

**“I Craft So That I Can Flow”:
A Comparative Study of Neuro Type to Explore
the Relationship Between Job Crafting and Flow and
the Mediating Role of Meaningful Work**

by

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ABSTRACT

Individuals with autism spectrum disorder (ASD) face significant challenges entering and remaining in the workforce. Those with ASD possess unique attributes such as attention to detail, willingness for repetitive tasks, reliability, and intense focus. To fully engage and include individuals with ASD, a deeper understanding of the cognitive style and talents of individuals with ASD is needed. This comparative study aimed to examine the mediating role of meaningful work in the relationship between job crafting dimensions and flow and whether there are differences in the assessed mediated model by Neuro Type (autistic and non-autistic employees). Mediation analyses revealed that meaningful work mediated the relationship between cognitive crafting and flow. However, meaningful work did not mediate this relationship for task crafting or relational crafting. In addition, the results indicated that there are no differences in the assessed model by Neuro Type. These findings are worthy as they could encourage employers to hire and develop individuals with ASD as there are no significant differences between Neuro Type in how motivated and concentrated they are when performing their work. Theoretical and practical implications for these findings are discussed, and recommendations for future research are included.

Keywords: autism spectrum disorder (ASD), job crafting, meaningful work, flow state, neurodiversity

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CHAPTER 1

INTRODUCTION

1.1 Background of ASD

Autism Spectrum Disorder (ASD) is a neurological and developmental condition characterized by significant social, communication, and behavioral challenges (American Psychiatric Association, 2013). ASD includes what used to be known as Asperger Syndrome and pervasive developmental disorders (PDD). It is crucial to understand that autism is categorized by a spectrum of similar disorders with a shared core of symptoms, varying by level of disability and a combination of symptoms (American Psychiatric Association, 2013). ASD is also associated with medical issues such as GI disorders, seizures, anxiety disorders, and sleep disturbances (American Psychiatric Association, 2013).

The diagnosis of ASD is on the rise (Parr & Hunter, 2014). Recent estimates suggest that approximately 1 in 54 (18.5 per 1,000) children have been diagnosed with ASD (Maenner, Shaw, & Baio, 2020). Autism seems to affect all ethnic and socioeconomic groups, while minority groups tend to be diagnosed later and less often (Durkin, Maenner, Meaney, et al., 2010; Mandell, Wiggins, Yeargin-Allsopp, et al., 2009). The cost of caring for those with ASD is staggering. A recent study found that the cost of caring for those with ASD reached an estimated \$268 billion in 2015 and is on track to reach \$461 billion by 2025 unless drastic measures are in place related to interventions and support (Leigh & Du, 2015).

The employment outlook is also bleak for those with ASD entering adulthood (Bowman, 2020). By 2027, an estimated 500,000 individuals will leave school-based autism support and enter the workforce (Roux, Shattuck, & Cooper, et al., 2013). The majority of adults with ASD remain unemployed, with as many as half of 25-year-olds having never held a

paying job (Shattuck, Narendorf, Cooper, et al., 2012). Despite these alarming facts, Volker and Lopata (2008) suggest that more and more people with ASD are receiving services that allow them to pursue opportunities to be productive members of society. Also, research indicates that those with ASD bring attributes “that can enable them to excel in the workplace” (Parr, Hunter, & Ligon, 2013, p. 609). Individuals with ASD are known for paying extra attention to detail, performing a task repeatedly, being trustworthy, and performing their tasks on time with high reliability (Hillier, Campbell, Mastriani, et al., 2007). They tend to immerse themselves and become fully engaged in a particular task, which can make them valuable to an organization (Parr, Hunter, & Ligon, 2013).

1.2 Flow

The behavior of total immersion in a particular task is a hallmark of a concept called Flow. Flow is characterized by total concentration in which people are entirely absorbed and thoroughly enjoy an activity (Csikszentmihalyi, 1997). During a state of flow, people are immersed in an activity so much that they are oblivious to their surroundings, and they enjoy the activity without regard to any physical pain (Csikszentmihalyi, 1990). Moments of flow occur when one is involved in an activity that one enjoys, and in which one is competent. Hence, it is a feeling that is so enjoyable and intrinsically motivating that one completely loses track of time (Bakker, 2008).

1.3 Meaningful Work

The concept of meaningful work has been studied extensively (Wrzesniewski, 2003; Colby, Sippola, & Phelps, 2001). People have a different motivation for work, such as having a career or earning a paycheck (Steger, Dik, & Duffy, 2012). Moreover, some people desire their work to be personal and extraordinary (Šverko, & Vidović, 1995; Steger, Dik, & Duffy, 2012).

No matter the motivation, “the innate need to live a purposeful life has significant implications for a person’s approach to work” (Whittington, Meskelis, Asare, & Beldona, 2017, p. 19).

Regardless of the meaning, those who find their work meaningful have skills and qualities that are aligned with and desirable to organizations (Steger, Dik, & Duffy, 2012).

People consider their work to be meaningful when they feel that their work is contributing positively to themselves and the world around them (Steger, Dik, & Duffy, 2012). Those who have found meaningful work feel that the work they are doing is significant and serving a larger purpose (Steger, Dik, & Duffy, 2012; Rosso, Dekas, & Wrzesniewski, 2010), and as a result are more satisfied, as well, as more committed to their work (Steger, Dik, & Duffy, 2012). People are more inclined to dedicate themselves to their work when they are confident that their work is making a difference (Ashforth & Humphrey, 1995). Also, they will commit more of their physical and cognitive abilities to help themselves, and their organization achieves greater success (Schaufeli et al., 2002), resulting in higher levels of satisfaction and commitment to their organization (Whittington et al., 2017). It is, therefore, conceivable that those who have found meaningful work feel that their work is serving a higher purpose, and they report higher job satisfaction (Steger, Dik, & Duffy, 2012; Sparks & Schenk, 2001). They consider their work to be highly important (Steger, Dik, & Duffy, 2012; Harpaz & Fu, 2002).

1.4 Job Crafting

Job crafting is self-motivated change behaviors through which employees align their jobs with their desired level of passion (Wrzesniewski & Dutton, 2001; Berg & Dutton, 2008).

Through job crafting, employees proactively change the physical, cognitive, or social features of their jobs. It is a process that workers use to shape their work practices to better align with their skills, interests, and values (Slemp & Vella-Brodrick, 2013). Thus, job crafting is a form of

proactive behavior driven by employees rather than implemented by management (Grant & Ashford, 2008). In their original development of the concept of job crafting, Wrzesniewski and Dutton (2001) presented three forms of job crafting. Task crafting refers to changes employees make in the number or type of activities, such as introducing new tasks to suit their skills or interests better. For example, a customer service representative skilled in IT is willing to help coworkers with their IT issues, or a history teacher who has a passion for music tries to integrate music into her teaching (Berg, Dutton, & Wrzesniewski, 2013). When employees decide to interact with selective coworkers with similar skills or interests, they are engaging in relational crafting. For example, a software engineer might forge a relationship with a marketing analyst, or a history teacher might collaborate with a music teacher (Berg, Dutton, & Wrzesniewski, 2013).

Distinct from the task and relational crafting is cognitive crafting, which involves how employees perceive their work and the influence of their organization on the community (Slemp & Vella-Brodrick, 2013). For example, “a ticket salesperson [might see] the job as an essential part of providing people with entertainment, not just processing orders” (Berg, Dutton, & Wrzesniewski, 2013, p. 82) or a history teacher might equate her act of teaching as a performance on a stage (Berg, Dutton, & Wrzesniewski, 2013). Accordingly, job crafting may take several forms. Employees may alter the number or content of tasks they have, or they may make changes to job-related relationships, for example, the amount and intensity of contact they have with colleagues or customers. Furthermore, the employees may change the way they think about aspects of their jobs to enhance or alter how they rationalize the meaning of their work (Wrzesniewski & Dutton, 2001).

Research studies show that individuals who craft their jobs tend to be more engaged and more inclined to carry out their work (Petrou et al., 2012; Tims et al., 2013b), perform better, thrive (Bakker et al., 2012; Leana et al., 2009; Tims et al., 2012), and report higher levels of well-being (Nielsen & Abildgaard, 2012; Slemp & Vella-Brodick, 2014; Tims et al., 2013).

Previous studies of job crafting and its relationship with the flow and meaningful work have focused on neurotypicals (i.e., people who do not have autism). Bakker and van Woerkom (2017) have argued that employees can experience flow using proactive individual strategies, including job crafting. Since job crafting allows employees to make changes to their jobs to make it more meaningful (Bakker & van Woerkom, 2017), employees may have the opportunity to enhance the person-job fit (Tims & Bakker, 2010), leading to the increased opportunity for flow and optimal performance.

1.5 Research Questions

This study will attempt to ascertain the perception of job crafting, meaningful work, and flow for those with autism and how it can differ from those without autism. To date, there is little, if any, research that compares this relationship between these two groups. Therefore, the research questions (RQs) in this study are:

RQ1: To what extent can job crafting lead to flow?

RQ2: To what extent is the relationship between job crafting and flow mediated by meaningful work?

RQ3: To what extent does the relationship between job crafting and flow mediated by meaningful work differ by Neuro Type (autism vs. non-autism)?

1.6 Summary

This research is significant because it will attempt to expand the present knowledge of job crafting's effects on flow. This study will also try to ascertain what role meaningful work

plays in the relationship between job crafting and flow. Furthermore, this research will bridge the gap between autistic versus non-autistic employees' perceptions regarding the role of job crafting and how it can predict flow. The results of this study will help employees identify the opportunities to make constructive changes to their jobs, which will help them achieve optimal performance and add meaning to their work. In addition, this research will highlight the positives of hiring those with autism.

CHAPTER 2

LITERATURE REVIEW

2.1 Autism Spectrum Disorder (ASD)

Autism Spectrum Disorder (ASD) is described as a neurological and developmental disorder characterized by significant social, communication, and behavioral challenges (American Psychiatric Association, 2013). ASD includes what used to be known as Asperger Syndrome and pervasive developmental disorders (PDD). It is crucial to understand that autism is categorized by a spectrum of similar disorders with a shared core of symptoms, varying by level of disability and a combination of symptoms. Each individual on the spectrum manifests unique strengths and difficulties. The ability to learn, think, and problem-solve can range from highly skilled to severely challenged. Also, some individuals with ASD may require significant assistance in their daily lives. In contrast, others may need less help and, in some cases, live entirely independently. In 2013, APA released the 5th edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), the standard guidelines for healthcare providers to diagnose mental and behavioral conditions, including autism. According to DSM-5, ASD impacts communication and social skills and sensitivity to sounds and light. Since autism is a spectrum condition, autistics are distinguished between low-functioning autism (LFA) and high-functioning autism (HFA) (American Psychiatric Association, 2013). ASD is also characterized by restricted, repetitive motor movements and restricted interests (Annabi, Sundaresan, & Zolyomi, 2017). Those with ASD face enormous obstacles when it comes to obtaining and retaining employment (Vogus & Taylor, 2018). This challenge leads to devastating long-term outcomes, even though they possess the required qualifications and skills to perform at the same level as those without ASD (Austin & Pisano, 2017).

Despite these challenges, those with ASD possess unique attributes highly desirable by organizations. These qualities include attention to detail, willingness for repetitive tasks, trustworthiness, reliability, timeliness, intense focus, and attention to detail (Parr & Hunter, 2014). Companies that have started inclusive hiring from this untapped market include Microsoft, JPMorgan Chase & Co., EY, and SAP (Annabi et al., 2019). Technology companies, in particular, see a significant benefit in harnessing the unique talents of those with ASD, such as attention to detail, high level of focus, comfort with doing repetitive tasks, pattern recognition, and ability to visualize problems (Austin, & Sonne, 2014; Morris, Begel, & Wiedermann, 2015). Previous studies of flow and its relationship with employee engagement and meaningful work have focused on neurotypicals (those not on the ASD) and not on those with ASD. This study will focus specifically on those with ASD to ascertain their perceptions of employee engagement, meaningful work, and job crafting and how they can differ from those without ASD.

2.2 State of Flow

The concept of flow was developed by Mihalyi Csikszentmihalyi from his early work on the effects of anxiety and boredom on task absorption (Csikszentmihalyi, 1990). In his research, he highlighted the state of optimal flow experience, which requires intense concentration and complete involvement such that the sense of time is completely lost, and the experience itself becomes the reward (Csikszentmihalyi, 1975). Some of the attributes that amplify the flow experience are one's sense of personal happiness, creativity, and total engagement in life (Carter, River, & Sachs, 2013). Such an experience nurtures a conscious state, resulting in optimal human potential (Csikszentmihalyi, 1990). Thus, flow is an optimal state of being that brings happiness and harmony within oneself (Csikszentmihalyi, 1990).

It is, therefore, conceivable that flow is such a positive experience that evokes creativity and learning and “fosters the engagement in challenging activities” (Engeser, 2012, p. 6). One of the dimensions of flow experience is complete attention on a particular task or activity, resulting in full concentration and total involvement (Csikszentmihalyi, 1975). Those who can maintain such a high level of concentration can enhance their ability to do so for a more extended period (Engeser, 2012). Thus, at the optimal level of flow experience, one is concentrated and fully engaged in the task at hand (Moneta, 2017). In addition to concentration, enjoyment and satisfaction are other dimensions experienced by those who have achieved the state of flow. However, they mostly manifest after the fact since one is entirely engaged in the task they are performing at that moment (Csikszentmihalyi, 1990).

2.3 Flow-Work Connection

The most common elements present in the flow research include total immersion or absorption in an activity, sheer pleasure, and intrinsic motivation (Bakker, 2008; Csikszentmihalyi, 1997; Larson & Richards, 1994). Those who experience a flow state indicate that their sense of time gets distorted since they are entirely engaged in the task they are performing (Bakker & van Woerkom, 2017). The activity itself becomes the reward since the flow experience provides the ultimate enjoyment and satisfaction that people continue to perform because of intrinsic motivation (Csikszentmihalyi, 1975). When in flow, individuals are highly motivated to complete the action to experience the inherent pleasure and satisfaction in the activity and ignore the pain and fatigue associated with the task (cf. Deci & Ryan 2000).

When the flow experience is applied to the work environment, the dimensions of flow are highly relevant to the short-term peak experience at work. For example, the dimension of absorption is characterized by complete concentration such that employees are completely

engaged in their work, so much so that they are oblivious to their surroundings, and time seems to pass by unnoticed (Csikszentmihalyi, 1990). Similarly, when employees who are highly engaged in a task seem to enjoy their work thoroughly, which makes them feel positive and happy about their work (Bakker, 2005). Finally, employees who are intrinsically motivated about their work continue to be engaged and derive the utmost pleasure and satisfaction from the task they are performing (Csikszentmihalyi, 1997). Therefore, in a state of flow, “performance is reported as automatic, and happening without deliberate effort” (Bakker & van Woerkom, 2017, p. 49).

2.4 Job Crafting

Job crafting is described as employees initiating changes to the physical, cognitive, or social aspects of their jobs to be more engaged and make their work meaningful (Slemp & Vella-Brodrick, 2013). Thus, it is conceivable that through job crafting, employees can proactively make changes to align their work with their interests and values physically, cognitively, or socially to increase engagement and increase their work meaningfulness. In a study, Tims, Derks, and Bakker (2016) found that job crafting influences employee motivation and Meaningfulness. It is argued that job crafting is particularly critical as a path to Meaningfulness in the contemporary work environment (Wrzesniewski, Berg, & Dutton, 2013).

2.4.1 Hypothesis 1

Individuals can create their own work-related flow experiences by using proactive individual strategies such as job crafting. Individual job redesign strategies that physically alter tasks (e.g., creating challenging demands, increasing structural job resources), relationships (e.g., increasing social job resources), and strategies that cognitively modify the perception of

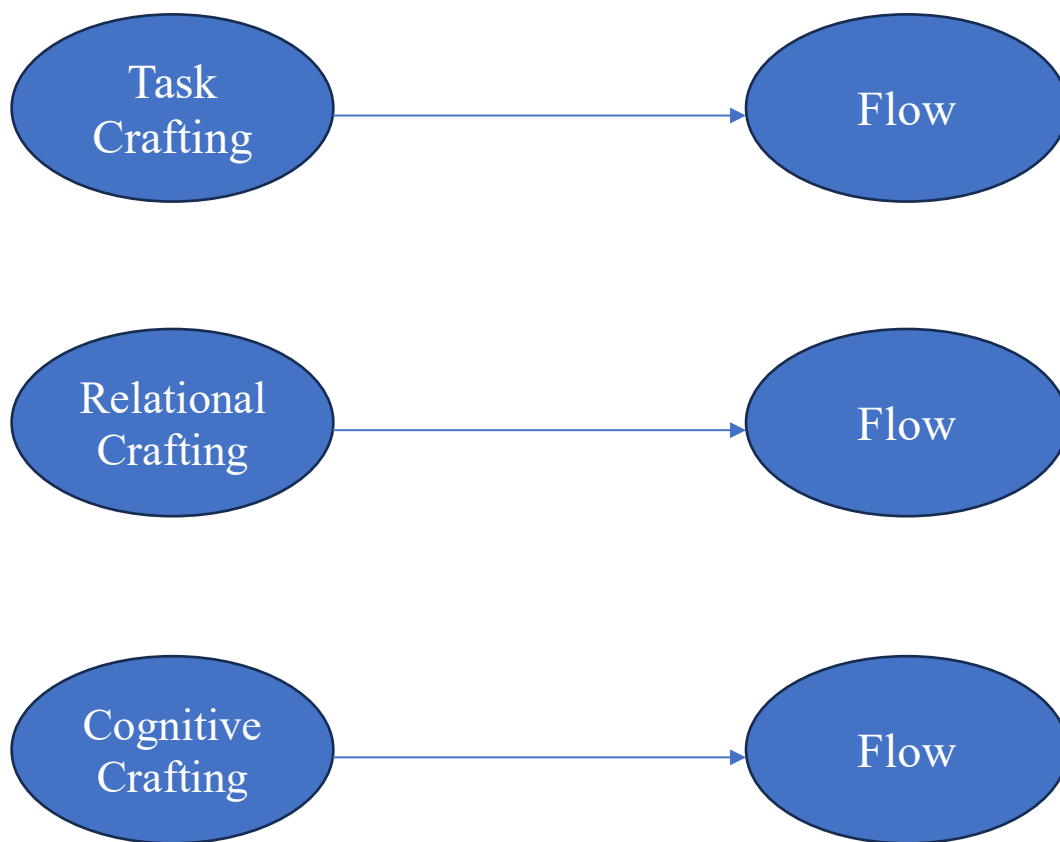
tasks and relationships are all strategies leading to flow at work. Therefore, I propose the following:

***H1a:** Task crafting is positively related to flow.*

***H1b:** Relational crafting is positively related to flow.*

***H1c:** Cognitive crafting is positively related to flow.*

Figure 2.1 Hypothesized Model



2.5 Flow and Meaningful Work

People must be completely involved in something that is personally meaningful for flow to occur (Csikszentmihalyi, 1999). “Meaningful work is not only important – it is also challenging, requiring constant learning and progress” (Pauken, 2008, p. 207). Challenging jobs

increase feelings of accomplishment upon completion (Kahn, 1990). Consequently, research suggests that individuals crave jobs that reasonably combine routine and novelty (Kahn, 1990). Perceptions of meaning have been linked to intrinsic motivation, which is an essential component of work-related flow. Hence, meaningful work can be characterized as “finding a purpose in work that is greater than the extrinsic outcomes of the work” (Arnold et al., 2007, p. 195). Additionally, the core job characteristics have been known to enhance intrinsic motivation because they create meaning in one’s work (Hackman & Oldham, 1980). Thus, the opportunity to derive meaning from one’s work is intrinsically motivating to employees (Steger, Dik, & Duffy, 2012; Arnold et al., 2007). Because the intrinsic motivation for one’s work is an essential element of the flow experience (Csikszentmihalyi, 1990), the perception of meaning is likely to be related to flow. Also, meaningful work, which is known to be intrinsically motivating, will drive employees towards higher levels of absorption of work, which is another primary component of work-related flow (Linsner, 2009).

2.5.1 Hypothesis 2

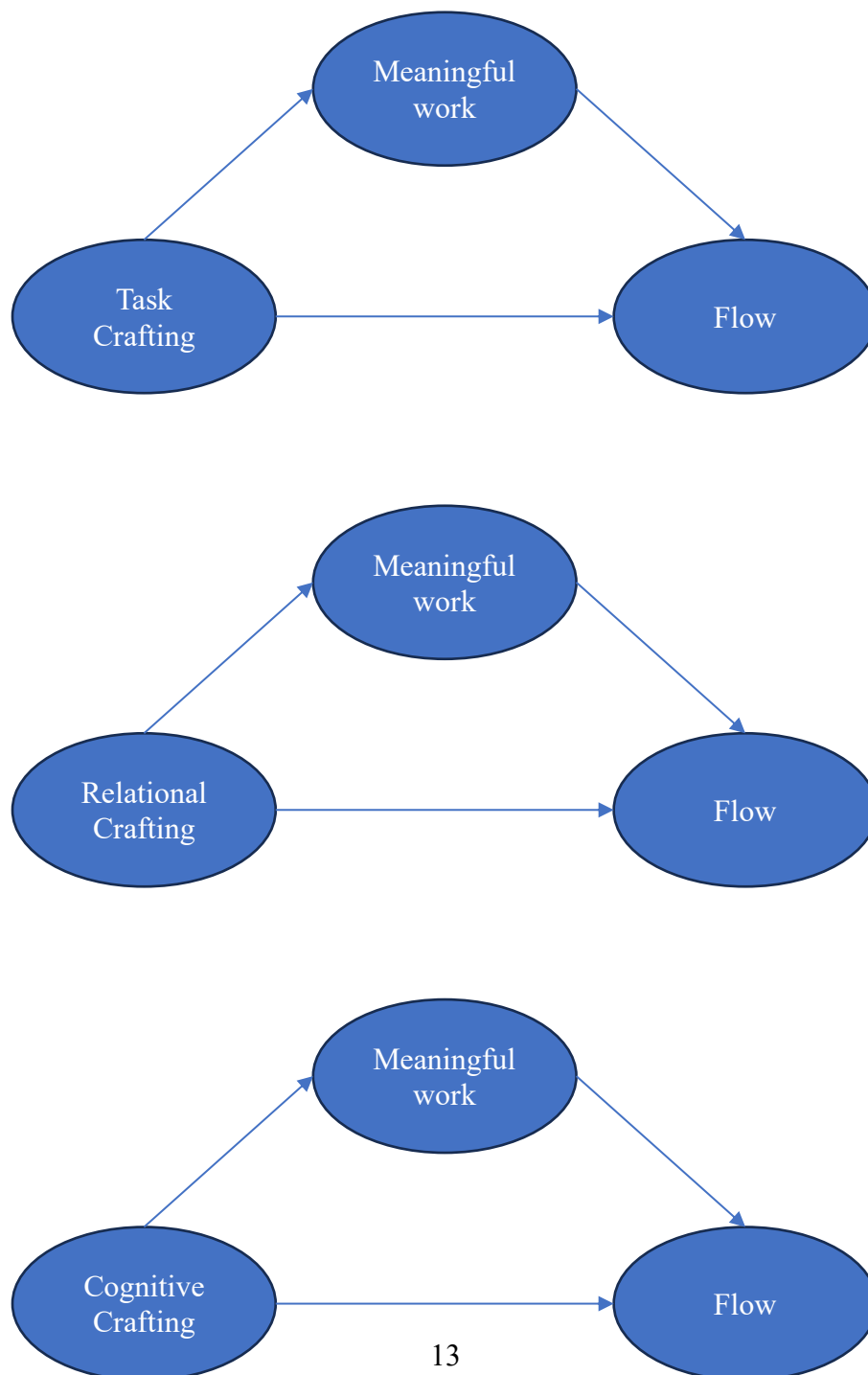
As a result, we might predict that meaningful work mediates the causal effect of job crafting on flow. Mediation is feasible because people can use job crafting to enhance their individual tasks to align them with their aspirations and motivations (Wrzesniewski & Dutton, 2001; Berg & Dutton, 2008). At the same time, employees can become more engaged and perform better by using varying levels of their selves, physically, cognitively, and emotionally (Kahn, 1990). It follows then that employees proactively making changes to their tasks become more involved in their work and, hence, become more engaged and make their work more meaningful to them. The following hypotheses will, therefore, be investigated in this research:

H2a: Meaningful work mediates the relationship between task crafting and flow.

H2b: Meaningful work mediates the relationship between relational crafting and flow.

H2c: Meaningful work mediates the relationship between cognitive crafting and flow.

Figure 2.2 Hypothesized Model



2.6 Neuro Type as a Moderator

In the mediation analysis to test hypothesis 2, we are interested in determining a hypothetical causal chain and how dimensions of job crafting (independent variable) affected meaningful work (mediator) and, in turn, meaningful work affected flow (dependent variable). In other words, we are interested to see whether meaningful work mediated the relationship between dimensions of job crafting and flow. To answer the third research question effectively, the third hypothesis put forth in this study proposes that Neuro Type plays a crucial moderating role in both the direct and indirect relationships between the various job crafting dimensions, meaningful work, and flow. Neuro Type, as it is referred to in this study, is essentially a term used to distinguish between two distinct groups of employees: those who are autistic and those who are not. By implementing a moderated mediation model, this study seeks to analyze whether or not there exist any noteworthy differences in the evaluated mediated model by Neuro Type.

2.6.1 Hypothesis 3

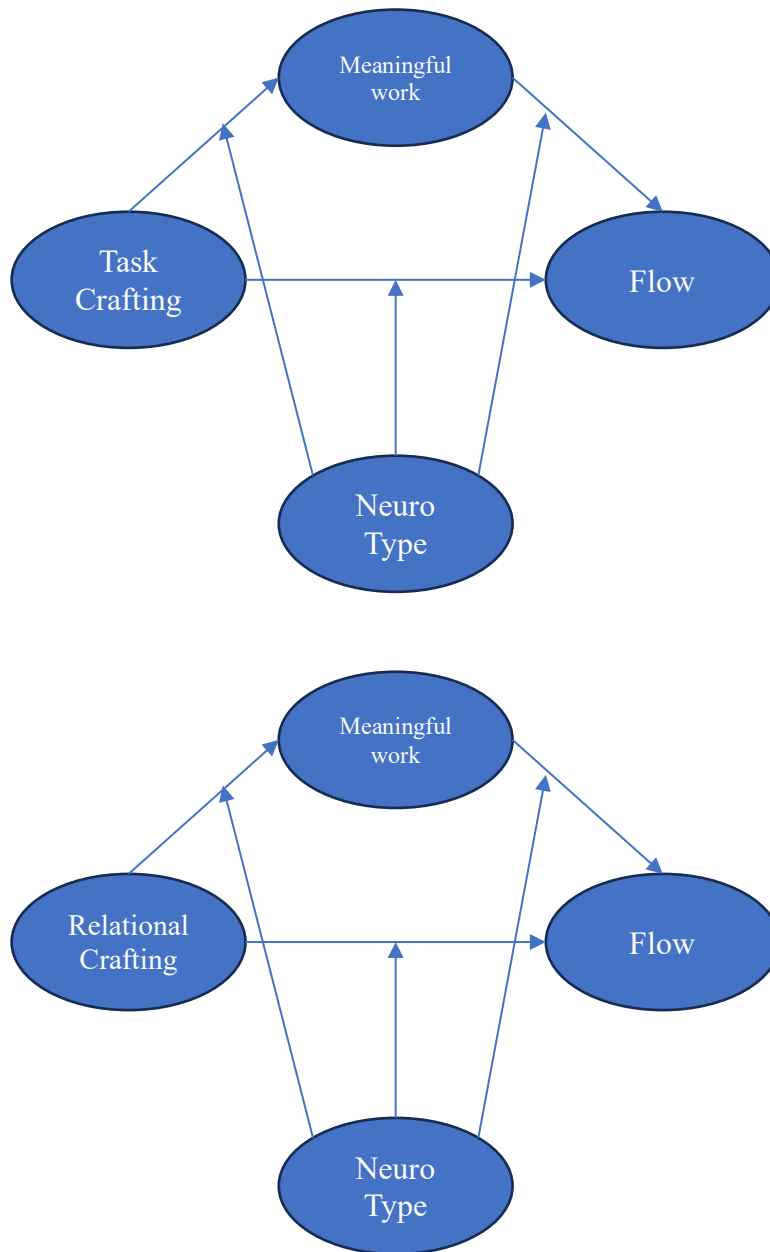
To establish moderated mediation, one or both of two distinct patterns must be present (as described by Hayes, 2013): namely, the path between the dimensions of job crafting and meaningful work must be moderated by Neuro Type, and/or the path between meaningful work and flow must also be moderated by Neuro Type. The following hypotheses will, therefore, be investigated in this research:

***H3a:** Neuro Type moderates the direct and indirect relationships between task crafting, meaningful work, and flow.*

***H3b:** Neuro Type moderates the direct and indirect relationships between relational crafting, meaningful work, and flow.*

***H3c:** Neuro Type moderates the direct and indirect relationships between cognitive crafting, meaningful work, and flow.*

Figure 2.3 Hypothesized Model



CHAPTER 3

METHODS, SAMPLE AND MEASURES

3.1 Introduction

This section describes the methodology of the study. It includes the following sections: the purpose of the study, the design of the study, a description of the population, the instrumentation of the survey, and the data collection method. The section concludes with a summary.

3.2 Purpose of the Study

The purpose of this study was to empirically assess the relationship between job crafting and flow at work for autistic and non-autistic employees. In addition, we wanted to examine if meaningful work mediated this relationship for these two groups.

3.3 Design of the Study

A quantitative research design was used for this study. The data was collected based on a cross-sectional survey research method. The online survey platform Qualtrics® was utilized to collect anonymous data.

3.4 Population

The targeted population for this survey was autistic and non-autistic individuals over the age of 18.

3.5 Measurement Instrumentation

Three measures were used to test the study's theoretical model:

3.5.1 Flow at work

Flow at work was assessed using the instrument developed by Bakker (2008). The Work-related Flow Inventory (WOLF) has three subscales: absorption (ABW; 4 items), work

enjoyment (WE; 4 items), and intrinsic work motivation (IWM; 5 items). All items are anchored on a 7-point Likert-type scale ranging from 1 (*never*) to 7 (*always*). The scale asks respondents to indicate how they experience their work. Absorption refers to total concentration and immersion at work. An example of an ABW subscale scale item is, “When I am working, I forget everything else around me.” Work enjoyment refers to feelings of happiness at work. An example of a WE subscale item is, “I do my work with a lot of enjoyment.” Intrinsic work motivation is characterized by intrinsic aspects of work. An example of an IWM subscale item is, “I would still do this work, even if I received less pay.” In Bakker’s (2008) work, the reported Cronbach’s alphas were: AB = .85; WE = .96 and IWM = .82 (Bakker, 2008, p. 405).

3.5.2 Job Crafting

The Job Crafting Questionnaire (JCQ) was developed by Slemp and Vella-Brodrick (2013). JCQ has three underlying dimensions: Task crafting (TC; 5 items), Cognitive crafting (CC; 5 items), and relational crafting (RC; 5 items). All items are anchored on a 6-point frequency rating scale ranging from 1 (*Hardly Ever*) to 7 (*Very Often*). The scale asks respondents to indicate the extent to which they engage in particular behavior at work. Task crafting refers to changes employees make in the number or type of activities, such as introducing new tasks to suit their skills or interests better. A sample question for TC is “Change the scope or types of tasks that you complete at work.” Cognitive crafting involves how employees perceive their work and influence their organization or community. A sample question for CC is, “Think about how your job gives your life purpose.” When employees decide to interact with selective coworkers with similar skills or interests, they are engaging in relational crafting. A sample question for RC is “Make friends with people at work who have similar skills or interests.” In their original work, the reported Cronbach’s alphas were: TC = .87; CC = .89

and $RC = .83$ (Slemp & Vella-Brodrick, 2013, p. 138). In the development of the scale, the three-factor model had a better fit to the data than the one-factor model (Slemp, & Vella-Brodrick, 2013).

3.5.3 Meaningful work

Meaningful work was measured using the 10-item Work and Meaning Inventory (WAMI) developed by Steger, Dik, and Duffy (2012). The WAMI consists of three subscales: positive meaning (PM; 4 items), meaning-making (MM; 3 items), and greater good motivations (GG; 3 items). All items were anchored on a five-point Likert scale ranging from 1 (*absolutely untrue*) to 5 (*absolutely true*). The PM subscale measures to what extent people find their work meaningful. A sample question for PM is, “I have found a meaningful career.” The MM subscale tries to assess the connection between meaningful work and meaningful life. A sample question for MM is, “My work helps me make sense of the world around me.” The GG subscale tries to assess if people find their work to be serving a higher purpose. A sample question for GG is, “The work I do serves a greater purpose.” The scale had an overall Cronbach’s alpha of .89.

3.6 Survey Design

The survey was designed and deployed using an online platform called Qualtrics®. The survey was comprised of a screening question to make sure all respondents were over the age of 18. In addition to the construct scale items, a bot check, an instructional manipulation check (IMC), and demographic scale items were included in the survey. 2015). All scale items required an answer to eliminate missing data (Wolf et al., 2013). An official University of Dallas banner helped provide survey authenticity (Fan & Yan, 2010). Qualtrics® provides a survey option to limit internet protocol (IP) addresses to one response (Goodman et al., 2013). Those who did not consent or did not meet the requirements were exited out of the survey.

The order of the questions in the survey helped reduce the priming effect (Podsakoff et al., 2003; Stone, Gueutal, & McIntosh, 1984). Priming occurs when the respondent creates attitudes or gets influenced by the order of the questions being asked (Moss & Lawrence, 1997). First, the items for the dependent variable, employee engagement, were presented. Then, the items for the second dependent variable, meaningful work, were presented. Next, the respondent was presented with an IMC to ensure that respondent is paying attention to the instructions before selecting the answer choices. Next, the items for the mediator, job crafting, were listed. Then, the items for the independent variable, the work-related flow, were presented. Lastly, the respondent answered questions about age, gender, and ethnicity. Table 3.1 depicts the order of instruments for the survey.

Table 3.1

Survey Instrument Order

Order Number	Instrument
1	Consent
2	BOT Check
3	Screening question
4	Dependent variable: WAMI
5	IMC
6	Mediator: JCQ
7	Independent variable: WOLF
8	Demographics

Note: IMC = instructional manipulation check.

3.7 Data Collection

Before the data collection process, Institutional Review Board (IRB) approval was obtained from the University of Dallas. Participants for autistic employees were recruited using two methods. First, a link to the survey was posted on several relevant autism support groups on

LinkedIn, such as Autism Awareness, Autism Employment Alliance, and The NeuroDiversity GiFTS. Second, we approached companies that exclusively hire employees who identify as autistic. One of the companies was Aspiritech, a Quality Assurance (QA) testing company based in Illinois. The other was Blue Star Recycle in Colorado, specializing in electronics recycling. Overall, 151 autistic respondents started the survey. Participants for non-autistic employees were recruited by posting a link to the survey to this researcher's LinkedIn and other social media. Overall, 538 non-autistic respondents started the survey.

3.8 Summary

This section presented the design and method of the study. The section covered the purpose of the study, the design of the study, a description of the population and the sample along with sample representativeness, the instrumentation of the survey, the survey design, and the data collection procedures.

CHAPTER 4

RESULTS

4.1 Introduction

The purpose of this chapter is to provide the results of our analyses. The first section of this chapter covers the data sample, cleaning procedures, and final parameters of the sample. The regression assumptions' test results are presented in the second section, followed by the regression results in section three. The last section of this chapter discusses the hypotheses testing results before concluding with a summary.

4.2 Sample

As discussed in Chapter 3, participants were recruited in two separate groups: autistic and non-autistic (or Neuro Type).

4.3 Data Cleaning

The complete data file was retrieved from Qualtrics as a CSV (Comma-Separated Values) file. The IP addresses of all participants were removed before performing data clean-up to maintain the anonymity of the participants. Data cleaning was conducted in two phases: a) completion and compliance and b) reliability and accuracy.

The purpose of the first phase of data clean-up was to remove responses that were incomplete or non-compliant with the sample requirements. This included respondents who did not consent to move forward with the survey, respondents who failed the bot check, incomplete responses, etc.

The focus of the second phase of data clean-up was to assure the reliability and validity of responses. To achieve this goal, respondents who failed the instructional manipulation check (IMC) and attention checks were removed. One of the survey questions was negatively worded

to detect straight-lining, where respondents would select the same responses for all items of the respective scale, which shows a lack of engagement in completing the survey (Cole et al., 2012). Such responses were also removed from the sample. Respondents who completed the survey in less than 5 minutes or took more than an hour were considered outliers and were removed. After the data clean-up, the final sample size was 96 for autistics and 319 for non-autistics. Finally, 96 responses were randomly selected from the final non-autistic sample to match the number of clean responses from the autistic population.

4.3.1 Characteristics of the Samples

The final autistic data set included 34.4% males ($n = 33$), 43.8% females ($n = 42$), and 21.8% respondents identified as “Other” ($n = 21$). Almost 14 percent (13.5%) of the autistic respondents were between the ages of 18 and 24 ($n = 13$), 82.3% were between the ages of 25 and 54 ($n = 79$), and 4.2% were above the age of 55 ($n = 4$). The racial composition of the autistic respondents was as follows: 83.3% Caucasian or white/non-Hispanic ($n = 80$), 4.2% Asian or Pacific Islander ($n = 4$), 3.1% African American or Black ($n = 3$), 3.1% Hispanic ($n = 3$), and 6.3% other ethnicities ($n = 6$).

The final non-autistic data set included 47.9% males ($n = 46$) and 52.1% females ($n = 50$). Almost 14 percent (13.5%) of the non-autistic respondents were between the ages of 18 and 24 ($n = 13$), 69.8% were between the ages of 25 and 54 ($n = 67$), and 16.7% were above the age of 55 ($n = 16$). The racial composition of the non-autistic respondents was as follows: 57.3% Caucasian or white/non-Hispanic ($n = 55$), 28.1% Asian or Pacific Islander ($n = 27$), 6.3% African American or black ($n = 6$), 2.1% Hispanic ($n = 2$), and 6.3% other ethnicities ($n = 6$).

Table 4.1*Sample characteristics summary*

Description	Autistic Count	Percentage	Non- autistic Count	Percentage
<i>Gender</i>				
Male	33	34.4%	46	47.9%
Female	42	43.8%	50	52.1%
Other	21	21.8%	0	0.0%
<i>Age</i>				
18 to 24	13	13.5%	13	13.5%
25 to 54	79	82.3%	67	69.8%
55 and up	4	4.2%	16	16.7%
<i>Race</i>				
African American or Black	3	3.1%	6	6.3%
Asian or Pacific Islander	4	4.2%	27	28.1%
Caucasian or White (non-Hispanic)	80	83.3%	55	57.3%
Hispanic	3	3.1%	2	2.1%
Other	6	6.3%	6	6.3%

Note: Due to rounding, percentages presented in this table may not precisely reflect the absolute figures.

As illustrated in Table 4.1, there were differences in the gender, age, and race between our autistic and non-autistic samples. In our autistic sample, a relatively large percentage identified as “Other” with regard to gender. With regard to age, our non-autistic group had a few more people in the 55+ category, while the autistic group had a few more in the 25-54 age bracket. Lastly, we can see that there were very few African American or Hispanic respondents in either sample, while there were more Caucasians in the autistic group and more Asians in the non-autistic group.

4.3.2 Latent variables

As discussed in Chapter 3, the independent variable, job crafting, was measured by fifteen six-point Likert scale items from Slemp and Vella-Brodrick’s (2013) Job Crafting Questionnaire (JCQ) (task crafting: 5 items, cognitive crafting: 5 items, and relational crafting: 5

items). The mediator, meaningful work, was measured by ten, five-point Likert scale items from Steger, Dik, and Duffy's (2012) Work and Meaning Inventory (WAMI) (positive meaning: 4 items, meaning making through work: 3 items, greater good motivations: 3 items). The dependent variable, flow, was measured by thirteen, seven-point Likert scale items from Bakker's (2008) Work-related flow inventory (WOLF) (absorption: 4 items, work enjoyment: 4 items, intrinsic work motivation: 5 items). Table 4.2 presents the descriptive statistics for this study's independent, mediating, and dependent variables.

Table 4.2

Descriptive statistics – unstandardized

Variable	# of items	Mean	SD	Autistic		Mean	SD	Non-autistic	
				Skewness ¹	Kurtosis ²			Skewness ³	Kurtosis ⁴
Flow	13	4.342	1.165	-.304	-.446	4.220	1.224	-.161	-.763
Task Crafting	5	4.135	1.075	0.061	-0.938	4.208	0.928	-0.210	-0.367
Cognitive Crafting	5	4.102	1.258	-0.430	-0.577	4.106	1.103	-0.467	0.167
Relational Crafting	5	2.888	1.200	0.396	-0.500	3.900	1.145	-0.036	-0.717
Meaningful Work	10	3.691	1.022	-.806	.046	3.698	.958	-.587	-.342

SD: Standard Deviation; N = 96; 1: Std. Error = .246; 2: Std. Error = .488; 3: Std. Error = .246; 4: Std. Error = .488

4.4 Pre-Regression Testing

The primary method of analysis for this study was regression, and as such, it was necessary to test the data to ensure that the regression assumptions were satisfied. The assumptions tested were normality, linearity, independence of error, and homogeneity. We also checked for multicollinearity, reliability, construct validity, Common Method Variance (CMV), and outliers (Field, 2018; Hayes, 2018).

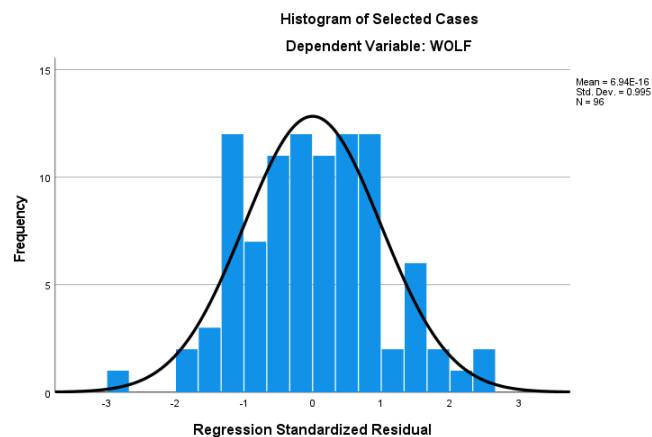
4.4.1 Normality

Normality is “the assumption that each variable and all linear combinations of the variables are normally distributed” (Tabachnick & Fidell, 2013. P. 78). Figure 4.1 illustrates the histogram chart for the dependent variables. Data for the dependent variable appears to have the features of a normal distribution.

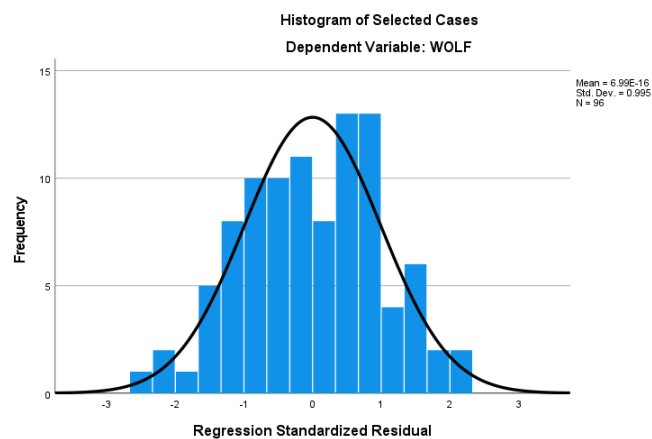
Figure 4.1

Histogram –

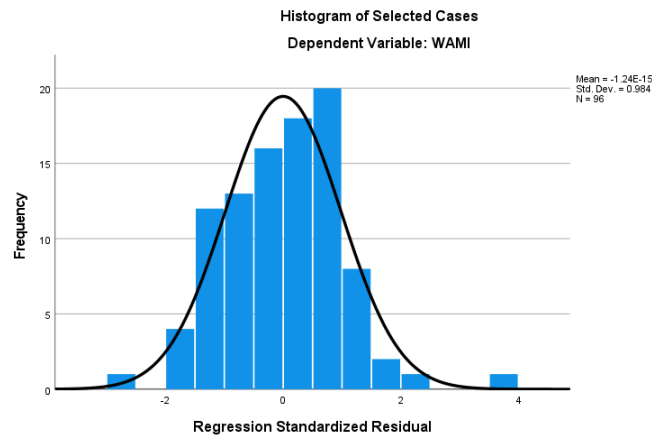
Autistic – Flow



Non-autistic – Flow



Autistic – Meaningful Work



Non-autistic – Meaningful Work

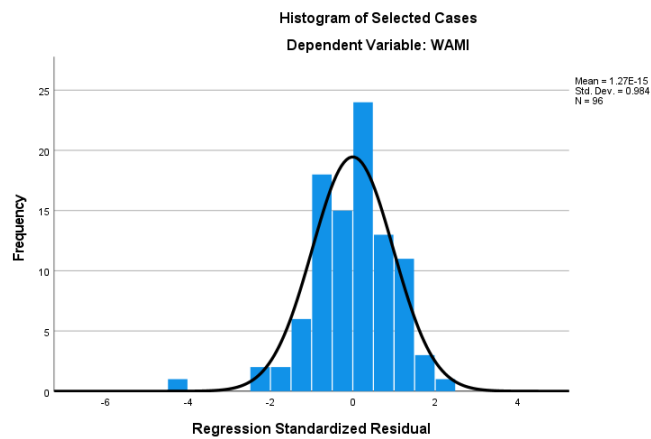


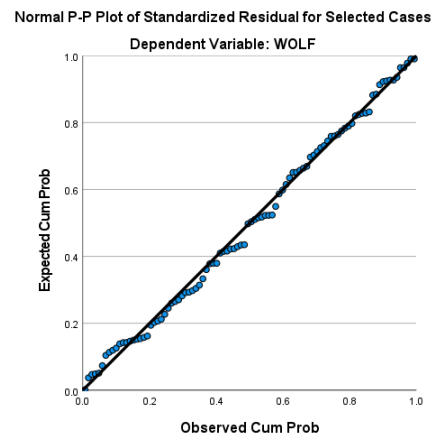
Table 4.2 presents the skewness and kurtosis of all variables. All variables have negative skewness except task crafting and relational crafting for the autistic sample. All variables have negative kurtosis except meaningful work for the non-autistic sample. All scores of skewness and kurtosis are between the cutoff of -1.96 and +1.96, which implies that the data is normally distributed for all variables (Field, 2013).

Another method to assess normality is by using a P-Plot for expected and actual residuals. The data appears to be normally distributed, following a 45-degree line, see Figure 4.2 below (Field, 2018).

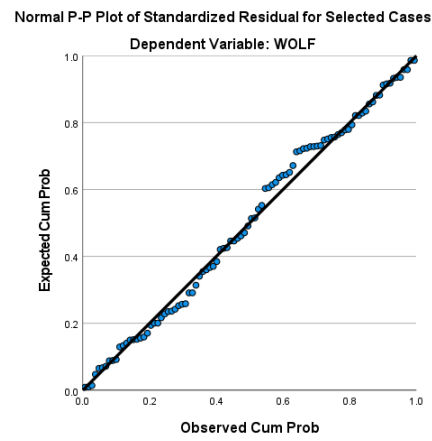
Figure 4.2

P-Plot

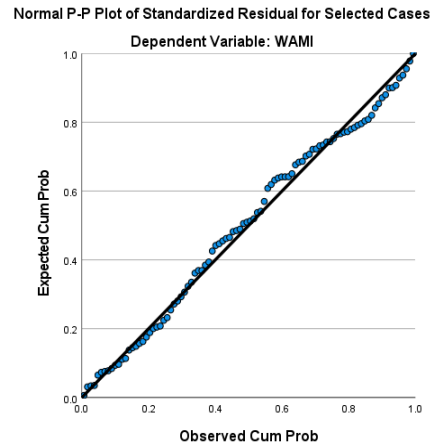
Autistic – Flow



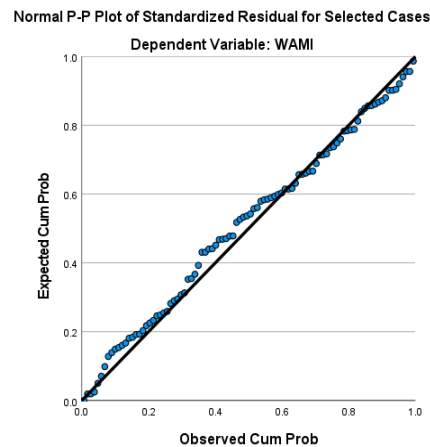
Non-autistic – Flow



Autistic – Meaningful Work



Non-autistic – Meaningful Work



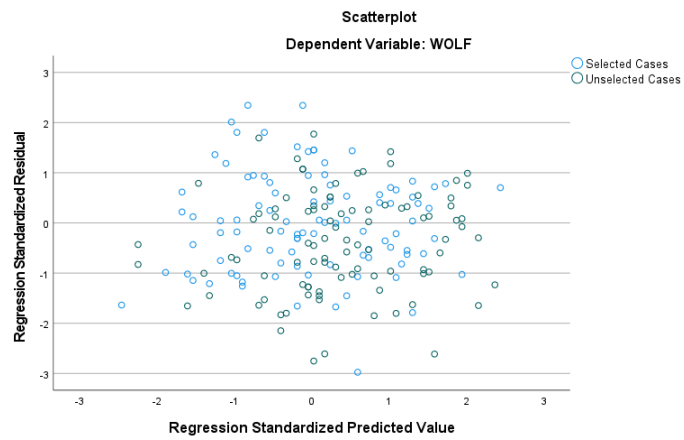
4.4.2 Homoscedasticity

Homoscedasticity is the assumption that the residuals at each level of the predictor variables have similar variance (Field, 2018). Figure 4.3 illustrates the scatterplot graph for the dependent variable using standardized predicted values and standardized residuals. The amount of error (distance between the cases represented by dots on the scatterplot) and the fit line appear to be consistent throughout the chart, and thus, the condition of homoscedasticity is met. Outliers in the data are discussed later in this chapter.

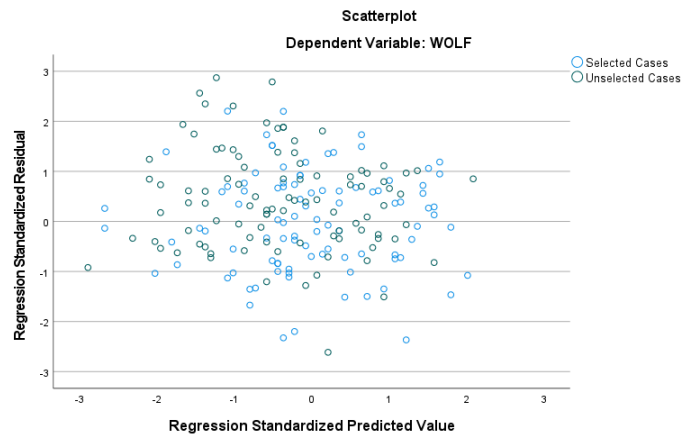
Figure 4.3

Scatterplot

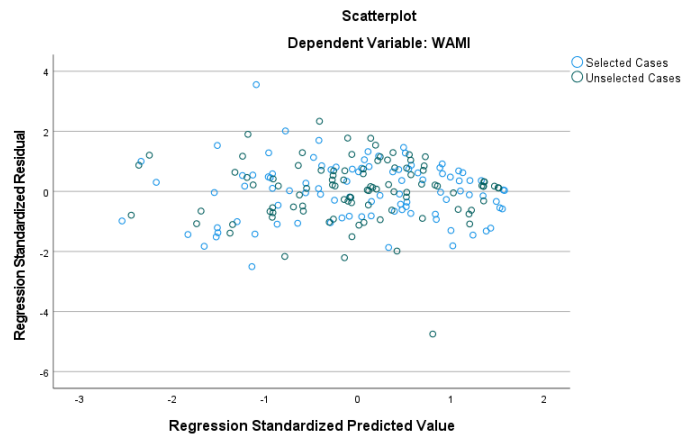
Autistic – Flow



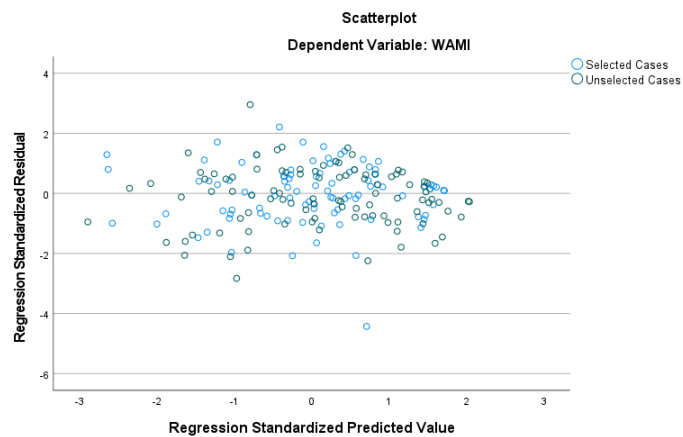
Non-autistic – Flow



Autistic – Meaningful Work



Non-autistic – Meaningful Work



4.4.3 Independence

When the normality assumption is met, the residuals of analysis are also normally distributed and independent (Tabachnick & Fidell, 2013). As such, the “independence of error term” condition is met by virtue of normality. Furthermore, a Durbin-Watson score was calculated in SPSS to test for serial correlation between errors. Table 4.3 presents the scores for the Durbin-Watson tests, indicating there are no error correlations (Maxwell & David, 1995).

Table 4.3*Durbin-Watson*

Variable	Durbin-Watson	
	Autistic	Non-autistic
Flow	1.769	1.861
Meaningful work	2.098	1.752

4.4.4 Linearity

Linearity is expected to occur in multiple regression between independent variables and the mean of the dependent variable. The assumption of linearity is satisfied by evidence of normality and homoscedasticity (Field, 2018).

4.4.5 Multicollinearity

The Independence of observations was tested by collecting collinearity diagnostics from the regression analysis. Multicollinearity might exist if the tolerance value is less than .10 and the Variance Inflation Factor (VIF) value is greater than 10 (Field, 2017). Collinearity tolerance in this study was greater than .10, and the VIF was below 10 for all independent variables, as illustrated in Table 4.4 (Field, 2018; Hair et al., 2018).

Table 4.4*Multicollinearity*

Independent variable	Autistic		Non-autistic	
	Tolerance	VIF	Tolerance	VIF
Task Crafting	.802	1.246	.405	2.467
Cognitive Crafting	.642	1.557	.575	1.740
Relational Crafting	.645	1.552	.433	2.308

4.4.6 Reliability

Reliability measures the degree to which scores in a particular sample are precise (Kline, 2016). Scale reliability was assessed using calculating Cronbach's alpha for each construct. The widely acceptable threshold of Cronbach's alpha is .70 and above. However, a score of .60 and above is also acceptable for internal reliability (Field, 2018; Hair et al., 2018; Wilson & Joye, 2017; Ursachi et al., 2015). As illustrated in Table 4.5, all Cronbach's alphas herein were above .70.

Table 4.5

Scale reliability

Variable	# of items	Cronbach's alpha	
		Autistic	Non-autistic
Flow	13	.874	.890
Task Crafting	5	.825	.826
Cognitive Crafting	5	.870	.846
Relational Crafting	5	.797	.823
Meaningful Work	10	.876	.878

4.4.7 Construct validity

Validity refers to the fidelity of the scale used and the extent to which items in a scale measure the information they are intended to measure. This study assessed two types of construct validity: convergent validity and discriminant validity.

4.4.7.1 Convergent and Discriminant validity

I analyzed the data through an exploratory factor analysis with Varimax rotation. The Kaiser-Meyer-Olkin (KMO) statistic is a sample adequacy measure that varies between 0 and 1. A value of 0 denotes diffusion in the correlations, rendering an inappropriate factor analysis

(Field, 2005). Mediocre values range between 0.5 and 0.7, while good values range from 0.7 and 0.8. and excellent values range between 0.8 and 0.9. Superior values are at or above 0.9. The KMO statistics for this data analysis were .892 for the autistic sample and .912 for the non-autistic sample. This range highlights a good factor analysis that is appropriate for these data.

Another important statistic related to the factor analysis for this study was Bartlett's Test of Sphericity. In a factor analysis, this test of sphericity is significant because it describes the correlations in the data. According to Stevens (2002), the correlations must have an alpha level significance of .05 to be appropriate for factor analysis. The significance level from this test for this data was $<.001$ for both groups. This finding indicated there was a significant level of correlation in the data, confirming the appropriateness of the factor analysis.

The other part of the exploratory factor analysis consisted of a principal components analysis with a Varimax rotation. For the autistic sample, seven factors were extracted with an eigenvalue of 1.00 or greater, accounting for 73.3% of the variance. The first factor explained 40.8% of the variance. The second factor explained 10.7% of the variance. The third factor explained 7.5% of the variance. The fourth factor explained 4.7% of the variance. The fifth factor explained 4.0% of the variance. The sixth factor explained 2.8% of the variance. The seventh factor explained 2.7% of the variance (See Table 4.6).

Table 4.6

Percentage of Variance Explained by Factors in the Seven-Factor Analysis for Autistic Sample (n=96)

Factor	Eigenvalues	Percentage of Variance	Cumulative Variance
1	15.486	40.753	40.753
2	4.073	10.719	51.472
3	2.859	7.524	58.996
4	1.800	4.737	63.733
5	1.510	3.974	67.708
6	1.076	2.831	70.539
7	1.037	2.728	73.268

For the non-autistic sample, six factors were extracted with an eigenvalue of 1.00 or greater, accounting for 73.3% of the variance. The first factor explained 40.8% of the variance. The second factor explained 10.7% of the variance. The third factor explained 7.5% of the variance. The fourth factor explained 4.7% of the variance. The fifth factor explained 4.0% of the variance. The sixth factor explained 2.8% of the variance. The seventh factor explained 2.7% of the variance (See Table 4.7).

Table 4.7

Percentage of Variance Explained by Factors in the Six-Factor Analysis for Non-autistic Sample (n=96)

Factor	Eigenvalues	Percentage of Variance	Cumulative Variance
1	16.928	44.546	44.546
2	3.307	8.702	53.249
3	2.897	7.623	60.872
4	1.366	3.594	64.466
5	1.289	3.393	67.859
6	1.035	2.724	70.583

The explanatory analysis also showed factor loadings for the items. These loadings can be viewed in Table 4.8 for the autistic sample and in Table 4.9 for the non-autistic sample.

Table 4.8*Item loadings for autistic sample (n=96)*

Item	Factor						
	1	2	3	4	5	6	7
CC1	0.78	0.21	0.16	0.03	0.2	0.18	0.02
CC2	0.55	-0.04	-0.02	-0.04	0.64	0.21	0.19
CC3	0.67	0.2	-0.07	0.06	0.35	0.28	0.22
CC4	0.74	0.04	0.35	0.13	0.2	0.22	-0.07
CC5	0.38	0.12	0.05	0.19	0.21	0.68	-0.1
RC1	0.27	-0.19	0.33	0.13	0.67	0.15	0.1
RC2	0.23	-0.32	0.35	0.08	0.57	0.11	-0.21
RC3	0.19	-0.06	0.13	0.25	0.67	-0.12	-0.4
RC4	0.14	0.27	-0.05	0.24	0.72	-0.04	0.12
RC5	0.23	-0.27	0.25	0.45	0.42	0.08	0.13
TC1	0.21	0.33	0.26	0.69	0.16	0.15	0.11
TC2	0.06	0.1	0.01	0.74	0.21	0.11	-0.17
TC3	-0.02	0.25	0.12	0.84	0.1	0.12	0.09
TC4	0.28	0.47	0.13	0.61	0.04	-0.05	0.02
TC5	0.02	0.34	0.21	0.23	-0.04	0.65	-0.11
GG1	0.42	0.14	0.14	0.04	0.04	-0.2	0.7
GG2	0.77	0.08	0.26	0.11	0.24	-0.06	0.24
GG3	0.75	0.2	0.2	0.1	0.27	-0.1	0.21
MM1	0.81	0.18	0.22	-0.14	0.1	0.07	0.06
MM2	0.81	0.17	0.24	0.01	-0.03	0.09	-0.09
MM3	0.78	0.15	0.19	0.13	0.06	0.18	-0.12
PM1	0.79	0.17	0.27	0.15	0.05	-0.21	0.06
PM2	0.78	0.22	0.15	0.12	0.22	-0.04	-0.01
PM3	0.77	0.12	0.12	0.21	0.15	-0.02	0.15
PM4	0.79	0.17	0.33	0.19	0.03	0.08	-0.04
ABW1	0.17	0.8	0.06	0.12	0.04	0.13	0.09
ABW2	0.23	0.72	0.2	0.18	-0.04	0.26	-0.05
ABW3	0.09	0.79	0.11	0.11	-0.09	0.1	0.21
ABW4	0.28	0.67	0.44	0.24	0.02	0.05	0.04
IWM1	0.37	0.46	0.44	0	-0.04	-0.43	-0.26
IWM2	0.25	0.57	0.27	0.32	-0.13	0.07	-0.14
IWM3	0.32	0.47	0.68	0.03	0.13	0.14	0.04
IWM4	0.1	0.34	0.51	0.01	0.16	0.19	-0.2

IWM5	0.28	0.67	0.28	0.12	0.01	-0.19	-0.05
WE1	0.49	0.14	0.66	0.12	0.12	0.02	0.25
WE2	0.36	0.34	0.73	0.22	0.1	0.01	0.1
WE3	0.44	0.23	0.75	0.17	0.06	-0.05	0.1
WE4	0.42	0.14	0.68	0.19	0.15	0.07	-0.02

Table 4.9*Item loadings for non-autistic sample (n=96)*

Item	Factor					
	1	2	3	4	5	6
CC1	0.627	0.239	0.088	0.169	0.123	0.412
CC2	0.44	0.183	0.485	0.237	-0.299	0.329
CC3	0.543	0.171	0.5	0.049	-0.081	0.27
CC4	0.543	0.173	0.363	0.191	0.016	0.272
CC5	0.259	0.167	0.241	-0.064	0.156	0.804
RC1	0.085	0.095	0.807	0.127	-0.036	0.087
RC2	0.205	0.124	0.772	0.003	0.243	0.013
RC3	0.079	0.256	0.747	0.05	0.103	-0.06
RC4	0.139	0.117	0.258	0.825	-0.13	-0.142
RC5	0.239	-0.006	0.791	0.178	0.032	0.034
TC1	0.22	0.222	0.613	0.405	0.03	0.245
TC2	0.03	0.109	0.394	0.487	0.444	0.098
TC3	0.248	0.179	0.6	0.199	0.144	0.319
TC4	0.15	0.361	0.491	0.449	0.091	0.202
TC5	0.239	0.168	0.239	0.501	0.24	0.097
GG1	0.708	0.204	0.103	0.293	0.022	0.068
GG2	0.857	0.159	0.197	0.033	0.008	0.017
GG3	0.819	0.217	0.108	0.168	-0.046	-0.072
MM1	0.713	0.216	0.027	0.084	0.128	0.115
MM2	0.718	0.142	0.255	0.177	0.172	0.127
MM3	0.692	0.143	0.35	0.04	0.371	-0.049
PM1	0.785	0.316	0.17	-0.096	0.079	0.076
PM2	0.757	0.337	0.081	0.118	0.084	0.135
PM3	0.683	0.353	0.188	-0.038	-0.03	0.038
PM4	0.801	0.375	0.139	0.025	0.091	0.174
ABW1	0.167	0.512	0.127	0.041	0.64	0.213
ABW2	0.134	0.751	0.113	0.146	0.391	-0.025
ABW3	0.128	0.523	0.148	0.018	0.687	0.061
ABW4	0.226	0.745	0.237	0.138	0.268	0.014
IWM1	0.288	0.659	-0.12	0.292	0.14	-0.061
IWM2	0.267	0.594	0.018	0.102	0.268	0.141
IWM3	0.438	0.738	0.209	-0.025	0.01	0.082
IWM4	0.062	0.603	0.337	0.013	0.236	-0.18
IWM5	0.504	0.634	0.038	0.178	-0.082	0.138

WE1	0.458	0.675	0.223	0.069	-0.048	0.286
WE2	0.455	0.745	0.23	0.048	-0.084	0.155
WE3	0.428	0.706	0.305	0.089	-0.076	0.258
WE4	0.371	0.681	0.211	0.08	0.082	0.281

While our factor loadings slightly differed from the original researchers' work in each case, we decided to use the original scales given their proven validity.

4.4.8 Common Method Variance (CMV)

Common Method Variance (CMV) describes the measurement error that is compounded by the sociability of respondents who want to provide positive answers (Chang et al., 2010). CMV was tested in this study using Harman's Single Factor test. The percentage of sum of squares loading variance that were autistic = 40.753; non-autistic = 44.546; combined = 41.776, which are below the threshold of 50% (Podsakoff et al., 2003; Podsakoff et al., 2012).

4.4.9 Outliers

To test for influential outliers, Cook's distance was calculated. As illustrated in Table 4.10, the Cook's distance for each variable is below the threshold of 1.0 (Hair, 2018).

Table 4.10

Cook's Distance

Variable	Cook's Distance	
	Autistic	Non-autistic
Flow	.115	.077
Meaningful Work	.201	.451

4.5 Results

Means, standard deviations, and correlations for the variables are presented in Table 4.11.

The results showed that all job crafting dimensions correlated positively with the flow and meaningful work. In addition, Neuro Type is negatively correlated with relational crafting.

Table 4.11

Descriptive statistics and correlations between variables.

	M	SD	1	2	3	4	5	6
1. Meaningful Work	3.694	.988						
2. Flow	4.281	1.193	.675**					
3. Task Crafting	4.172	1.003	.429**	.579**				
4. Relational Crafting	3.394	1.275	.402**	.301**	.515**			
5. Cognitive Crafting	4.104	1.180	.778**	.550**	.493**	.530**		
6. Neuro Type			-.004	.051	-.036	-.398**	-.002	

Note: N = 192

*** Correlation is significant at the .01 level*

4.6 Regression

To test H1a, H1b, and H1c and to examine mediation hypotheses (H2a, H2b, and H2c), a four-step procedure to set up the mediation effect was conducted (Baron & Kenny, 1986), which asserts (a) a significant association between dimensions of job crafting and flow; (b) a significant association between dimensions of job crafting and meaningful work; (c) a significant association between meaningful work and flow after controlling for dimensions of job crafting; (d) a significant coefficient for the indirect path between dimensions of job crafting and flow through meaningful work. The bias-corrected percentile bootstrap approach determines whether the last condition is stratified. The mediation model was analyzed by Hayes's (2013) PROCESS macro (Model 4), which is a macro for IBM SPSS. To examine the moderated mediation hypotheses (H3a, H3b, and H3c), the study estimated the parameters of the three regression models with PROCESS macro (Model 59) by Hayes (2013).

4.6.1 Testing for the mediation effect

4.6.1.1 Task crafting

Regression analysis revealed that, in the first step, task crafting positively predicted flow, $b = .541, p < .001$ (see M1 of Table 4.12). Hence, H1a is supported. In the second step, task crafting did not predict meaningful work, $b = .073, p = .189$ (see M2 of Table 4.12). In the third step, after controlling for task crafting, meaningful work positively predicted flow, $b = .693, p < .001$ (see M3 of Table 4.12). Finally, the bias-corrected percentile bootstrap method showed that the indirect effect of task crafting on flow via meaningful work was insignificant, $ab = .050, SE = .047, 95\% CI = [-.041, .145]$. Overall, the above four criteria indicate that Hypothesis H2a was not supported. That is, meaningful work did not mediate the relationship between task crafting and flow.

4.6.1.2 Relational crafting

Regression analysis revealed that, in the first step, relational crafting negatively predicted flow, $b = -.137, p = .034$ (see M1 of Table 4.13). Hence, H1b is not supported. In the second step, relational crafting did not predict meaningful work, $b = -.031, p = .492$ (see M2 of Table 4.13). In the third step, after controlling for relational crafting, meaningful work positively predicted flow, $b = .693, p < .001$ (see M3 of Table 4.13). Finally, the bias-corrected percentile bootstrap method showed that the indirect effect of relational crafting on flow via meaningful work was insignificant, $ab = -.021, SE = .038, 95\% CI = [-.097, .055]$. Overall, the above four criteria indicate that Hypothesis H2b was not supported. That is, meaningful work did not mediate the relationship between relational crafting and flow.

4.6.1.3 Cognitive crafting

Regression analysis revealed that, in the first step, cognitive crafting positively predicted flow, $b = .408, p < .001$ (see M1 of Table 4.14). Hence, H1c is supported. In the second step, cognitive crafting positively predicted meaningful work, $b = .638, p < .001$ (see M2 of Table 4.14). In the third step, after controlling for cognitive crafting, meaningful work positively predicted flow, $b = .693, p < .001$ (see M3 of Table 4.14). Finally, the bias-corrected percentile bootstrap method showed that the indirect effect of cognitive crafting on flow via meaningful work was significant, $ab = .442, SE = .071, 95\% CI = [.313, .592]$. Overall, the above four criteria for establishing a mediation effect were fully satisfied, which indicates that Hypothesis H2c was fully supported. Meaningful work fully mediates the relationship between cognitive crafting and flow due to insignificant results for cognitive crafting in M3 ($b = -.034, p = .683$).

Table 4.12*Mediation based on Process Model 4 (Task Crafting)*

Predictors	M1 (Flow)				M2 (Meaningful Work)				M3 (Flow)			
	<i>b</i>	<i>se</i>	<i>t</i>	<i>p</i>	<i>b</i>	<i>se</i>	<i>t</i>	<i>P</i>	<i>b</i>	<i>se</i>	<i>t</i>	<i>p</i>
Task Crafting	.541	.080	6.814	<.001	.073	.055	1.317	.189	.491	.070	6.997	<.001
Meaningful Work									.693	.093	7.490	<.001
Cognitive Crafting	.408	.068	5.981	<.001	.638	.047	13.450	<.001	-.034	.084	-.409	.6834
Relational Crafting	-.137	.064	-2.136	.034	-.031	.044	-.6885	.492	-.116	.056	-2.050	.0417
	$R^2 = .441$				$R^2 = .608$				$R^2 = .570$			
	$F(3,188) = 49.450, p < .001$				$F(3,188) = 97.378, p < .001$				$F(4,187) = 61.982, p < .001$			

Table 4.13*Mediation based on Process Model 4 (Relational Crafting)*

Predictors	M1 (Flow)				M2 (Meaningful Work)				M3 (Flow)			
	<i>b</i>	<i>se</i>	<i>t</i>	<i>p</i>	<i>b</i>	<i>se</i>	<i>t</i>	<i>P</i>	<i>b</i>	<i>se</i>	<i>t</i>	<i>p</i>
Relational Crafting	-.137	.064	-2.136	.034	-.031	.044	-.688	.492	-.116	.056	-2.050	.042
Meaningful Work									.693	.093	7.490	<.001
Task Crafting	.541	.079	6.814	<.001	.073	.055	1.317	.189	.491	.070	6.997	<.001
Cognitive Crafting	.408	.068	5.981	<.001	.638	.047	13.500	<.001	-.034	.084	-.408	.683
	$R^2 = .441$				$R^2 = .608$				$R^2 = .570$			
	$F(3,188) = 49.450, p < .001$				$F(3,188) = 97.378, p < .001$				$F(4,187) = 61.982, p < .001$			

Table 4.14*Mediation based on Process Model 4 (Cognitive Crafting)*

Predictors	M1 (Flow)				M2 (Meaningful Work)				M3 (Flow)			
	<i>B</i>	<i>se</i>	<i>t</i>	<i>p</i>	<i>b</i>	<i>se</i>	<i>t</i>	<i>p</i>	<i>b</i>	<i>se</i>	<i>t</i>	<i>p</i>
Cognitive Crafting	.408	.068	5.981	<.001	.638	.047	13.500	<.001	-.034	.084	-.408	.683
Meaningful Work									.693	.093	7.490	<.001
Task Crafting	.541	.079	6.814	<.001	.073	.055	1.317	.189	.491	.070	6.997	<.001
Relational Crafting	-.137	.064	-2.136	.034	-.031	.044	-.688	.492	-.116	.056	-2.050	.042
	$R^2 = .441$				$R^2 = .608$				$R^2 = .570$			
	$F(3,188) = 49.450, p < .001$				$F(3,188) = 97.378, p < .001$				$F(4,187) = 61.982, p < .001$			

4.6.2 Testing for moderated mediation

In the mediation analysis tests above, we were interested in determining if the dimensions of job crafting (independent variables) affected meaningful work (mediator), and, in turn, meaningful work affected flow (dependent variable). In other words, we were interested to see whether meaningful work mediated the relationship between dimensions of job crafting and flow. As the results show, meaningful work fully mediated the relationship between cognitive crafting and flow. However, meaningful work did not mediate this relationship for task crafting and relational crafting. Next, we wanted to test a moderated mediation model since there was full mediation in the case of cognitive crafting. We also wanted to look at the significant direct effects for task crafting and relational crafting, since no mediation existed for these two dimensions of job crafting.

This study estimated the moderating effect of Neuro Type on the relationship between dimensions of job crafting and flow (M1); the relation between dimensions of job crafting and meaningful work (M2); the relation between meaningful work and flow (M3). The specifications of the three models are summarized in their respective sections. Moderated mediation was established if one or both of two patterns existed (Hayes, 2013): the path between the dimensions of job crafting and meaningful work was moderated by Neuro Type, and/or the path between meaningful work and flow was moderated by Neuro Type.

4.6.2.1 Task crafting

As shown in Table 4.15, in M1 there was a significant total effect of task crafting on flow, $b = .605, p < .001$, but this effect was not moderated by Neuro Type, $b = -.102, p = .455$. M2 showed that the effect of task crafting on meaningful work was not significant, $b = .107, p = .201$, and this effect was not moderated by Neuro Type, $b = -.048, p = .613$. Finally, as M3

indicated, there was a main effect of meaningful work on flow, $b = .703, p < .001$, but this effect was not moderated by Neuro Type, $b = -.021, p = .873$. Moreover, the index of moderated mediation for task crafting was insignificant ($b = -.035, SE = .064, 95\% CI = [-.172, .078]$). Overall, the results show that H3a was not supported. Neuro Type did not moderate the direct and indirect relationships between task crafting, meaningful work, and flow. Fig 4.4 shows the results of this analysis.

4.6.2.2 Relational crafting

As shown in Table 4.16, in M1, there was not a significant main effect of relational crafting on flow, $b = -.082, p = .400$, and this effect was not moderated by Neuro Type, $b = -.084, p = .461$. M2 showed that the effect of relational crafting on meaningful work was not significant, $b = -.054, p = .427$, and this effect was not moderated by Neuro Type, $b = .024, p = .758$. Finally, as M3 indicated, there was a main effect of meaningful work on flow, $b = .695, p < .001$, and this effect was not moderated by Neuro Type, $b = .002, p = .985$. Moreover, the index of moderated mediation for task crafting was insignificant ($b = .020, SE = .060, 95\% CI = [-.108, .142]$). Overall, the results show that H3b was not supported. Neuro Type did not moderate the direct and indirect relationships between relational crafting, meaningful work, and flow. Fig 4.5 shows the results of this analysis.

4.6.2.3 Cognitive crafting

As shown in Table 4.17, in M1 there was a significant main effect of cognitive crafting on flow, $b = .472, p < .001$, and this effect was not moderated by Neuro Type, $b = -.113, p = .315$. M2 showed that the effect of cognitive crafting on meaningful work was significant, $b = .636, p < .001$, and this effect was not moderated by Neuro Type, $b = .010, p = .901$. Finally, as M3 indicated, there was a main effect of meaningful work on flow, $b = .622, p < .001$, and this

effect was not moderated by Neuro Type, $b = .152$, $p = .412$. Moreover, the index of moderated mediation for task crafting was insignificant ($b = .100$, $SE = .140$, 95% CI = [-.158, .385]).

Overall, the results show that H3c was not supported. Neuro Type did not moderate the direct and indirect relationships between cognitive crafting, meaningful work, and flow. Fig 4.6 shows the results of this analysis.

Table 4.15

Moderated Mediation based on Process Model 59 (Task Crafting)

Predictors	M1 (Flow)				M2 (Meaningful Work)				M3 (Flow)			
	<i>B</i>	<i>se</i>	<i>t</i>	<i>p</i>	<i>b</i>	<i>se</i>	<i>t</i>	<i>p</i>	<i>b</i>	<i>se</i>	<i>t</i>	<i>p</i>
Task Crafting	.605	.120	5.044	<.001	.107	.083	1.284	.201	.523	.118	4.440	<.001
Neuro Type	.022	.150	.145	.885	-.044	.104	-.428	.669	.054	.132	.405	.686
Task Crafting x Neuro Type	-.102	.136	-.749	.455	-.048	.094	-.507	.613	-.058	.136	-.427	.670
Cognitive Crafting	.403	.070	5.734	<.001	.641	.049	13.171	<.001	-.040	.087	-.460	.646
Relational Crafting	-.140	.075	-1.873	.063	-.045	.052	-.871	.385	-.108	.067	-1.615	.108
Meaningful Work									.703	.115	6.104	<.001
Meaningful Work x Neuro Type									-.021	.134	-.160	.873
	$R^2 = .443$				$R^2 = .609$				$R^2 = .571$			
	$F(5,186) = 29.572, p < .001$				$F(5,186) = 58.012, p < .001$				$F(7,184) = 35.035, p < .001$			

Fig. 4.4

*Moderation model between task crafting and flow mediated by meaningful work; *** $p < .001$*

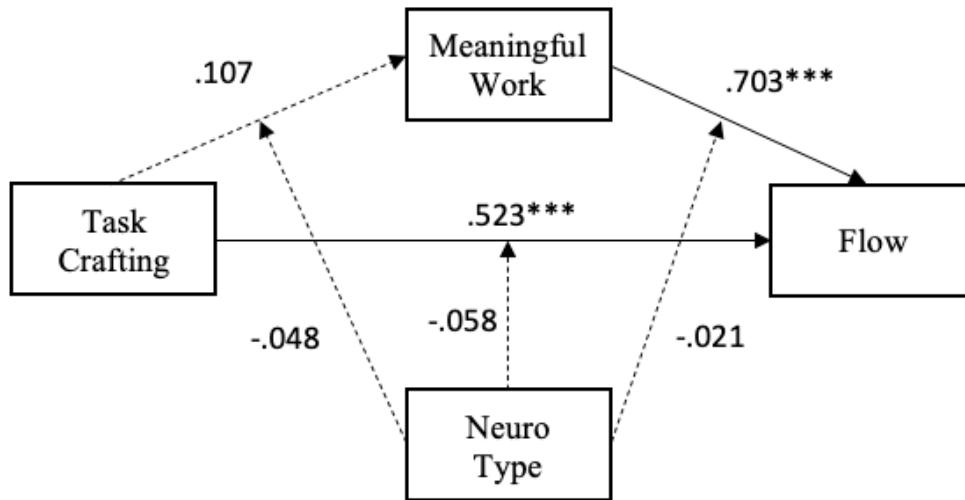


Table 4.16*Moderated Mediation based on Process Model 59 (Relational Crafting)*

Predictors	M1 (Flow)				M2 (Meaningful Work)				M3 (Flow)			
	<i>b</i>	<i>se</i>	<i>t</i>	<i>p</i>	<i>b</i>	<i>se</i>	<i>t</i>	<i>p</i>	<i>b</i>	<i>se</i>	<i>t</i>	<i>p</i>
Relational Crafting	-.082	.097	-.844	.400	-.054	.068	-.796	.427	-.044	.090	-.493	.623
Neuro Type	.036	.149	.244	.808	-.041	.103	-.395	.693	.065	.131	.494	.622
Relational Crafting x Neuro Type	-.084	.114	-.739	.461	.024	.079	.309	.758	-.102	.111	-.920	.359
Task Crafting	.528	.082	6.443	<.001	.079	.057	1.387	.167	.473	.073	6.524	<.001
Cognitive Crafting	.408	.070	5.803	<.001	.641	.048	13.147	<.001	-.039	.086	-.449	.654
Meaningful Work									.695	.112	6.195	<.001
Meaningful Work x Neuro Type									.002	.130	.019	.985
	$R^2 = .443$				$R^2 = .609$				$R^2 = .573$			
	$F(5,186) = 29.566, p < .001$				$F(5,186) = 57.929, p < .001$				$F(7,184) = 35.257, p < .001$			

Fig. 4.5

*Moderation model between relational crafting and flow mediated by meaningful work; *** $p < .001$*

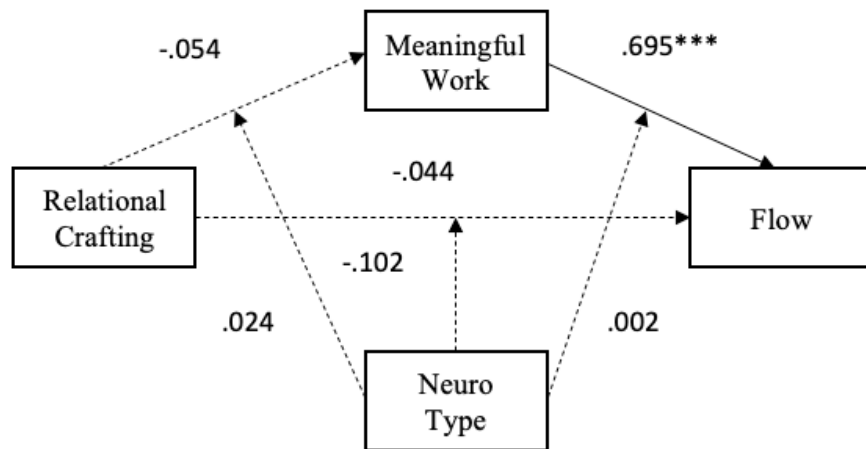
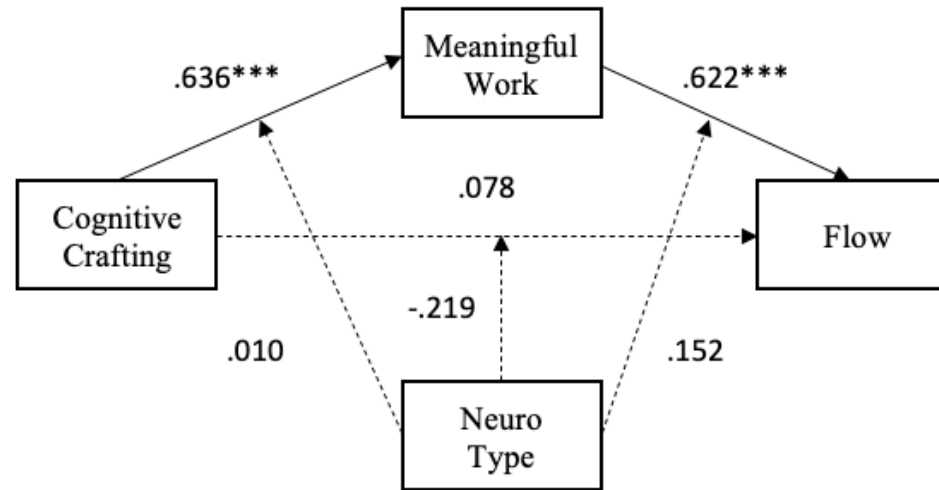


Table 4.17*Moderated Mediation based on Process Model 59 (Cognitive Crafting)*

Predictors	M1 (Flow)				M2 (Meaningful Work)				M3 (Flow)			
	<i>b</i>	<i>se</i>	<i>t</i>	<i>p</i>	<i>b</i>	<i>se</i>	<i>t</i>	<i>p</i>	<i>b</i>	<i>se</i>	<i>t</i>	<i>p</i>
Cognitive Crafting	.472	.097	4.860	<.001	.636	.068	9.423	<.001	.078	.119	.654	.514
Neuro Type	.032	.149	.213	.832	-.040	.103	-.383	.702	.059	.131	.450	.654
Cognitive Crafting x Neuro Type	-.113	.112	-1.007	.315	.010	.078	.125	.901	-.219	.156	-1.406	.162
Task Crafting	.529	.081	6.530	<.001	.076	.056	1.358	.176	.476	.072	6.658	<.001
Relational Crafting	-.129	.073	-1.756	.081	-.040	.051	-.786	.433	-.101	.065	-1.570	.118
Meaningful Work									.622	.129	4.827	<.001
Meaningful Work x Neuro Type									.152	.185	.822	.412
	$R^2 = .444$				$R^2 = .609$				$R^2 = .576$			
	$F(5,186) = 29.733, p < .001$				$F(5,186) = 57.888, p < .001$				$F(7,184) = 35.633, p < .001$			

Fig. 4.6

*Moderation model between cognitive crafting and flow mediated by meaningful work; *** $p < .001$*



4.6.3 Conditional direct and indirect effects

Table 4.18 shows the direct effects and indirect effects by Neuro Type. These results would be important if there had been a significant moderation. Since the results of our testing for the moderated mediation show that there was no significant moderation by Neuro Type, these results are presented for informational purposes only.

Table 4.18

Conditional direct and indirect effects of job crafting on flow via meaningful work and moderated by Neuro Type.

Neuro Type	Job Crafting dimensions	Direct effects				Indirect effects		
		β	SE	<i>t</i>	<i>p</i>	β	SE	95%
Autistic	Task Crafting	.465	.084	5.563	<.001	.040	.049	[-.054, .134]
	Relation Crafting	-.146	.081	-1.801	.073	-.021	.042	[-.105, .060]
	Cognitive Crafting	-.141	.113	-1.246	.215	.500	.110	[.308, .736]
Non-autistic	Task Crafting	.523	.118	4.440	<.001	.075	.066	[-.042, .218]
	Relation Crafting	-.044	.090	-.493	.623	-.037	.059	[-.154, .077]
	Cognitive Crafting	.078	.119	.654	.514	.396	.091	[.225, .587]

4.7 Hypotheses Summary

In this study, a total of nine hypotheses were proposed. H1a and H1c were supported, however, H1b was not supported. Task crafting and cognitive crafting were positively related to flow; however, relational crafting was not positively related to flow. H2a and H2b were not supported, however, H2c was supported. Meaningful work mediated the relationship between cognitive crafting and flow. However, meaningful work did not mediate the relationship between task crafting and relational crafting and flow. H3a, H3b, and H3c were not supported. Neuro Type did not moderate the direct and indirect relationships between the dimensions of job crafting, meaningful work, and flow. A summary of the hypotheses tested is provided in Table 4.19.

Table 4.19*Results of predicted hypotheses*

	Hypothesis	Supported
H1a	Task crafting is positively related to flow	Yes
H1b	Relational crafting is positively related to flow	No
H1c	Cognitive crafting is positively related to flow	Yes
H2a	Meaningful work mediates the relationship between task crafting and flow	No
H2b	Meaningful work mediates the relationship between relational crafting and flow	No
H2c	Meaningful work mediates the relationship between cognitive crafting and flow	Yes
H3a	Neuro Type moderates the direct and indirect relationships between task crafting, meaningful work, and flow	No
H3b	Neuro Type moderates the direct and indirect relationships between relational crafting, meaningful work, and flow	No
H3c	Neuro Type moderates the direct and indirect relationships between cognitive crafting, meaningful work, and flow	No

4.8 Summary

This chapter presented the results of the study. The first section covered the data sample, cleaning procedures, and final parameters of the sample. In the second section, the regression assumptions' test results were presented, followed by the results of the regression and hypotheses testing results.

CHAPTER 5

DISCUSSION, LIMITATIONS, IMPLICATIONS, FUTURE RESEARCH AND CONCLUSION

5.1 Introduction

The primary objective of this research was to investigate further the relationships between employee job crafting, meaningful work, and flow and to compare the results between Neuro Type (autistic and non-autistic) employees. Building on the research results presented in Chapter 4, Chapter 5 is divided into five sections. First, a discussion of the importance of the study findings is presented, followed by a section to discuss the research limitations. The third and fourth sections address the study's implications and directions for future research. The fifth and last section provides a conclusion.

5.2 Significance of findings

This study hypothesized a positive relationship between the dimensions of job crafting and flow. The study also hypothesized a positive mediating effect of meaningful work on the relationship between the dimensions of job crafting and flow. In addition, the study predicted that Neuro Type would moderate the direct and indirect relationship between the dimensions of job crafting and flow. Based on the definitions of these constructs, these hypotheses were plausible. However, the findings of this study are mixed. Among the job crafting dimensions, only task crafting and cognitive crafting resulted in a positive relationship with flow. Relational crafting resulted in a significant negative relationship with flow. The results also indicated that meaningful work only mediated the relationship between cognitive crafting and flow, but not for task crafting or relational crafting.

Moreover, the study found that Neuro Type did not moderate the direct and indirect relationship between the dimensions of job crafting and flow. This last finding is encouraging since the results indicated no differences in the assessed model by Neuro Type. This should encourage employers to hire and develop individuals with ASD as there are no significant differences between Neuro Type in how motivated and concentrated they are when performing their work.

5.3 Discussion of results

This section discusses the specific results of the study. The section is broken down into three sub-sections grouped by higher-order hypotheses. Before addressing the research question in H3, the first two sub-sections discuss the results of the tests performed in this research to investigate the predicted positive relationships between the independent variables (task crafting, relational crafting, and cognitive crafting) and the dependent variable (flow), along with the predicted positive mediating effect of meaningful work on the relationship between job crafting flow. The last sub-section discusses the findings of moderated mediation of these relationships by Neuro Type.

5.3.1 Hypothesis 1

The results for Hypothesis 1 partly substantiated the proposed positive relationship between job crafting and flow. Bakker and van Woerkom (2017) have argued that employees can experience flow using proactive individual strategies, including job crafting. Since job crafting allows employees to make changes to their jobs to make it more meaningful (Bakker & van Woerkom, 2017), employees may have the opportunity to enhance the person-job fit (Tims & Bakker, 2010), leading to the increased opportunity for flow and optimal performance. Consistent with previous research findings, this study found a statistically significant positive

relationship between two dimensions of job crafting (task and cognitive) and flow. Overall, the three dimensions of job crafting predicted 44% of employees' sense of flow ($R^2 = .441$). Contradictory to the findings of previous research, this study found that relational crafting resulted in a significant negative relationship with flow ($b = -.137$). This makes sense since forging relationships at work might be difficult for some autistic individuals. As mentioned in Chapter 1, individuals with autism often struggle with social anxiety and fitting in with a group.

5.3.2 Hypothesis 2

The second hypothesis aimed to confirm the positive mediating effect of meaningful work on the relationship between the three job crafting dimensions and flow. Previous research has shown that employees who make their work more meaningful to them, with tools like job crafting, report higher levels of well-being (Nielsen & Abildgaard, 2012; Slemp & Vella-Brodick, 2014; Tims et al., 2013). This study found that the four criteria for establishing a mediation effect (Baron & Kenny, 1986) were fully satisfied for only cognitive crafting. Perhaps thinking about your job differently (i.e., cognitive crafting) is more conducive to meaningful work and flow. That is, someone doing what many of us view as a meaningless task could use cognitive crafting to tell themselves that what they are doing is meaningful and helps the organization. In doing so, they engage in flow.

5.3.3 Hypothesis 3

Lastly, the third hypothesis proposed that Neuro Type moderates the direct and indirect relationships between job crafting dimensions, meaningful work and flow. In other words, this study examined whether there are differences in the assessed mediated model by Neuro Type. This study wanted to test a moderated mediation model since there was full mediation in the case of cognitive crafting. This study also wanted to look at the significant direct effects of task

crafting and relational crafting since no mediation existed for these two dimensions of job crafting. The results herein show that Neuro Type did not moderate the direct nor indirect relationships between job crafting dimensions, meaningful work, and flow. In other words, there are no differences in the assessed model by Neuro Type.

The fact that the results herein for Neuro Type were not significant is important. It was hypothesized that there would be differences between the autistic and the non-autistic individuals in our study because psychologists, physicians, parents, and the popular press all emphasize the differences between the two groups. But, in the case of working, perhaps there are not as many differences in Neuro Types as we originally thought. Of course, there has been very little research on autistic individuals in the workplace to date. Many people with autism have been told that they cannot work. In addition, a number of individuals on the spectrum go undiagnosed. Lastly, access to individuals with autism is very restricted to protect this group.

5.4 Limitations

As with any empirical research, this study has limitations that are discussed in this section. First, this study had a small sample size for the autistic group. Among other reasons, this is because most people do not prefer to self-identify as autistic for various reasons. Also, we found that autism support groups on social media are highly protective of this group. They do not allow mass postings of surveys for data collection purposes due to fear of exploiting this vulnerable population. The same was true for the companies we approached for data collection that exclusively hire employees who identify as autistic. Second, the samples for this study varied demographically, particularly in ethnicity. For example, autistic respondents were 83.3% Caucasian or white/non-Hispanic compared to 57.3% for non-autistic respondents. Similarly,

4.2% were Asian or Pacific Islander autistic respondents compared to 28.1% of non-autistic respondents.

Another limitation of this study is that it did not measure the level of autism. It is crucial to understand that autism is categorized by a spectrum of similar disorders with a shared core of symptoms, varying by level of disability and a combination of symptoms (American Psychiatric Association, 2013). Also, the data for this study was collected while employees faced the uncertainty and stress of COVID-19, which may have played a role in how they responded to the survey questions. Lastly, for this study, the convergent validity of scales was inconsistent with the existing research. For example, the factor loadings of intrinsic work motivation, a sub-scale of Bakker's (2008) Work-related flow inventory (WOLF), were inconclusive. Also, all ten items of Steger, Dik, and Duffy's (2012) Work and Meaning Inventory (WAMI) loaded on one factor instead of three factors.

5.5 Implications

As the literature suggests, in general, employees proactively modify the physical, cognitive, and social aspects of their jobs to align with their skills, interests, and values, making their work more meaningful. These modifications can help employees achieve flow where they can get entirely absorbed and thoroughly enjoy an activity (Csikszentmihalyi, 1997). Previous studies of job crafting and its relationship with the flow and meaningful work have focused on neurotypicals (i.e., people who do not have autistic or other neurologically atypical thought or behavior patterns). The findings of this research have implications for organizations and researchers alike. This section provides a discussion of some of the key implications of this study.

5.5.1 Employers

To attract and retain talent and foster a healthy and productive work environment, organizations need to understand the unique attributes possessed by those with ASD. These highly desirable qualities include attention to detail, willingness to take on repetitive tasks, trustworthiness, reliability, timeliness, intense focus, and attention to detail (Parr & Hunter, 2014). Companies that have started inclusive hiring from this untapped market include Microsoft, JPMorgan Chase & Co., EY, and SAP (Annabi et al., 2019). The findings of this study may help and encourage them to put away some of their fears or stereotypes of people with ASD. These findings could encourage employers to hire and develop individuals with ASD.

5.5.2 Academia

The findings of this study contribute to the research domain of job crafting, meaningful work, and flow, particularly how these constructs relate to those with ASD. Existing research has linked job crafting to flow, and the role meaningful work plays in this relationship for neurotypicals, but there is a shortage of research linking these constructs to those with ASD. For the most part, the findings of this study are consistent with existing literature, although they differ in some respects. For example, this study did not find evidence of a positive relationship between relational crafting and flow. In fact, the evidence was significant and negative. Also, meaningful work did not mediate the relationship between two job crafting dimensions (task and relational) and flow herein, yet it has in previous research in the literature. Perhaps Neuro Type impacted our results.

5.6 Future research

While this study provides valuable insights for academicians and practitioners, more research is required to further explore how job crafting, meaningful work, and flow are related to

those with ASD. First, researchers need to find creative ways to increase the sample size for those with autism. The autistic population needs to feel safe from any practices that can exploit them in the name of research. Second, a more diverse racial makeup of respondents is needed. Also, the different levels of autism need to be measured in future research. This can be challenging since the spectrum is not only broad but diverse. That is, it includes high or low functioning, verbal or non-verbal, etc., attributes. Thus, the scales' validity and reliability need to be re-evaluated to see if they are conducive and aligned with differing levels of physical and cognitive abilities such as autism, Asperger's Syndrome, ADHD, etc. Lastly, forthcoming researchers must consider the significance of the particular industry and job type when delving into the study of job crafting. Job crafting for autistic individuals may vary significantly between dissimilar industries such as retailing and accounting. Therefore, industry-specific research is crucial to understand job crafting practices comprehensively.

5.7 Conclusion

Our research delved into the topic of Neuro Type and its relation to employment, resulting in a significant contribution to the limited existing literature on this subject. It is common for people to hold stereotypes about this group, often focusing on the differences between them and individuals without autism. Therefore, our initial hypothesis was that there would be significant differences between the two groups. However, our findings surprised us, revealing that they have more similarities than differences regarding job crafting, meaningful work, and flow. We are particularly pleased that our H3 hypotheses were not supported, which indicates that our research has uncovered new insights into the topic. As Paul Collins (2004) astutely noted in his book "Not Even Wrong: Adventures in Autism," autism is not solely defined by what is missing but also by an over-expression of traits that make our species unique.

By delving deeper into this topic, we hope to encourage a greater understanding and appreciation of the unique perspectives and abilities of individuals with autism.

REFERENCES

- Agarwal, U. A. (2014). Linking justice, trust and innovative work behaviour to work engagement. *Personnel Review*, 43(1), 41–73. <http://doi.org/10.1108/PR-02-2012-0019>
- American Psychiatric Association. Diagnostic and statistical manual of mental disorders. 5th ed. Arlington, VA: American Psychiatric Association; 2013.
- Annabi, H., Sundaresan, K., & Zolyomi, A. (2017). It's not just about attention to details: Redefining the talents autistic software developers bring to software development. *In Proceedings of the 50th Hawaii International Conference on System Sciences*.
- Annabi, H., Crooks, E.W., Barnett, N., Guadagno, J., Mahoney, J.R., Michelle, J., Pacilio, A., Shukla, H., & Velasco, J. (2019). Autism @ Work Playbook: Finding talent and creating meaningful employment opportunities for people with autism. Seattle, WA: ACCESS-IT, The Information School, University of Washington.
- Arnold, K. A., Turner, N., Barling, J., Kelloway, E. K., & McKee, M. C. (2007). Transformational leadership and psychological well-being: the mediating role of meaningful work. *Journal of Occupational Health Psychology*, 12(3), 193.
- Ashforth, B. E., & Humphrey, R. H. (1995). Emotion in the workplace: A reappraisal. *Human relations*, 48(2), 97–125.
- Austin, R. D., & Sonne, T. (2014). The Dandelion Principle: Redesigning work for the innovation economy. *MIT Sloan Management Review*, 55(4), 67.
- Austin, R. D., & Pisano, G. P. (2017). Neurodiversity as a competitive advantage. *Harvard Business Review*, 95(3), 96-103.
- Bagozzi, R. P., & Yi, Y. (1988). On the evaluation of structural equation models. *Journal of the Academy of Marketing Science*, 16, 74-94. doi:10.1007/bf02723327

- Bagozzi, R. P., & Yi, Y. (1991). Multitrait-multimethod matrices in consumer research. *Journal of Consumer Research*, 17(4), 426-439.
- Bakker, A. B. (2005). Flow among music teachers and their students: the crossover of peak experiences. *Journal of Vocational Behavior*, 66, 26-44.
- Bakker, A. B. (2008). The work-related flow inventory: construction and initial validation of the WOLF. *Journal of Vocational Behavior*, 72, 400-414.
- Bakker, A. B., & Demerouti, E. (2007). The job demands-resources model: State of the art. *Journal of Managerial Psychology*.
- Bakker, A. B., & Demerouti, E. (2008). Towards a model of work engagement. *Career development international*.
- Bakker, A. B., Tims, M., & Derks, D. (2012). Proactive personality and job performance: The role of job crafting and work engagement. *Human Relations*, 65(10), 1359-1378.
- Bakker, A. B., & van Woerkom, M. (2017). Flow at work: A self-determination perspective. *Occupational Health Science*, 1(1-2), 47-65.
- Balducci, C., Fraccaroli, F., & Schaufeli, W. B. (2010). Psychometric properties of the Italian version of the Utrecht Work Engagement Scale (UWES-9): A cross-cultural analysis. *European Journal of Psychological Assessment*, 26(2), 143.
- Barnes, C. M., Lucianetti, L., Bhave, D. P., & Christian, M. S. (2014). You wouldn't like me when I'm sleepy: Leader sleep, daily abusive supervision, and work unit engagement. *Academy of Management Journal*, 58(5), amj.2013.1063.
<http://doi.org/10.5465/amj.2013.1063>

- Behrend, T. S., Sharek, D. J., Meade, A. W., & Wiebe, E. N. (2011). The viability of crowdsourcing for survey research. *Behavior Research Methods*, 43, 800–813. doi:10.3758/s13428-011-0081-0
- Berg, J. M., & Dutton, J. E. (2008). Crafting a fulfilling job: Bringing passion into work. *Ann Arbor, MI: University of Michigan, Ross School of Business*, 1-8.
- Berg, J. M., Dutton, J. E., & Wrzesniewski, A. (2013). Job Crafting and Meaningful Work. In B. J. Dik, Z. S. Byrne & M. F. Steger (Eds.), *Purpose and meaning in the workplace* (pp. 81-104). Washington, DC: American Psychological Association.
- Berinsky, A. J., Huber, G.A., & Lenz, G.S. (2012). Evaluating online labor markets for experimental research: Amazon.com's Mechanical Turk. *Political Analysis*, 20, 351– 368. doi:10.1093/pan/mpr057
- Bureau of Labor Statistics (BLS, 2017). Research data on business employment dynamics by age and size. Retrieved from <https://www.bls.gov/bdm/business-employment-dynamics-data-by-age-and-size.htm>
- Buhrmester, M., Kwang, T., & Gosling, S. D. (2011). Amazon's Mechanical Turk: A new source of inexpensive, yet high-quality, data?. *Perspectives on Psychological Science: A Journal of the Association for Psychological Science*, 6, 3-5. doi:10.1177/1745691610393980
- Byrne, B. M. (2010). *Structural equation modeling with AMOS: Basic concepts, applications, and programming*. New York, NY: Routledge.
- Bowman, A. D. (2020). What We Know About Employers' Perspectives on Successfully Integrating Adults with Autism Spectrum Disorders in the Workplace. *Int J Psychiatr Res*, 3(1), 1-4.

- Carter, L., River, B., & Sachs, M. L. (2013). Flow in sport, exercise, and performance: A review with implications for future research. *Journal of Multidisciplinary Research (1947-2900)*, 5(3).
- Chambers, S., & Nimon, K. (2018). Conducting survey research using MTurk. *Handbook of research on innovative techniques, trends, and analysis for optimized research methods*. Hershey, PA: IGI Global.
- Clapp, S. R., Uszak, N., Olcum, E., & Hancock, P. A. (2018). Design for Flow: A Work System Approach. In *Proceedings of the 2018 IISE Annual Conference*.
- Colby, A., Sippola, L., & Phelps, E. (2001). Social responsibility and paid work in contemporary American life. In A. Rossi (Ed.), *Caring and doing for others: Social responsibility in the domains of family, work, and community* (pp. 349–399). Chicago: University of Chicago Press
- Cole, J. S., McCormick, A. C., & Gonyea, R. M. (2012, April). *Respondent use of straight-lining as a response strategy in education survey research: Prevalence and implications*. Paper presented at the annual meeting of the American Educational Research Association. British Columbia: Canada.
- Collins, P. (2004). *Not even wrong: Adventures in autism*. Bloomsbury.
- Csikszentmihalyi, M. (1975). *Beyond boredom and anxiety*. San Francisco, CA, US: Jossey-Bass.
- Csikszentmihalyi, M. (1990). *Flow: The Psychology of Optimal Experience*. New York (HarperPerennial) 1990.
- Csikszentmihalyi, M. (1997). *Finding flow: The psychology of engagement with everyday life*. Basic Books.

- Csikszentmihalyi, M. (1999). If we are so rich, why aren't we happy? *American Psychologist*, 54, 821–827.
- Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: human needs and the self-determination of behavior. *Psychological Inquiry*, 11, 227–268.
- Durkin, M. S., Maenner, M. J., Meaney, F. J., Levy, S. E., DiGuseppi, C., Nicholas, J. S., Kirby, R. S., Pinto-Martin, J. A., & Schieve, L. A. (2010). Socioeconomic Inequality in the Prevalence of Autism Spectrum Disorder: Evidence from a U.S. Cross-Sectional Study. *PLoS ONE*, 5(7), 1–8. <https://doi.org/10.1371/journal.pone.0011551>
- Engeser, S. E. (2012). *Advances in flow research*. Springer Science+ Business Media.
- Fan, W., & Yan, Z. (2010). Factors affecting response rates of the web survey: A systematic review. *Computers in human behavior*, 26(2), 132-139.
- Feitosa, J., Joseph, D.L., & Newman, D.A. (2015). Crowdsourcing and personality measurement equivalence: A warning about countries whose primary language is not English. *Personality and Individual Differences*, pp. 75, 47–52. doi:10.1016/j.paid.2014.11.017
- Gallup Inc. (2017). State of the American Workplace [White paper] Retrieved September 1, 2018, from Gallup: <https://news.gallup.com/reports/199961/7.aspx>
- Geyser, I., Geldenhuys, M., & Crous, F. (2015). The dimensionality of the work related flow inventory (WOLF): a South African study. *Journal of Psychology in Africa*, 25(4), 282-287.
- Goodman, J. K., Cryder, C. E., & Cheema, A. (2013). Data collection in a flat world: The strengths and weaknesses of Mechanical Turk samples. *Journal of Behavioral Decision Making*, 26(3), 213–224.

- Graham, J. M., Guthrie, A. C., & Thompson, B. (2003). Consequences of not interpreting structure coefficients in published CFA research: A reminder. *Structural Equation Modeling*, *10*, 142–153. doi: 10.1207/S15328007SEM1001_7
- Grant, A. M., & Ashford, S. J. (2008). The dynamics of proactivity at work. *Research in organizational behavior*, *28*, 3–34.
- Gruman, J. A., & Saks, A. M. (2011). Performance management and employee engagement. *Human Resource Management Review*, *21*(2), 123–136.
<http://doi.org/10.1016/j.hrmr.2010.09.004>
- Gupta, V., & Kumar, S. (2013). Impact of performance appraisal justice on employee engagement. *Employee Relations*, *35*, 61–78.
- Hackman, J. R., & Oldham, G. R. (1980). *Work Design Reading, MA: Addison-Wesley*, p. 129.
- Hayes, A. (2013). *Introduction to mediation, moderation and conditional process analysis*. New York, NY: The Guildford Press.
- Hayes, A. (2018). *Introduction to mediation, moderation and conditional process analysis*. 2nd edition. New York, NY: The Guildford Press.
- Harpaz, I., & Fu, X. (2002). The structure of the meaning of work: A relative stability amidst change. *Human Relations*, *55*, 639–667. doi:10.1177/0018726702556002
- Henson, R. K., & Roberts, J. K. (2006). Use of exploratory factor analysis in published research common errors and some comment on improved practice. *Educational and Psychological Measurement*, *66*, 393–416. doi:10.1177/0013164405282485
- Hillier, A., Campbell, H., Mastriani, K., Izzo, M. V., Kool-Tucker, A. K., Cherry, L., & Beversdorf, D. Q. (2007). Two-year evaluation of a vocational support program for adults on the autism spectrum. *Career Development for Exceptional Individuals*, *30*(1), 35–47.

- Hughes, J. C., & Rog, E. (2008). Talent management: A strategy for improving employee recruitment, retention and engagement within hospitality organizations. *International Journal of Contemporary Hospitality Management*, 20(7), 743–757.
- Kahn, W. A. (1990). "Psychological Conditions of Personal Engagement and Disengagement at Work." *Academy of Management Journal* 33(4): 692–724.
- Kahn, W. A. (1992). To be fully there: Psychological presence at work. *Human Relations*, 45(4), 321–349. <http://doi.org/10.1177/001872679204500402>
- Kankainen, A., S. Taskinen, and H. Oja. 2004. On Mardia's Tests of Multinormality. *Theory and Applications of Recent Robust Methods*, 153–164. doi:10.1007/978-3-0348-7958-3_1
- Kline, R. B. (2016). *Principles and practice of structural equation modeling* (4th ed.). New York: Guilford.
- Landers, R.N., & Behrend, T.S. (2015). An inconvenient truth: Arbitrary distinctions between organizational, Mechanical Turk, and other convenience samples. *Industrial and Organizational Psychology*, 8, 142–164. doi:10.1017/iop.2015.13
- Larson, R., & Richards, M. H. (1994). *Divergent realities: The emotional lives of mothers, fathers, and adolescents*. New York: Basic Books.
- Leana, C., Appelbaum, E., & Shevchuk, I. (2009). Work process and quality of care in early childhood education: The role of job crafting. *Academy of Management Journal*, 52(6), 1169-1192.
- Leigh, J., & Du, J. (2015). Brief Report: Forecasting the Economic Burden of Autism in 2015 and 2025 in the United States. In *Journal of Autism & Developmental Disorders* (Vol. 45, Issue 12, pp. 4135–4139). <https://doi.org/10.1007/s10803-015-2521-7>

- Linsner, S. H. (2009). *Transformational leadership and "flow": the mediating effects of psychological climate* (Doctoral dissertation, Kansas State University).
- Macey, W. H., Schneider, B., Barbera, K. M., & Young, S. A. (2009). *Employee engagement: Tools for analysis, practice, and competitive advantage*. Malden, WA.: Wiley-Blackwell.
- Maenner, M. J., Shaw, K. A., & Baio, J. (2020). Prevalence of autism spectrum disorder among children aged 8 years—autism and developmental disabilities monitoring network, 11 sites, United States, 2016. *MMWR Surveillance Summaries*, 69(4), 1.
- Mandell, D. S., Wiggins, L. D., Yeargin-Allsopp, M., Carpenter, L. A., Daniels, J., Thomas, K. C., DiGuseppi, C., Durkin, M. S., Giarelli, E., Pinto-Martin, J. A., Morrier, M. J., Nicholas, J. S., Shattuck, P. T., & Kirby, R. S. (2009). Racial/Ethnic Disparities in the Identification of Children With Autism Spectrum Disorders. *American Journal of Public Health*, 99(3), 493–498. <https://doi.org/10.2105/AJPH.2007.131243>
- Mone, E., & London, M. (2009). *Employee engagement through effective performance management: A practical guide for managers*. New York, NY.: Routledge.
- Moneta, G. B. (2017). Validation of the short flow in work scale (SFWS). *Personality and Individual Differences*, 109, 83-88.
- Moneta, G. B., & Csikszentmihalyi, M. (1996). The effect of perceived challenges and skills on the quality of subjective experience. *Journal of Personality*, 64(2), 275-310.
- Morris, M. R., Begel, A., & Wiedermann, B. (2015). Understanding the challenges faced by neurodiverse software engineering employees: Towards a more inclusive and productive technical workforce. In *Proceedings of the 17th International ACM SIGACCESS Conference on Computers & Accessibility* (pp. 173-184).

- Moss, S. E., & Lawrence, K. G. (1997). The effects of priming on the self-reporting of perceived stressors and strains. *Journal of Organizational Behavior: The International Journal of Industrial, Occupational and Organizational Psychology and Behavior*, 18(4), 393–403.
- Nielsen, K., & Abildgaard, J. S. (2012). The development and validation of a job crafting measure for use with blue-collar workers. *Work & Stress*, 26(4), 365-384.
- Oppenheimer, D. M., Meyvis, T., & Davidenko, N. (2009). Instructional manipulation checks: Detecting satisficing to increase statistical power. *Journal of Experimental Social Psychology*, 45(4), 867-872.
- Padhi, B., Panda, D., & Kumar, A. (2015). A study on employee engagement models for sustainability of organisation. *International Journal of Research and Development-A Management Review*, 4(4), 79-85.
- Parr, A. D., & Hunter, S. T. (2014). Enhancing work outcomes of employees with autism spectrum disorder through leadership: Leadership for employees with autism spectrum disorder. *Autism: The International Journal of Research & Practice*, 18(5), 545–554.
<https://doi.org/10.1177/1362361313483020>
- Pauken, P. D. (2008). A perfect match: decoding employee engagement–Part II: engaging jobs and individuals. *Industrial and commercial training*.
- Petrou, P., Demerouti, E., Peeters, M. C., Schaufeli, W. B., & Hetland, J. (2012). Crafting a job on a daily basis: Contextual correlates and the link to work engagement. *Journal of Organizational Behavior*, 33(8), 1120-1141.
- Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88, 879-903. doi:10.1037/0021-9010.88.5.879

- Rich, B. L., Lepine, J. A., & Crawford, E. R. (2010). Job engagement: Antecedents and effects on job performance. *Academy of Management Journal*, 53(3), 617–635.
<http://doi.org/10.5465/amj.2010.51468988>
- Robledo, E., Zappalà, S., & Topa, G. (2019). Job crafting as a mediator between work engagement and wellbeing outcomes: A time-lagged study. *International journal of environmental research and public health*, 16(8), 1376.
- Rosso, B. D., Dekas, K. H., & Wrzesniewski, A. (2010). On the meaning of work: A theoretical integration and review. *Research in organizational behavior*, 30, 91-127.
- Rouse, S. V. (2015). A reliability analysis of Mechanical Turk data. *Computers in Human Behavior*, pp. 43, 304–307.
- Roux, A. M., Shattuck, P. T., Cooper, B. P., Anderson, K. A., Wagner, M., & Narendorf, S. C. (2013). Postsecondary Employment Experiences Among Young Adults With an Autism Spectrum Disorder. *Journal of the American Academy of Child & Adolescent Psychiatry*, 52(9), 931–939. <https://doi.org/10.1016/j.jaac.2013.05.019>
- Saks, A. M. (2006). Antecedents and consequences of employee engagement. *Journal of Managerial Psychology*, 21(7), 600–619.
- Schaufeli, W. B., Salanova, M., González-Romá, V., & Bakker, A. B. (2002). The measurement of engagement and burnout: A two sample confirmatory factor analytic approach. *Journal of Happiness Studies*, 3(1), 71-92.
- Schaufeli, W. & Arnold, B. (2002). Positive organizational behavior: Engaged employees in flourishing organizations. *Journal of Organizational Behavior*. Vol. 29, pp147–154.

- Schaufeli, W. B., Bakker, A. B., & Salanova, M. (2006). The measurement of work engagement with a short questionnaire: A cross-national study. *Educational and psychological measurement*, 66(4), 701-716.
- Schumacker, R. E., & Lomax, R. G. (2016). *A beginner's guide to structural equation modeling* (4th ed.). New York: Routledge.
- Schwartz, J., Bersin, J., & Pelster, B. (2014). Global human capital trends 2014: Engaging the 21st-century workforce. Westlake, TX: Deloitte University Press.
- Shantz, A., Alfes, K., Truss, C., & Soane, E. (2013). The role of employee engagement in the relationship between job design and task performance, citizenship and deviant behaviours. *The International Journal of Human Resource Management*, 24(13), 2608-2627.
- Shattuck, P. T., Narendorf, S. C., Cooper, B., Sterzing, P. R., Wagner, M., & Taylor, J. L. (2012). Postsecondary Education and Employment Among Youth With an Autism Spectrum Disorder. *Pediatrics*, 129(6), 1042–1049. <https://doi.org/10.1542/peds.2011-2864>
- Slemp, G. R., & Vella-Brodrick, D. A. (2013). The Job Crafting Questionnaire: A new scale to measure the extent to which employees engage in job crafting. *International Journal of Wellbeing*, 3(2).
- Slemp, G. R., & Vella-Brodrick, D. A. (2014). Optimising employee mental health: The relationship between intrinsic need satisfaction, job crafting, and employee well-being. *Journal of Happiness Studies*, 15(4), 957–977.

- Sparks, J. R., & Schenk, J. A. (2001). Explaining the effects of transformational leadership: An investigation of the effects of higher-order motives in multilevel marketing organizations. *Journal of Organizational Behavior*, 22, 849–869. doi:10.1002/job.116
- Steger, M. F., Dik, B. J., & Duffy, R. D. (2012). Measuring meaningful work: The work and meaning inventory (WAMI). *Journal of Career Assessment*, 20(3), 322-337.
- Stone, D. L., Gueutal, H. G., & McIntosh, B. (1984). The effects of feedback sequence and expertise of the rater on perceived feedback accuracy. *Personnel Psychology*, 37(3), 487–506.
- Šverko, B., & Vidović, V. V. (1995). Studies of the meaning of work: Approaches, models and some of the findings. In *Life roles, values and careers*. Jossey-Bass.
- Tims, M., Bakker, A. B., & Derks, D. (2012). Development and validation of the job crafting scale. *Journal of Vocational Behavior*, 80(1), 173-186.
- Tims, M., Bakker, A. B., & Derks, D. (2013a). The impact of job crafting on job demands, job resources, and well-being. *Journal of Occupational Health Psychology*, 18(2), 230.
- Tims, M., Bakker, A. B., Derks, D., & Van Rhenen, W. (2013b). Job crafting at the team and individual level: Implications for work engagement and performance. *Group & Organization Management*, 38(4), 427-454.
- Vogus, T. J., & Taylor, J. L. (2018). Flipping the script: Bringing an organizational perspective to the study of autism at work. *Autism*, 22(5), 514–516.
<https://doi.org/10.1177/1362361318776103>
- Volker, M. A. & Lopata, C. (2008). Autism: A review of biological bases, assessment, & intervention. *School of Psychology Quarterly*, 23, 258-270.

- Whittington, J. L., Meskelis, S., Asare, K. E., & Beldona, S. (2017). *Enhancing employee engagement: An evidence-based approach*. New York, NY.: Palgrave-Macmillan.
- Wolf, E. J., Harrington, K. M., Clark, S. L., & Miller, M. W. (2013). Sample size requirements for structural equation models: An evaluation of power, bias, and solution propriety. *Educational and psychological measurement, 73*(6), 913–934.
- Wrzesniewski, A. (2003). Finding positive meaning in work. *Positive organizational scholarship: Foundations of a new discipline*, 296-308.
- Wrzesniewski, A., & Dutton, J. E. (2001). Crafting a job: Revisioning employees as active crafters of their work. *Academy of Management Review, 26*(2), 179-201.
- Yepes-Baldó, M., Romeo, M., Westerberg, K., & Nordin, M. (2018). Job crafting, employee well-being, and quality of care. *Western journal of nursing research, 40*(1), 52-66.

APPENDIX A

Qualtrics® Survey

CONSENT TO PARTICIPATE IN A RESEARCH STUDY

University of Dallas

TITLE OF PROJECT: State of Flow in workplace

Below is a description of the research procedures and an explanation of your rights as a research participant. In accordance with the policies of the University of Dallas, you are asked to read this information carefully.

The purpose of this study is to measure your perceptions of your job and how you experience your job. Your participation is completely voluntary, and if you begin participation and choose to not complete it, you are free to not continue without any adverse consequences.

If you agree to be in this study, are asked to do the following things:

- Confirm that you are at least 18 years of age.
- Confirm that you voluntarily agree to complete an online multiple-choice survey.
- Be willing to take approximately 3-5 minutes to answer all questions honestly as there are no right or wrong answers.
- Selecting the button that best corresponds to your response after reading each question or statement.
- Scroll down the page to answer all the questions if needed and select NEXT to continue after each page
- Complete the survey in one sitting.

There are no known risks to this study, other than becoming a little tired of answering the questions. If this happens, you are free to take a break and return to the survey to finish it, or, you can discontinue participation without any problems. Potential benefits to this study are: contributing to the research on employee perceptions towards their job.

Because you will not be providing any clues to your identity, you can be assured that all your provided responses to the questions are anonymous. If you need to ask questions about this study, you can contact the principal researcher, Shams Bharwani, or, if you have any questions about your rights as a participant, you may contact the Chair of the University of Dallas IRB, Dr. Gilbert Garza at (972) 721-5366 or garza@udallas.edu.

I have read and understood what has been explained to me. If I choose to participate in this study, I will click “Yes” in the box below and proceed to the survey. If I choose to not participate, I will click “No” in the box.

- Yes, I choose to participate in this study
- No, I will not participate in this study

Do you identify as someone on the autism spectrum?

- Yes
- No

What is your current employment status?

- Full-time
- Part-time
- Other

Work-Related Flow Inventory

Please indicate how often do you experience each of the statements. Please rate each of them on the following scale: 1 = Never, 2 = Almost never, 3 = Sometimes, 4 = Regularly, 5 = Often, 6 = Very often, 7 = Always.

- My work gives me a good feeling.
- When I am working, I forget everything else around me.
- I get my motivation from the work itself, and not from the reward for it.
- I feel happy during my work.
- I get carried away by my work.
- I feel cheerful when I am working.
- I work because I enjoy it.
- I find that I also want to work in my free time.
- I am totally immersed in my work.
- I do my work with a lot of enjoyment.
- When I am working, I think about nothing else.
- When I am working on something, I am doing it for myself.
- I would still do this work, even if I received less pay.

Job Crafting

Please indicate the extent to which you engage in the following behaviors. Please rate each of them on the following scale: 1 = Hardly ever, 2, 3, 4, 5, 6 = Very often.

- Think about how your job gives your life purpose.
- Remind yourself of the importance of your work for the broader community.
- Introduce new work tasks that you think better suits your skills or interests.
- Think about the ways in which your work positively impacts your life.
- Choose to mentor new employees (officially or unofficially).
- Organize or attend work-related social functions.

- Remind yourself about the significance your work has for the success of the organization.
- Make friends with people at work who have similar skills or interests.
- Introduce new approaches to improve your work.
- Change the scope or types of tasks that you complete at work.
- Make an effort to get to know people well at work.
- Organize special events in the workplace (e.g., celebrating a co-worker's birthday).
- Choose to take on additional tasks at work.
- Give preference to work tasks that suit your skills or interests.
- Reflect on the role your job has for your overall well-being.

Work as Meaning Inventory

Please indicate your experience with each of the statements. Please rate each of them on the following scale: 1 = Absolutely Untrue, 2, 3, 4, 5 = Absolutely True.

- I have found a meaningful career.
- I view my work as contributing to my personal growth.
- I understand how my work contributes to my life's meaning.
- I have a good sense of what makes my job meaningful.
- I have discovered work that has a satisfying purpose.
- My work helps me make sense of the world around me.
- The work I do serves a greater purpose.
- I know my work makes a positive difference in the world.
- My work helps me better understand myself.
- My work really makes no difference to the world.

Demographics

What is your gender?

- Male
- Female
- Transgender Male
- Transgender Female
- Bi-gender
- Non-binary
- Gender Variant/Non-Conforming
- Other
- Prefer Not to Answer

What is your age?

- 18 to 24 years
- 25 to 54 years
- 55 years and older

Which best describes your race/ethnicity?

- African American or Black
- American Indian/Other Native American
- Asian or Pacific Islander
- Caucasian or White (other than Hispanic)
- Hispanic
- Other

APPENDIX B

NIH Certificate

Certificate of Completion

The National Institutes of Health (NIH) Office of Extramural Research certifies that **Shamsuddin Bharwani** successfully completed the NIH Web-based training course "Protecting Human Research Participants."

Date of Completion: 09/12/2018

Certification Number: 2926310



APPENDIX C

IRB Approval Letter



IRB00007703

FWA 00016247

IORG0006409

August 25, 2020

Shamsuddin Bharwani
Satish & Yasmin Gupta College of Business
University of Dallas
Irving, TX 75062

RE: IRB approval of proposal # 2020047

Dear Shamsuddin Bharwani:

Thank you for submitting your research proposal for prior approval by the Institutional Review Board (IRB). Your proposal was reviewed under the procedure for expedited review, as it poses minimal risk for participants using surveys with adults. You indicate that steps will be taken to procure informed consent and protect participants' identities. The reviewer(s) recommended approval of your request to complete the research described in your proposal under the conditions stated above.

As you complete your research, please keep in mind that substantive changes to the research method, participant population or project end date will require IRB review, and that any participant injuries or complaints must be reported to the IRB at the time they occur. The IRB policies require that you provide an annual report of the progress of this research project, or a report upon completion, whichever occurs first.

On behalf of the members of the IRB, I wish you success in this project.

A handwritten signature in blue ink, appearing to read "Gilbert Garza".

Gilbert Garza, Ph.D.
IRB Chair

1845 East Northgate Drive, Irving, TX 75062-4736

Appendix D

Abbreviation and Name for Survey Items

Abbreviation	Descriptive Name
ABW1	WOLF-Absorption1
ABW2	WOLF-Absorption2
ABW3	WOLF-Absorption3
ABW4	WOLF-Absorption4
WE1	WOLF-Work Enjoyment1
WE2	WOLF-Work Enjoyment2
WE3	WOLF-Work Enjoyment3
WE4	WOLF-Work Enjoyment4
IWM1	WOLF-Intrinsic Work Motivation1
IWM2	WOLF-Intrinsic Work Motivation2
IWM3	WOLF-Intrinsic Work Motivation3
IWM4	WOLF-Intrinsic Work Motivation4
IWM5	WOLF-Intrinsic Work Motivation5
TC1	JCQ-Task Crafting1
TC2	JCQ-Task Crafting2
TC3	JCQ-Task Crafting3
TC4	JCQ-Task Crafting4
TC5	JCQ-Task Crafting5
CC1	JCQ-Cognitive Crafting1
CC2	JCQ-Cognitive Crafting2
CC3	JCQ-Cognitive Crafting3
CC4	JCQ-Cognitive Crafting4
CC5	JCQ-Cognitive Crafting5
RC1	JCQ-Relational Crafting1
RC2	JCQ-Relational Crafting2
RC3	JCQ-Relational Crafting3
RC4	JCQ-Relational Crafting4
RC5	JCQ-Relational Crafting5
PM1	WAMI-Positive Meaning1
PM2	WAMI-Positive Meaning2
PM3	WAMI-Positive Meaning3
PM4	WAMI-Positive Meaning4
MM1	WAMI-Meaning Making Through Work1
MM2	WAMI-Meaning Making Through Work2
MM3	WAMI-Meaning Making Through Work3
GG1	WAMI-Greater Good Motivation1
GG2	WAMI-Greater Good Motivation2
GG3	WAMI-Greater Good Motivation3