, and social connection) will be selected over information acquisition goals. The trajectory of these goals over the lifespan is depicted in Figure 2.

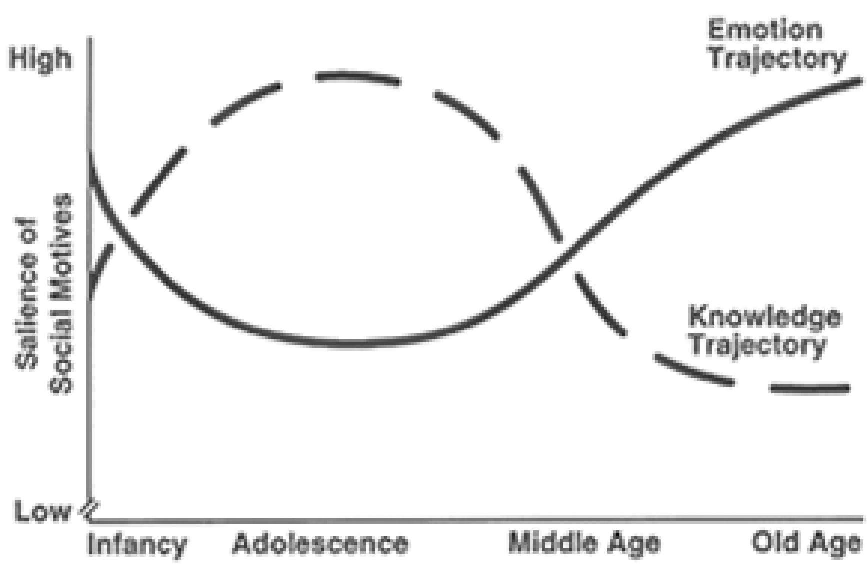

Figure 2. Goal Trajectories From Socioemotional Selectivity Theory

Emotional goals are extremely salient in infancy and early childhood, become less so from adolescence through early adulthood, and then rise in salience from later adulthood through old age (Carstensen, 1992; Carstensen et al., 1999). Informational (exploration) goals remain salient through middle adulthood, and then decline gradually into old age (Carstensen, 1995; Carstensen et al., 1999). Because informational goals decline in importance for older adults, I examine emotional regulation goals in the current model.

When considering how and why adults select and pursue goals, SST explicitly adopts the view of Bandura (1987, 1991) that people are inherently agentic in goal selection and choose to enact behavior that will lead to goal accomplishment (Carstensen et al., 1999). Goals are thought to direct effort, behavior, and attention in service of personal beliefs, preferences, and motives (e.g., Locke & Latham, 1990). So, as we age and experience heightened preferences for positive emotions, meaning, and social connection, older adults should select corresponding socioemotional goals to satisfy these motives. In turn, it is through this process of goal selection and enactment that individuals arrive at an end state of realized calling.

There is limited empirical research linking goals to career calling, and goals and goal-setting have not yet been examined as predictors of calling. In existing studies calling has been positioned as a predictor of career-related goals and effort, which in turn affects various work performance and well-being outcomes (Allan & Duffy, 2014; Praskova et al., 2014; Praskova et al., 2015). However, existing calling theory supports the notion of goal selection as a precursor of career calling. Hall and Chandler's (2005) Calling Model of Psychological success proposes that calling is enhanced and updated via a self-reinforcing cycle in which goals and effort lead to psychological career success, which in turn bolsters a sense of calling. In line with this model, SST, and the extant goal-setting literature, I therefore predict:

Hypothesis 2: Emotion regulation goal selection will mediate the positive relationships between a) meaning, b) positive emotion, and c) social connection and calling for older workers.

2.5 Occupational Future Time Perspective as a Moderator

Generally, future time perspective is the extent to which one views the future as open-ended or limited (Lang & Carstensen, 2002). Zacher and Frese (2009) directly adapted the concept of future time perspective from the lifespan development literature for use in the work context, called occupational future time perspective. Occupational future time perspective is an individual's beliefs about and perceptions of their remaining time at work and future work opportunities, ranging from limited to expansive (Zacher & Frese, 2009; 2011). Occupational future time perspective originates from socioemotional selectivity research (Carstensen et al., 1999; Rudolph et al., 2018), and as such, occupational future time perspective literature typically "invokes explanations borrowed from Carstensen's socioemotional selectivity theory" (Rudolph et al., 2018, p. 231). While time perspective can be context dependent, I focus on occupational future time perspective as a trait-like individual difference in how one views their occupational future as limited or open-ended (e.g., Seigts, 1998). Occupational future time perspective is related to job satisfaction, job performance, and other work-related well-being outcomes, and has been found to account for unique variance in work-related outcomes over and above other individual differences like age (Rudolph et al., 2018).

I argue that one's occupational future time perspective shapes how socioemotional motives are felt and experienced, which has implications for the selection of emotional regulation goals. When individuals feel like they have plenty of time left in their career (i.e., view their occupational future as expansive), they feel like they have plenty of time to prioritize *distant* social contacts and externally-oriented motives that take time to satisfy, like achievement, knowledge, and promotion (Carstensen et al., 1999; Gjesme, 1983; Kooij et al., 2011; Seijts, 1998; Weikamp & Goritz, 2016). On the other hand, when individuals feel their occupational time is running out, and the end of their careers seem imminent, individuals are more present-oriented. This present-orientation heightens needs that can be satisfied in the moment such as needs for close social contact, meaningfulness, positive affect, and affirmation of current self-concept (Carstensen, 1998; 2003; Carstensen et al., 1999; Gjesme, 1983; Kanfer and Ackerman, 2004; Seijts, 1998; Weikamp & Goritz, 2016). Thus, individuals with low (limited) occupational future time perspective may experience heightened awareness of their internal socioemotional motives, and feel an increased sense of urgency to fulfill those motives. The relationships between socioemotional motives and emotional regulation goals should therefore depend on OFTP such that the proposed relationships between motives and goals are stronger for older workers experiencing limited OFTP. I predict:

Hypothesis 3: Limited (low) occupational future time perspective will strengthen relationships between a) meaning, b) positive emotion, and c) social connection motives and the selection of emotional regulation goals.

CHAPTER 3 METHOD

3.1 Participants

Participants in this study were recruited via Prolific, an online research subject pool, in March 2023. To be eligible for the study, participants were required to be at least 50 years old. SST posits increases in meaning, positive emotion, and social connection motives and emotional regulation goal selection beginning in middle age and increasing into older age (Carstensen, 1992; 1995; Carstensen et al., 1999), and studying adults age 50 and over is in line with prior SST-focused studies conducted by Carstensen and colleagues (e.g., Carstensen, 1992; Lang & Carstensen, 2002) as well as SST-focused review papers concerning older adults (e.g., Kooij et al., 2011; Ng & Feldman, 2008). Additionally, eligible participants must have a paid part-time or full-time job, consistent smartphone or computer access to complete 3 surveys over a two-week period, and be located in the United States. To ensure adequate response rates, filters were used in Prolific such that the study was only visible to potential participants who had been active on the platform in the past 90 days and had completed three prior studies. Therefore, the eligibility criteria set up in Prolific made my study visible only to those participants who 1) were located in the United States, 2) were at least 50 years old, 3) had a paid job, 4) had consistent smartphone or computer access, 5) were active on the platform in the previous 90 days, and 6) had completed three prior studies on Prolific.

The time one survey received 316 responses on Prolific. Of the 316 participants, 12 provided information that did not match their Prolific screening (eligibility) criteria (age, work status) and were removed. The remaining 304 participants received an invitation to complete the time two and time three surveys via Prolific. Ultimately 293 participants completed survey two (a 96.4% response rate) and 291 participants completed survey three (95.7% response rate), yielding 286 participants who had data for all three surveys.

Data quality is a concern when using online data collection methods, and it is recommended to use a combination of different types of screening techniques (Zickar & Keith, 2023). In the present study responses were screened for insufficient effort, attention, and false identities. First, the time one survey asked for participants' age on two separate occasions in two different formats. If participants did not report the same age for each item they were to be removed from analysis (zero participants removed). Additionally, each survey had two attention check items randomly displayed during participation. For example, the time one survey had "I believe that… choose somewhat agree" included as an item. Participants were removed from analysis if they failed any attention checks in any of the three surveys, resulting in 20 participants removed. Next, participants were instructed to respond to an open-ended item ("Are there any reasons why we should not use your data?") at the conclusion of each survey. Participants were to be removed if they failed to respond to this item or if their answer did not make sense (zero participants removed). Last, participants' IP addresses were examined. Following recent recommendations from Bernerth et al. (2021), IP addresses were looked up to ascertain their associated internet service provider (ISP) using the publicly available tool at https://www.infobyip.com/. Each associated ISP was examined and designated as either "targeted" or "nontargeted". Targeted ISPs (e.g., Comcast, Cox Communications, etc.) are consumer-focused and thought to represent genuine respondents, while nontargeted ISPs are proxy-based and have been associated with bots or respondents who are concealing their true identity. Data provided by users from targeted ISPs is associated with high within-person reliability, scale reliability, completion of open-ended items, and correct responses to attention check items (Bernerth et al., 2021). In the present study, only one IP address was associated with a nontargeted ISP and was removed from analysis.

Data from 267 eligible participants was retained. This number exceeded the sample size goal of 215 participants based on the results of an RMSEA power analysis using an effect size of d = .30 (small effect), alpha of .05, and power of .80. Participants were predominantly female (54%), 57.78 years old on average (SD = 6.16, Range = 50-81), and mostly White (88%), followed by Black or African American (6%), Asian (2%), and multiple races (2%). Participants worked on average 38.01 hours per week (SD = 11.50, Range = 5-71) with an average job tenure of 10.21 years (SD = 8.32). Participants worked in a variety of job titles, including but not limited to accountant, adjunct faculty, cashier, CEO, foreman, graphic designer, librarian, nurse, professor, real estate agent, teacher, and web developer. Participants most frequently reported an income between $25,000 and $49,999 (22%) or $50,000 to $74,999 (22%), followed by $75,000 - $99,999 (16%), less than $25,000 (12%), $100,000 - $124,999 (10%), $150,000 or more (9%), and $125,000 - $149,999 (7%). Most participants had a bachelor’s degree (41%), followed by a master’s degree (21%), some college (19%), a high school diploma (7%), a doctoral or other professional degree (6%), and post-secondary, trade or vocational school (5%).

3.2 Procedure

Participants were recruited via Prolific, an online research subject pool. Data was collected at three timepoints, with one week between the time one and time two surveys, and one week between the time two and time three surveys (see Figure 3).

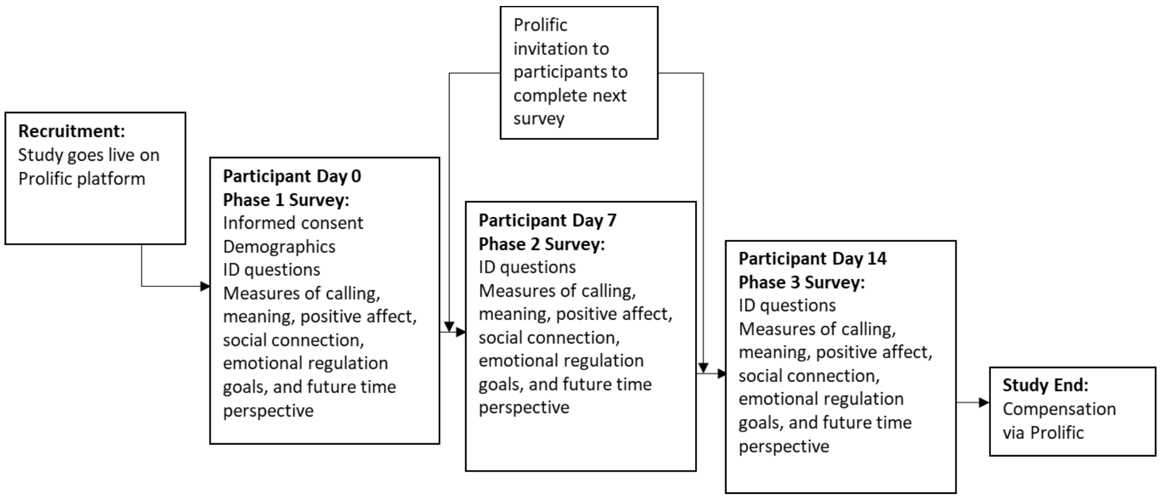

Figure 3. Study flow.

This timeframe was selected for convenience, but also to reduce common method bias and to introduce temporal separation of predictors, mediators, and outcomes. At the beginning of the time one survey, participants read and signed informed consent, then completed questions related to eligibility criteria. If their answers indicated they were not eligible, the participant was instructed to return to Prolific and formally exit the study. If eligibility was confirmed, participants completed the rest of the online survey which contained all measures, including demographics and their Prolific ID number (to link responses).

Participants who successfully completed the time one survey were directly invited to complete the time two survey via Prolific one week later. One reminder message was sent to participants 12 hours after the initial time two survey invitation. Then, those same participants (who had completed the time one survey) were invited to complete the time three survey one week after that. One reminder message was also sent to participants 12 hours after the initial time three survey invitation. After completion of the time three survey, responses from all three times were approved in Prolific and compensation was dispensed, also through the Prolific platform. Participants were compensated $4.50 for survey one (approximately 25 minutes), $2.00 for survey two (approximately 10 minutes), and $2.00 for survey three (approximately 10 minutes), for a total rate of $12.00 per hour.

3.3 Measures

All survey items are listed in Appendix A.

Demographics. (Time 1) Participants reported their gender identity, age, ethnicity/race, and education level. For work-related demographics, participants reported their job title, industry, job tenure, average work hours per week, and household income.

Meaning Motives. (Time 1) Meaning motives were measured using the six-item ($\alpha = .91$) Need for Meaning Scale (Zhang et al., 2018). Participants responded using a 7-point scale ranging from 1 = *absolutely untrue* to 7 = *absolutely true*. A sample item is “It is important for me to lead a meaningful life.”

Positive Emotions Motives. (Time 1) Positive affect motives were measured with 10 items ($\alpha = .88$) adapted from the positive affect subscale of the PANAS (Watson et al., 1988). Participants rated the extent to which they *value* feeling this way regarding each adjective using a 5-point scale ranging from 1 = *not at all* to 5 = *extremely.* A sample adjective includes "inspired".

Social Connection Motives. (Time 1) Social Connection motives were measured using the 9-item ($\alpha = .94$) positive stimulation subscale of the Interpersonal Orientation Scale for Affiliation Motivation (IOS; Hill, 1987). Participants responded using a 5-point scale ranging from 1 = *very untrue of me* to 5 = *very true of me*. A sample item is "I seem to get satisfaction from being with others more than a lot of other people do."

Emotional Regulation Goals. (Time 2) Emotional regulation goal selection were measured using four ($\alpha = .81$) emotion regulation goals adapted from Lang & Carstensen, 2002. Participants rated how frequently they select goals using a 5-point scale ranging from 1 = *never* to 5 = *always.* A sample item includes "On a scale from 1 = Never to 5 = Always, please rate how frequently you focus on and select the following goal: to know myself and my feelings very well."

Calling. (Time 3) Calling was measured using the two-item presence subscale of the Brief Calling Scale (Steger & Dik, 2006). This scale contains two items: "I have a calling to a particular kind of work", and "I have a good understanding of my calling as it applies to my career." ($\alpha = .91$) Participants responded using a 5-point scale ranging from 1 = *not at all true of me* to 5 = *totally true of me.*

Occupational Future Time Perspective. (Time 1) Occupational future time perspective was measured using the Occupational Future Time Perspective Scale by Zacher and Frese (2009). Participants rated the degree to which they agree with each of six items ($\alpha = .89$) using a 7-point scale ranging from 1 = *Very untrue* to 7 = *Very true*. A sample item includes "Many opportunities await me in my occupational future."

CHAPTER 4 RESULTS

4.1 Preliminary Analyses

All data cleaning, assumption checking, descriptive statistics, and preliminary analysis was conducted in R using base R and the tidyverse and ltm packages (R Core Team, 2023; Rizopoulos, 2006; Wickham et al., 2019). Psychometric properties of each multi-item reflective scale were examined by computing Cronbach's alpha, as reported in the measures section. I checked the data for assumptions of normality, including outliers, linearity, homogeneity of variance, homoscedasticity, and systematic missingness. Normality and the presence of outliers were assessed using descriptive statistics and by reviewing frequency tables and histograms for each variable. Descriptive statistics for each study variable and control variables are presented in Table 1. No outliers were detected and no obvious violations of assumptions were observed.

Table 1. *Descriptive statistics for study variables.*

Variable	*N*	Mean	*SD*	Median	Min	Max	Skew	Kurtosis
Meaning	267	5.46	1.20	5.67	1.00	7.00	-1.19	1.51
Positive Emotions	267	3.93	0.64	4.00	1.90	5.00	-0.68	0.18
Social Connection	267	3.07	1.01	3.11	1.00	5.00	-0.04	-0.89
Emotional Regulation Goals	267	3.66	0.88	4.00	1.00	5.00	-0.89	0.37
Calling	267	6.67	2.50	7.00	2.00	10.00	-0.34	-1.00
Future Time Perspective	267	3.12	1.27	3.00	1.00	7.00	0.40	-0.19
Optimism	267	4.01	0.72	4.11	1.56	5.00	-0.92	0.74
Work Hours	267	38.01	11.50	40.00	5.00	71.00	-0.72	1.30

Next, I examined my variables of interest for missingness and if values appeared to be missing at random. When missing data comprise less than 5% of your sample, missing data can be considered missing at random and missing data treatments are generally equivalent (Tabachnick et al., 2007). Missing data comprised only .05% of the data in my sample. My structural equation models were analyzed using the full information maximum likelihood method, so imputation was not necessary and missing data was estimated within the analysis (Enders & Bandalos, 2001).

A confirmatory factor analysis was performed on the positive emotions motives measure prior to hypothesis testing. Validating the proposed measurement model is important because the positive emotions motives measure used here is an adapted scale (Bandalos & Finney, 2010). All ten scale items were specified to load on a single factor as per the original PANAS scale development by Watson et al. (1988). Overall model fit was assessed using the comparative fit index (CFI), root mean square error of approximation (RMSEA), and standardized root mean square residual (SRMR). A CFI greater than or equal to .90, RMSEA value equal to or less than .06, and SRMR equal to or less than .08 will indicate good fit (Hu & Bentler, 1999). Overall model fit was poor ($\chi2(35) = 169.26$, CFI = .88, RMSEA = .12, SRMR = .07), and factor loadings for each item ranged from .50 to .75. After examining individual item variance, cross-item correlations, and model modification indices, the "attentive" item was removed from analysis. This item has been identified in prior research as not clearly representing an emotion, or better-reflecting activation (Diener et al., 1995; Egloff et al., 2003; Larsen & Diener, 1992). After removal, the remaining nine-item scale had significantly better fit ($\Delta \chi2(8) = 66.4$, $p < .05$; $\chi2(27) = 102.90$, CFI = .92, RMSEA = .10, SRMR = .06). Updated factor loadings ranged from .49 to .76 and can be found in Table 2. This nine-item scale was used in all further analysis.

Table 2. *Confirmatory Factor Analysis for Positive Emotion Motives Measure*

Item	Factor Loading*
	1
Interested	0.64
Excited	0.73
Strong	0.67
Enthusiastic	0.76
Proud	0.50
Alert	0.49
Inspired	0.76
Determined	0.64
Active	0.68

* = standardized factor loadings

A confirmatory factor analysis was also performed on the emotional regulation goals measure prior to hypothesis testing. Similar to the measure for positive emotion motives, validating this proposed measure is important because the emotional regulation goals scale used here is adapted for a novel use (Bandalos & Finney, 2010). All four scale items were specified to load on a single factor. Overall model fit was good ($\chi2(2) = 1.93$, CFI = .99, RMSEA = .00, SRMR = .01), and factor loadings for each item ranged from .61 to .77. Factor loadings can be found in Table 3. All four items were retained throughout analysis.

Table 3. *Confirmatory Factor Analysis for Emotional Regulation Goals Measure*

Item	Factor Loading*
	1
To be autonomous in my feelings	0.77
To know myself and my feelings very well	0.75
To have control over my feelings	0.76
To not depend on someone else's feelings	0.61

* = standardized factor loadings

Before testing my hypotheses, I evaluated a measurement model for all primary study variables (excluding control variables and the "attentive" item from the adapted PANAS measure) where all items were specified to load onto their intended constructs. This model demonstrated poor fit ($\chi^2(395) = 944.38$, CFI = .89, RMSEA = .07, SRMR = .06). The first issue encountered in the model was negative estimated variance in the Brief Calling Scale items. Upon inspection, the raw data for both items appeared normal, however, the cross-item correlation was .83. Given this strong correlation, I made the decision to use the composite score of the two-item Brief Calling Scale as the outcome variable going forward. This eliminated the negative estimated variance warning. The second issue related to fit was correlated error variance between two items from the Interpersonal Orientation Scale measuring social connection motives. Given the high degree of overlap between these two items ("I think being close to others, listening to them, and relating to them on a one-to-one level is one of my favorite and most satisfying pastimes" and "Just being around others and finding out about them is one of the most interesting things I can think of doing"), I allowed these two items to covary. All hypothesis testing results reported in-text going forward include these changes, however, all analyses were also run with no alterations and can be found in a footnote.

Fit for this updated measurement model was adequate ($\Delta\ \chi 2(57) = 260$, $p < .05$; $\chi 2(367) = 778.20$, CFI = .91, RMSEA = .07, SRMR = .06). Correlations between all study variables and control variables can be found in Table 4. Correlations between study variables range from small to medium in size, and all are significant at the $p < .01$ level in the expected directions.

Table 4. *Correlations.*

Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9
1. Meaning	5.46	1.20									
2. Positive Emotions	3.93	0.64	.33**								
3. Social Connection	3.07	1.01	.41**	.33**							
4. Emotional Regulation Goals	3.66	0.88	.38**	.32**	.20**						
5. Calling	6.67	2.50	.45**	.34**	.33**	.25**					
6. Future Time Perspective	3.12	1.27	.24**	.24**	.22**	.19**	.28**				
7. Optimism	4.01	0.72	.23**	.32**	.34**	.21**	.30**	.31**			
8. Work Hours	38.01	11.50	-.04	.08	.03	.08	.04	.15*	.05		
9. Age	57.78	6.16	.14*	.06	.04	.05	.24**	-.11	.11	-.12*	
10. Income	3.50[1]	1.79	.05	.11	.02	-.03	.00	.20**	.12	.33**	-.05

Note. M and *SD* are used to represent mean and standard deviation, respectively. * indicates $p < .05$. ** indicates $p < .01$. [1]Income was a categorical variable, such that 1 = \$0 - \$24,999, 2 = \$25,000 - \$49,999, 3 = \$50,000 - \$74,999, 4 = \$75,000 - \$99,999, 5 = \$100,000 - \$124,999, 6 = \$125,000 - \$149,999, 7 = \$150,000 or more

4.2 Hypothesis Testing

Hypotheses were tested using structural equation modeling using the sem function in the lavaan package (Rosseel, Y., 2012) in R. Effects were estimated using the full information maximum likelihood method and standard errors were estimated using 5000 bootstrapped iterations (Preacher et al., 2007). I first tested the core mediation model to evaluate hypotheses 1a through 1c and 2a through 2c. Overall model fit was assessed using the comparative fit index (CFI), root mean square error of approximation (RMSEA), and standardized root mean square residual (SRMR). Direct hypothesized relationships were assessed by examining unstandardized path coefficients for significance at the $p < .05$ level. Indirect hypothesized relationships were assessed by examining bootstrapped confidence intervals (Hayes, 2013) around the unstandardized coefficient to see if the confidence interval contained zero. Significant effects are supported by the absence of zero within the confidence intervals.

Next, I sequentially tested three first-stage moderated-mediation models to estimate hypothesized interactions between occupational future time perspective and the meaning – emotional regulation goals, social connection – emotional regulation goals, and positive affect – emotional regulation goals pathways. These moderated mediation models were estimated sequentially to avoid interpretational ambiguities when including large numbers of interaction terms in the same model and to prevent model convergence issues. Each model followed the procedure for testing latent interactions by Kenny and Judd (1984), and as instructed by Schoemann and Jorgensen (2021) using the lavaan and semTools (Jorgensen et al., 2022) packages in R. As outlined by Kenny and Judd (1984), I first created double mean-centered product-indicator interaction terms, where each item (indicator) for each latent predictor variable is multiplied with an indicator of the latent moderator. For example, each (centered) item of the Need for Meaning Scale representing Meaning motives was multiplied by each (centered) item of the Occupational Future Time Perspective Scale to create 36 products. These products were then used as indicators of a new latent variable representing the interaction between the two latent predictors. This latent interaction variable can then be entered into a structural equation model just like any other predictor to obtain an estimate of the latent interaction effect. For example, in the case of the first-stage moderated-mediation model where occupational future time perspective was positioned to moderate the meaning – emotional regulation goals relationship, I first added occupational future time perspective into the model as a predictor of emotional regulation goals and calling. Then, I entered the latent occupational future time perspective x meaning motives interaction variable into the model as a predictor of emotional regulation goals. To assess the hypothesized moderation relationships, I first examined the unstandardized regression coefficient of the interaction term for significance. In the case of significance, the effect would be probed further using simple slopes analysis at -1 *SD* and +1 *SD* values of occupational future time perspective. Then, to further assess moderated-mediation, I would examine the significance of the conditional indirect effects using a bootstrapping approach with bias-corrected 95% confidence intervals at -1 *SD* and +1 *SD* values of occupational future time perspective.

After following the fully latent interaction procedure outlined above, the moderated-mediation models failed to converge. This is a common issue in assessing latent interactions, particularly those with many indicator terms (Cortina et al., 2019). To simplify the model, I entered occupational future time perspective into the model as an observed variable, resulting in a “partially latent” interaction (Cortina et al., 2019; Schoemann & Jorgensen, 2021). This greatly reduced the number of product indicator interaction terms. (For example, the meaning motives x occupational future time perspective interaction resulted in only 6 product terms, rather than 36). Partially latent interaction models were used for hypothesis testing.

The overall fit for the core mediation structural equation model was adequate ($\chi^2(367) = 783.81$, CFI = .91, RMSEA = .07, SRMR = .06). Table 5 contains the estimates and confidence intervals for the relationships in this model.

Table 5. *Results from the core mediation model.*

Pathway	Unstandardized Estimate	SE^1	95% $C.I.^2$ Lower	Upper	p	Standardized Estimate
Direct Effect						
Meaning Motives → Calling	0.89	0.23	0.46	1.36	< .001	0.33
Positive Emotion Motives → Calling	1.01	0.38	0.30	1.80	< .01	0.19
Social Connection Motives → Calling	0.31	0.20	-0.06	0.71	0.12	0.11
Emotional Regulation Goals → Calling	0.10	0.24	-0.38	0.59	0.70	0.03
Meaning Motives → Emotional Regulation Goals	0.31	0.08	0.16	0.49	< .001	0.35
Positive Emotion Motives → Emotional Regulation Goals	0.49	0.15	0.20	0.81	<.01	0.27
Social Connection Motives → Emotional Regulation Goals	-0.01	0.08	-0.16	0.14	0.91	-0.01
Indirect Effect						
Meaning Motives → Emotional Regulation Goals → Calling	0.03	0.08	-0.12	0.19	0.70	0.01
Positive Emotion Motives → Emotional Regulation Goals → Calling	0.05	0.12	-0.12	0.29	0.71	0.01
Social Connection Motives → Emotional Regulation Goals → Calling	0.00	0.02	-0.04	0.05	0.97	0.00

Hypothesis 1 stated that (a) meaning, (b) positive emotion, and (c) social connection motives will be positively related to calling for older workers. Meaning motives were significantly, positively related to calling (unstandardized effect b = .89, SE = .23, p < .01), as were positive emotion motives (unstandardized effect b = 1.01, SE = .38, p = .01), supporting Hypothesis 1a and 1b. Social connection motives were not significantly related to calling (unstandardized effect b = .31, SE = .20, p = .12), so Hypothesis 1c was not supported. Hypothesis 2 stated emotion regulation goal selection will mediate the positive relationships between a) meaning, b) positive emotion, and c) social connection motives and calling for older workers. Emotion regulation goals were not significantly related to calling (unstandardized effect b = .10, SE = .24, p = .69), and indirect effects were not significant for meaning motives (unstandardized indirect effect = .03, SE = .08, 95% CI = [-.12, .19]), positive emotion motives (unstandardized indirect effect = .05, SE = .12, 95% CI = [-.22, .29]), nor social connection motives (unstandardized indirect effect = .00, SE = .02, 95% CI = [-.04, .05]), yielding no support for Hypotheses 2a-c.[1]

[1] Results followed the same pattern in a model that was not adjusted for poor fit. Meaning motives (b = .51, p < .01) and positive emotion motives (b = .56, p < .01) were significantly related to calling. Social connection motives were not (b = .12, p = .20). Emotion regulation goals were not significantly related to

Hypothesis 3 stated that limited (low) occupational future time perspective would strengthen relationships between a) meaning, b) positive emotions, and c) social connection motives and the selection of emotional regulation goals. The meaning motives x occupational future time perspective interaction term was not a significant predictor of emotional regulation goals, (unstandardized effect $b = .06$, $SE = .05$, 95% $CI = [-.03, .16]$), nor was the positive emotion motives x occupational future time perspective interaction term (unstandardized effect $b= .03$, $SE = .07$, 95% $CI = [-.10, .18]$), nor the social connection motives x occupational future time perspective interaction term (unstandardized effect $b = .04$, $SE = .05$, 95% $CI = [-.05, .13]$), yielding no support for Hypotheses 3a-c. These non-significant interaction terms indicate there was no evidence for moderation by occupational future time perspective, so no further steps were performed and moderated-mediation was not probed.[2]

4.3 Supplementary Analysis

Optimism was identified as a covariate that could affect sense of calling in older adults. Older adults are sometimes subject to a "positivity effect" (Reed & Carstensen, 2012) such that they attend to and remember more positive than negative information. This effect is thought to affect well-being, and optimism in particular has been related to health and well-being in older adults (e.g., Chopik et al., 2015; Ferguson et al., 2010). Results were robust after adding optimism (measured with the nine item Optimism Scale;

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calling (b = .00, p = .99), and indirect effects were not significant for meaning motives (indirect effect = .00, SE = .04, 95% CI = [-.08, .08]), positive emotion motives (indirect effect = .00, SE = .06, 95% CI = [-.12, .12]), nor social connection motives (indirect effect = .00, SE = .01, 95% CI = [-.02, .02]).

[2] Results followed the same pattern in a model that was not adjusted for poor fit. The meaning motives x occupational future time perspective interaction term was not a significant predictor of emotional regulation goals, ($b = .06$, $SE = .05$, 95% $CI = [-.03, .17]$), nor was the positive emotion motives x occupational future time perspective interaction term ($b= -.05$, $SE = .06$, 95% $CI = [-.12, .12]$), nor the social connection motives x occupational future time perspective interaction term ($b = .06$, $SE = .05$, 95% $CI = [-.04, .15]$).

$\alpha = .92$; Coelho et al., 2018) into the structural equation model as a control variable predicting calling. Meaning motives ($b = .50$, $p < .01$) and positive emotion motives ($b = .52$, $p < .01$) remained significantly related to calling, while all other hypothesized relationships were not supported.

Work hours was also identified as a potential covariate. Prior research suggests daily work hours are positively related to calling (Clinton et al., 2017). Calling has also been associated with overcommitment, an exaggerated sense of moral duty, and workaholism (Bunderson & Thompson, 2009; Duffy et al., 2015; Keller et al., 2016), all of which could result in spending more time at work. Results were robust after adding work hours (measured with a single item, “How many hours do you currently work per week?”) into the structural equation model as a control variable. Meaning motives ($b = .51$, $p < .01$) and positive emotion motives ($b = .55$, $p < .01$) remained significantly related to calling, while all other hypothesized relationships were not supported.

Differences between participants who reported engaging in bridge employment (employment that occurs in older workers after retirement from a career, but before complete withdrawal from the labor force; Gobeski & Beehr, 2009; Shultz, 2003) and those who did not were meant to be explored. However, only 11 participants reported bridge employment, so analysis was not performed.

CHAPTER 5 DISCUSSION

The central aims of this study were to identify predictors of career calling and to investigate a theoretically-guided mediator that could explain how a sense of calling is developed in older adult workers. Using socioemotional selectivity theory (SST; Carstensen, 1992), I examined motives to experience meaning, positive emotions, and social connection and their effects on emotional regulation goals and subsequent presence of calling. I also examined whether occupational future time perspective (OFTP) moderates the relationships between socioemotional motives and emotional regulation goals. Results support the notion that motives for meaning and positive emotion are directly, positively related to calling, while motive for social connection was not related to calling. Contrary to my hypotheses, emotional regulation goals did not mediate the relationships between any of these motives and calling. Finally, occupational future time perspective did not strengthen relationships between meaning, positive emotion, and social connection motives and emotional regulation goals.

5.1 Theoretical Implications

This study reveals that meaning motives and positive emotion motives are positively related to career calling in older adult workers. These findings are consistent with tenets of SST and calling research, and suggest calling may represent an end state that satisfies socioemotional motives that are salient in older age. This study is the first to examine calling through the lens of SST, and lays groundwork for future studies to unite lifespan developmental theories with the construct of calling. Prior calling studies have primarily focused on theories of learning (e.g., social learning theory; Bandura, 1977), motivation (e.g., Self-Determination Theory; Deci & Ryan, 2000) and stress (e.g., Conservation of Resources; Hobfoll, 1989) as rationale. Applying lifespan developmental theories such as SST uniquely broadens our understanding of calling in older adulthood.

Importantly, the present study focuses on older adult workers, a population that is understudied in the calling literature and historically undervalued (e.g., Posthuma & Campion, 2009). My findings build theoretical knowledge by identifying individual factors that relate to calling, increasing our understanding of the construct in older adults and adding to the handful of prior studies that have shown experiencing a calling remains relevant into older age (Bengtsson & Flisback, 2017; Duffy et al., 2017; Hirschi et al., 2019). Additionally, this study focuses on calling as a dependent variable, whereas most current literature focuses on identifying correlates and outcomes (Thompson & Bunderson, 2019). Focus on antecedents allows us to better understand how or why callings might develop. Though some prior research has shown that calling is associated with a few undesirable outcomes, like overcommitment (e.g., Bunderson & Thompson, 2009; Schabram & Maitlis, 2017), for workers who are interested in developing a sense of calling for themselves, my work indicates that individual meaning and positive emotion motives may be relevant, answering a call for scientific research elaborating predictors of calling (Thompson & Bunderson, 2019). This work also complements prior research suggesting that meaning in life and work meaning may be antecedents to experiencing calling (Duffy et al., 2011b; Duffy et al., 2014a; Duffy et al., 2014b).

Interestingly, social connection motives were not related to calling. Social connection is thought to be important for older adults, particularly relationships that provide support, emotional intimacy, and affirmation of self-concept (Carstensen 1991; 1992; 1995; Carstensen et al., 1999). Many calling definitions contain a social component (e.g., Bellah et al., 1985; Dik & Duffy, 2009; Hunter et al., 2010). However, these components often reflect a desire to do good for society or other prosocial motivation (e.g., "…to help others or contribute to the common good"; Duffy et al., 2018, p. 426). So, the social connection associated with experiencing calling, though meaningful, may not reflect the intimacy of the social connection sought by older adults as per SST. Further, working older adults may seek meaningful connection with family members or friends in lieu of coworkers, which would satisfy their motives outside of the workplace and outside of viewing their career as a calling.

Also interestingly, emotional regulation goals do not appear to mediate relationships between socioemotional motives and calling in older adults. SST proposes that adults are inherently agentic in their goal selection, and that emotional regulation goals should take precedence over other types of goals throughout old age (Carstensen et al., 1999). The timeframe for this goal selection, however, is not specified in SST. SST seems to suggest that changes in motives and goal selection manifest across stages in life, over years or decades (Carstensen, 1995; Carstensen et al., 1999). Other lifespan developmental theories also suggest that individuals may have years-long windows to set age-appropriate developmental goals (Heckhausen et al., 2010). Similarly, though emotional regulation goals in older adults are postulated to directly affect health and well-being (Lockenhoff & Carstensen, 2004), the time it takes to affect such outcomes is ambiguous. Perhaps the two-week period used in this study is not the appropriate timeframe to capture emotional regulation goal setting in response to socioemotional motives and their downstream effects. Future work should consider alternate, longer timeframes (years) for studying emotional regulation goals in relation to underlying motives and well-being outcomes.

Occupational future time perspective does not appear to alter the strength of the relationships between motives and emotional regulation goals. I sought to explain *for whom* the relationships hypothesized here may be most relevant, positioning occupational future time perspective as an individual difference and moderator. While some prior work supports viewing occupational future time perspective as such (e.g., Seijts, 1998), a systematic review indicates that occupational future time perspective quantitatively functions well as both a moderator and as a direct predictor of motivational and workplace well-being outcomes (Henry et al., 2017). The SST literature, where most of the rationale for how occupational future time perspective operates comes from, suggests general future time perspective may function more clearly as a predictor of emotional regulation goals, as limited future time perspective is suggested to *lead to* or *direct attention* to emotional goals (Carstensen et al., 2003). Nonetheless, the present research makes a unique contribution by examining an individual factor that could enhance or diminish relationships between socioemotional motives and goals in a priority population of working older adults.

5.2 Practical Implications

On a practical level, employees who wish to experience calling at work may aim to satisfy their motives for meaning and positive emotions at work. Multiple strategies have been identified to enhance the meaningfulness and emotional experience of work. For example, job crafting is a process in which employees make physical and cognitive changes to the boundaries of their work (Wrzesniewski & Dutton, 2001). Job crafting has been recognized as a tool that can be used to alter jobs in personally meaningful ways that increase both the meaning and enjoyment of work (Berg et al., 2013). Importantly, job crafting has also been suggested as a powerful behavior that older workers may engage in to successfully age at work, and to increase correspondence between their current job and their updated motives and abilities (Kooij, 2015). In a recent job crafting intervention, job crafting was shown to increase P-E fit in older workers over and above younger workers (Kooij et al., 2017). Additionally, at a more macro level, career crafting (proactive behaviors that workers perform to self-manage their career and optimize fit; Tims & Akkermans, 2020) has also been suggested as a tool older workers may use when changing jobs to personalize their career in response to internal motives and priorities (Feldman & Shultz, 2018).

Another strategy that may satisfy motives for meaning and positive emotions is participating in generative activities. Generativity is the opportunity to share knowledge and experience, and to pass on ideas and values to younger individuals (Mor-Barak, 1995). Generative activities in the workplace include things like mentoring younger workers, training new workers, or teaching a new skill to coworkers (e.g., Doerwald et al., 2021; McAdams & St. Aubin, 1992). Research has demonstrated generative work behaviors are related to positive affect outcomes at work (Doerwald et al., 2021), and generative work tasks and roles become more important as we age, increasing the personal meaning of work and increasing engagement in older workers (e.g., Kanfer & Ackerman, 2004; Kooij et al., 2008; Nagy et al., 2019).

Organizations may be interested in enhancing their employees' sense of calling since workers who experience calling are committed to their jobs, engaged at work, and happy (e.g., Douglass et al., 2016; Duffy et al., 2014; 2016; Wrzesniewski, 2012; Yoon et al., 2017). As older adults comprise more and more of the workforce, experiencing a calling could aid in retaining and motivating these employees. In addition to providing opportunities for employees to craft their jobs and take on generative work tasks, theories of work motivation suggest that employer adjustments in performance criteria may be effective for older adults who have experienced a reorganization of motives and goals (Kanfer & Ackerman, 2004). For example, performance criteria that include mentorship, teaching, helping, and project management may better match the motives and values of older workers who are motivated to continue working (Kanfer & Ackerman, 2004).

Further, organizations could focus on fostering a sense of autonomy in their older workers and providing opportunities for employees to make decisions at work to satisfy motives for meaning and positive emotions. Autonomy is the degree to which your job provides freedom and discretion in how or when work is carried out (Hackman & Oldham, 1975; Karasek, 1979). Autonomy and autonomy support from leaders is related to experiencing happiness, satisfaction, and well-being at work (Fisher, 2010), as well as meaningfulness (Rosso et al., 2010). Experiencing autonomy at work has also been theoretically related to calling (Conway et al., 2015; Gazica & Spector, 2015). Autonomy may be particularly important for older workers, as research has also shown a positive relationship between age and desire for autonomy at work (Kooij et al., 2011; 2013).

5.3 Strengths, Limitations, and Future Directions

Though the present study has numerous strengths (e.g., temporal precedence, theoretically-guided mechanisms, large sample of an understudied population), there are also limitations to consider. First, while sampling older adult workers was an intentional choice, the generalizability of my findings to other populations is likely reduced. Further, SST makes predictions for motives and goal selection across the life course. Future work should consider incorporating additional samples (young adults, middle-aged adults) to compare associations between socioemotional motives and calling across age groups.

Additionally, SST and other lifespan developmental theories are concerned with *change* over the life course. The present study does not examine change in variables, and the two-week time span is short compared to the time spans for change implied by lifespan developmental theories (i.e., years or decades). Future work investigate might utilize longer periods of study, enabling examination of change in calling over time. Theory and research suggest calling may be a dynamic construct (e.g., Hall & Chandler, 2005; Hirschi et al., 2019; Praskova et al., 2014; 2015). Growth modeling approaches could, for example, incorporate socioemotional motives and goals as time-varying covariates of calling.

Emotional regulation goals did not significantly mediate relationships between socioemotional motives and calling. However, the measure used here was limited in scope to assessing knowledge and control of one's feelings. The broader SST literature makes reference to other emotional regulation goals, such as finding life meaning, gaining emotional intimacy, feeling socially embedded, maintaining one's self-concept, and experiencing more positive affect than negative (Carstensen, 1992; Carstensen et al., 1999). Emotional regulation goals may also encompass goals related to generativity (e.g., Lang & Carstensen, 2002; Penningroth & Scott, 2012). Future studies should consider the development of a comprehensive, multi-faceted measure of emotional regulation goals, or at least use multiple goal measures to better capture the full breadth of emotional regulation.

Additionally, it has historically been difficult to discern motives from goals (e.g., Talevich et al., 2017). In the SST literature itself, socioemotional motives and goals are often discussed interchangeably (Carstensen, 1995; 1998; 2003; Carstensen et al., 1999). Constructs like generativity, for example, are often viewed in terms of goals (e.g., Lang & Carstensen, 2002; Penningroth & Scott, 2012), but generativity has also been studied as a motive, or as behaviors (e.g., Doerwald et al., 2021). Future work might seek to disentangle socioemotional motives from goals. This could be accomplished through development of goals measures, as mentioned above, and motives measures, or by examining the relative weights of motives and goals to see if they account for unique variance in calling or other well-being outcomes.

5.4 Conclusion

With more adults living and working for longer, it is more important than ever to understand how callings are developed and maintained for older adult workers. The inability to experience a calling could hinder the well-being and functioning of workers who seek meaning, purpose, and connection in employment. I sought to understand how motives and goals relate to calling using the lifespan developmental lens of socioemotional selectivity theory. My findings suggest that motives for meaning and positive emotions are central to experiencing a calling in older adult workers. It is my hope that this work will enable older workers to experience longevity, meaning, and positivity in their careers, and to spur future efforts to understand and develop callings for all workers across the lifespan.

APPENDIX A

Survey Items

Brief Calling Scale (BCS)

Broadly speaking, a ‘‘calling’’ refers to a person’s belief that she or he is called upon (by the needs of society, by a person’s own inner potential, by God, by a Higher Power, etc.) to do a particular kind of work. The following questions assess the degree to which you see this concept as relevant to your own life and career. Please respond honestly, not according to what is socially desirable or what you feel you ‘‘ought’’ to think. Please indicate the extent to which each of the following statements currently describe you, using the following scale.

1 -Not at all true of me
2 -Mildly true of me
3 -Moderately true of me
4 -Mostly true of me
5 -Totally true of me

1. I have a calling to a particular kind of work.
2. I have a good understanding of my calling as it applies to my career.
3. I am trying to figure out my calling in my career.
4. I am searching for my calling as it applies to my career.

Scoring instructions (items listed should be summed):

BCS-Presence = 1, 2

BCS-Search = 3,4.

Need for Meaning Scale (Zhang et al., 2018)

Please take a moment to thank about what makes your life feel important to you. Please respond to the following statements as truthfully and accurately as you can. Please answer according to the scale below:

1- Absolutely Untrue
2- Mostly Untrue
3- Somewhat Untrue
4- Can’t Say True or False
5- Somewhat True
6- Mostly True
7- Absolutely True

1. I think a life without meaning is pointless

2. It is important for me to lead a meaningful life

3. I need to seek meaning in my life

4. I need to believe that my life is meaningful

5. One important mission for me is to understand my life’s meaning

6. I always want to make my life more meaningful

Positive Affect (adapted from Watson, 1988)

This scale consists of words that describe different feelings and emotions. Read each item, and then select the number on the scale below that corresponds to how much you ***value*** feeling this way.

1- Not at All
2- A Little
3- Moderately
4- Quite a Bit
5- Extremely

1. Interested

2. Excited

3. Strong

4. Enthusiastic

5. Proud

6. Alert

7. Inspired

8. Determined

9. Attentive

10. Active

Scoring: Add the scores for these items. Scores can range from 10 to 50, with higher scores indicating higher value.

Social Connection (Interpersonal Orientation Scale for Affiliation Motivation, Positive Stimulation subscale; Hill, 1987)

Please rate the following statements on how true or descriptive each statement is for you:

1 -Very untrue of me
2 -Mildly true of me
3 -Moderately true of me
4 -Mostly true of me
5 -Very true of me

1. I think being close to others, listening to them, and relating to them on a one-to-one level is one of my favorite and most satisfying pastimes.
2. Just being around others and finding out about them is one of the most interesting things I can think of doing
3. I feel like I have really accomplished something valuable when I am able to get close to someone
4. One of the most enjoyable things I can think of that I like to do is just watching people and seeing what they are like.
5. I would find it very satisfying to be able to form new friendships with whomever I liked
6. I seem to get satisfaction from being with others more than a lot of other people do
7. I think it would be satisfying if I could have very close friendships with quite a few people.
8. The main thing I like about being around other people is the warm glow I get from contact with them.
9. I think I get satisfaction out of contact with others more than most people realize.

Emotional Regulation Goals

The following is adapted from Lang & Carstensen, 2002:

Instructions to participant: Below, you will find descriptions of different goals that one can have and find important in life. Please read each of these goals carefully.

On a scale from 1 = Never to 5 = Always, please rate how **frequently** you focus on or select the following goals:

1 -Never
2 -Sometimes
3 -About half the time
4 -Most of the time
5 -Always

1. To be autonomous in my feelings
2. To know myself and my feelings very well
3. To have control over my feelings
4. To not depend on someone else's feelings

Occupational Future Time Perspective Scale (Zacher & Frese, 2009)

Read each item and answer the question: “How true is this of you?”
Select the appropriate number on the scale, where 1 means the statement is very untrue for you, and 7 means that the statement is very true for you.

1. Many opportunities await me in my occupational future
2. I expect that I will set many new goals in my occupational future
3. My occupational future is filled with possibilities
4. Most of my occupational life lies ahead of me
5. My occupational future seems infinite to me
6. As I get older, I begin to experience time in my occupational future as limited

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