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What Keeps Parents Going? Implicit Theories of Willpower and Well-Being in Parents

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# Contents

## Introduction

Most people are familiar with statements such as "watching children grow up is life's greatest joy" (Hansen, 2012, p. 33). At the same time, we know children to be a source of stress, worry, and fatigue (Hansen, 2012). Both lay beliefs translate into a conviction that parenthood is somehow related to well-being. When looking for scientific evidence, it becomes clear that not only laypeople, but researchers as well, are not in agreement regarding the direction of this relationship (Nelson et al., 2014). A multitude of factors have been identified that help explain this ambiguity. (Nelson et al., 2014).

However, an aspect that has not been considered in this context yet is understanding individual differences in how people respond to high-demand situations such as parenthood. These differences are often rooted in underlying beliefs. Implicit theories of willpower (ITW) refer to the beliefs individuals hold about the nature of their self-control resources, specifically, whether they see willpower as a limited resource that becomes depleted with effort (limited theory) or as an energizing and unlimited capacity (nonlimited theory) (Job et al., 2010). These ITW affect the interpretation of exhaustion, but also well-being in general. Endorsing a limited theory of willpower is associated with lower levels of subjective well-being, particularly in high-demand situations (Bernecker et al., 2017).

This understanding can be especially important for parents, as those with a limited theory of willpower may find it harder to handle the demands of parenthood, leading to increased stress and lower life satisfaction. In contrast, those with a nonlimited theory of willpower may better manage these challenges and maintain higher well-being (Bernecker et al., 2017). Therefore, the first research question this study seeks to answer is how ITW, parenthood, and well-being interact. On a theoretical level, findings could highlight the importance of considering individuals' beliefs when examining the ambiguous link between parenthood and well-being. On a practical level, they could help identify and support those who may struggle more during their transition to parenthood, even before those difficulties occur.

It has been established that those who hold nonlimited beliefs about willpower differ from those who hold limited beliefs in their response to high-demand situations. Furthermore, evidence suggests that willpower beliefs can be manipulated – an indicator that they are not a fixed construct – and that they also change with age (Job et al., 2010, Study 2). Job et al. (2018) have presented findings that older adults are more likely to endorse a nonlimited theory of willpower.

If older adults, who have adjusted to life's demands, believe their willpower is more nonlimited, it is plausible that this also applies to those who have adapted to the demands of parenthood. This proposed adaptive process, however, was not discussed as a possibility by Job et al. (2018); it therefore represents a novel theoretical thought. Hence, a second research question arises: How does adapting to parenthood influence a parent's ITW?

On a theoretical level, such findings could be taken as an indicator that parenthood plays a role in the already established relationship between age and ITW. It would also raise the question whether parents and non-parents differ in their ITW overall. Furthermore, this question could be disconnected from the parenthood context and broadened to compare those who have had to adjust to particularly demanding life events with those who have lived and grown through such an experience. On a more practical level, this would underscore the particular importance of adjustment periods for interventions.

Overall, both research questions aim to broaden our knowledge about how different ITW manifest in everyday life. They also aim to add to the research about parenthood that focuses on the parents themselves, instead of on their children.

## Theoretical Background

### Self-Control and Implicit Theories of Willpower

In order to be able to elaborate on the concept of ITW, it is crucial to first go into detail about self-control. Self-control is defined as the capacity of an individual to alter, modify, change, or override impulses, desires, and habitual responses through deliberate and conscious effort. This capacity affects individuals in many ways. Low self-control, for instance, is associated with a higher prevalence of problematic behaviors such as substance abuse, delinquency, and procrastination. Conversely, the benefits of high self-control can be observed across multiple areas of life, for example, in interpersonal relationships, or the workplace (Hofmann et al., 2014).

The strength model of self-control posits that self-control operates like a muscle, drawing from a finite reservoir of resources that can become depleted with use. Engaging in acts of self-control reduces the available resources, leading to diminished capacity for subsequent self-regulatory efforts, a state termed "ego depletion" (Baumeister et al., 2007). This model suggests that self-control can be temporarily exhausted but can be replenished through rest and can be strengthened over time with regular practice (Friese et al., 2017; Hagger et al., 2010).

Self-control and ego depletion can be illustrated with the help of the Stroop task (Stroop, 1935). In the Stroop task, participants are shown color words where the color of the

font differs from the color written out. They are instructed to name the color of the font, overriding their impulse to say the written-out word, thus exerting self-control (Baumeister et al., 2007). Reaction times and number of mistakes are used as performance indicators of the Stroop task.

Richeson and Shelton (2003), for example, have used the Stroop task to detect ego depletion. Participants in the experimental group completed a task meant to deplete self-control (White participants talking about controversial issues with Black people) while participants in the control group were given a non-depleting task (White participants talking about controversial issues with other White people). Afterwards, mean reaction times in the Stroop task were calculated. In order for the authors to be able to interpret the resulting reaction time as self-control ability, not merely the ability to react quickly, participants completed an additional task similar to the Stroop task. In this task, however, the words shown in different colored fonts were not color words but simply Xs, taking away the part of the Stroop task requiring self-control. The mean reaction times in this task were subtracted from the mean reaction times in the Stroop task. As predicted by the ego-depletion effect, participants in the experimental group performed significantly worse in the Stroop task compared to participants in the control group, even when controlling for their reactivity.

Despite its popularity, the ego-depletion effect has been the center of some debate. While many studies were able to find ego-depletion in different contexts (e.g. Fischer et al., 2008; Vohs et al., 2005), some were not able to replicate the effect (e.g. Martijn et al., 2002; Tice et al., 2007). One meta-analysis conducted to address these ambiguous findings reported the statistical significance of the ego-depletion effect while drawing an eye to the heterogeneous effect sizes that were found (Hagger et al., 2010). Another meta-analysis, which specifically considered the publication effect, was not able to find a significant effect, urging researchers to first establish the existence of the ego-depletion effect before expanding on the strength model of self-control any further (Carter & McCullough, 2014). This lack of clarity raises the question of whether any variables have not yet been considered that might be able to explain this ambiguity.

Job et al. (2010) addressed this question by taking lay beliefs about willpower into consideration. People differ in the extent of their self-control capacities, their so-called willpower. However, they also differ in their ITW, meaning their belief about willpower being either a limited or a nonlimited resource (Job et al., 2010). These ITW are shown to moderate the effects of ego-depletion as proposed by the strength model of self-control. After a self-control task, like the Stroop task described earlier, participants with a limited theory of

willpower showed ego-depletion which resulted in a lower performance in a second task. Participants with a nonlimited theory of willpower showed no signs of ego-depletion or decrease in performance (Job et al., 2010, Study 1). These ITW serve as a psychological framework that can be used to explain individuals' performance in self-control tasks, but also how they interpret feelings of exhaustion, and whether they persist or withdraw when facing ongoing demands (Job et al., 2010).

ITW can not only be measured but also experimentally manipulated. Job et al. (2010; Study 2) successfully manipulated ITW by presenting participants with a biased questionnaire designed to foster agreement with either a limited-resource or a nonlimited-resource view of willpower. Participants responded to items that framed mental exertion as either exhausting or energizing, depending on the condition, thereby inducing a specific ITW. On one hand, this underlines the causal relationship ITW have with self-control performance. On the other hand, it suggests that ITW are not a fixed characteristic (Job et al., 2010, Studies 2 and 3).

The difference between a limited and a nonlimited theory of willpower is especially clear during times that demand high self-regulation (Job et al., 2010, Study 4), which is where the negative effects of a limited theory of willpower are more easily observed. Under such conditions, a limited theory of willpower is shown to be associated with more procrastination, worse eating and spending habits (Job et al., 2015), lower levels of life satisfaction, affective and subjective well-being (Bernecker et al., 2017).

With the knowledge that ITW are a flexible characteristic, that they can be manipulated, and that endorsing a nonlimited theory of willpower can be beneficial in different domains of everyday life, antecedents of a nonlimited theory of willpower have become of scientific interest. Cultural differences, for instance, have received attention during the search for such antecedents. Many studies about ITW have been conducted with Western samples, yet studies in more collectivistic societies show intriguing differences (Sun et al., 2019). In self-control tasks where Westerners show ego-depletion, a reverse ego-depletion effect can be observed in Indian individuals. This reverse effect can be attributed to the tendency of Indian individuals to endorse a nonlimited theory of willpower (Savani & Job, 2017). Similarly, Chinese students believe significantly less in the depletion of mental resources compared to US American students, however, significantly more in the depletion of resisting temptation (Sun et al., 2019). This indicates that the cultural context individuals grow up in shapes their lay beliefs about willpower.

Furthermore, goal motivation has been investigated as an antecedent of ITW. Through a series of five studies employing correlational, longitudinal, and experimental designs, researchers were able to draw a causal link between autonomous goal motivation and the endorsement of a nonlimited theory of willpower. When compared to individuals striving towards goals dictated by others or required by the situation, individuals who engage in autonomous goal striving are more likely to perceive willpower as a nonlimited resource. This perception is mediated by the enhanced vitality they experience (Sieber et al., 2019).

Lastly, research indicates that as individuals age, they are more likely to adopt a nonlimited theory of willpower. Despite a decline in health, which is related to the endorsement of a more limited theory of willpower, older individuals experience more autonomy when faced with demanding tasks in their everyday life. This increase in autonomy is shown to outweigh the increase in physical challenges and therefore poses the likely explanation for the link between a nonlimited belief of willpower and higher age. This explanation is also compatible with findings that older individuals have improved their goal selection – focusing on goals within their control – and goal pursuit. (Job et al., 2018). Irrespective of the mechanism at work, age is established as an additional antecedent of a nonlimited theory of willpower.

Since the relationship between ITW and well-being has now been established (Bernecker et al., 2017), which is an essential part of this study, the construct of well-being will be further elaborated upon subsequently.

**Well-Being**

The topic of well-being has become an emerging interest for psychologists, with the field of positive psychology making a major contribution to this development (Seligman & Csikszentmihalyi, 2000). Although the term *well-being* is widely used in the research world and among the general population, there remains no universally accepted definition, aside from a general agreement on its multifacetedness. Defining well-being is challenging due to the varying understandings of well-being across research fields, age groups, and cultures (Jarden & Roache, 2023).

To gain a clearer understanding of well-being, it is helpful to examine the various types of well-being that can be differentiated. From a philosophical standpoint, well-being is often described through two main perspectives, hedonic and eudaimonic. The hedonic perspective emphasizes subjective experiences of pleasure, happiness, and life satisfaction, while the eudaimonic perspective focuses on meaning, autonomy, and the realization of personal potential. This tradition has its roots in ancient Greece, Aristippus representing the

hedonic, Aristotle the eudemonic perspective, and continues to shape contemporary research (Brulé & Maggino, 2017).

In the field of psychology, there are many ways in which to approach the topic of well-being. One approach is to distinguish between objective and subjective well-being. Objective well-being refers to measurable aspects of an individual's living conditions and capabilities, such as income, health status, education, and social participation. These variables can be directly observed and quantified. Subjective well-being, on the other hand, pertains to individuals' personal evaluations and emotional judgments about their overall life quality, including feelings of happiness, satisfaction, and fulfillment. While objective well-being provides an external assessment of an individual's living conditions, subjective well-being captures the internal assessment of those conditions (Paim, 1995; Western & Tomaszewski, 2016).

According to one conceptualization of subjective well-being, it consists of three independent components: life satisfaction, positive experiences, and negative experiences. Within this framework, subjective well-being is influenced by both top-down effects, such as personality traits, and bottom-up effects, such as income. These components collectively contribute to an individual's overall sense of well-being, which in turn positively affects future behavior (Diener, 2013).

A complementary perspective of subjective well-being distinguishes between affective and cognitive dimensions. Affective well-being refers to the frequency and intensity of emotional experiences, characterized by the presence of positive emotions and the relative absence of negative emotions (Hofmann et al., 2014). The Multidimensional Mood Questionnaire, an instrument widely used to assess affective well-being, conceptualizes it as comprising three bipolar dimensions: pleasantness (good mood – bad mood), alertness (alert – tired), and serenity (calm – restless) (Hinz et al., 2012). These emotional states are typically transient and responsive to immediate environmental or social contexts. In contrast, cognitive well-being involves a more stable and evaluative judgment regarding one's life as a whole, encompassing assessments of life satisfaction and the perceived attainment of life goals. When referring to happiness, lay people most often mean affective or cognitive well-being (Hofmann et al., 2014).

Yet another approach is to differentiate between general well-being, which encompasses satisfaction with all domains of life, and domain-specific well-being, for instance, academic satisfaction (Lodi et al., 2022; Paim, 1995). Subsequently, the focus of the

study will remain on general, subjective well-being, including its cognitive and affective dimensions. This is the case due to the questionnaire covering those areas of well-being.

Returning to the established construct of self-control, associations with both of these dimensions can be observed. Specifically, higher levels of self-control are positively correlated with greater positive affect and increased life satisfaction. The association with positive affect may be partially explained by a reduction in goal conflict that individuals with high self-control tend to experience less frequently. The association with life satisfaction appears to be partially mediated by positive affect. In summary, high self-control may contribute to reduced goal conflict, which in turn enhances positive affect, an important factor of overall life satisfaction (Hofmann et al., 2014).

As previously mentioned, ITW are associated with well-being as well. Research indicates that individuals' beliefs about their willpower, specifically, whether they see it as a limited or nonlimited resource, play a significant role in their overall subjective well-being. Individuals who endorse a more limited belief about willpower experience lower, those who endorse a more nonlimited belief a higher subjective well-being. This relationship can be explained by the way these beliefs influence goal striving: individuals who view willpower as limited are more easily overwhelmed by self-control tasks, leading to diminished motivation and a higher likelihood of giving up. In consequence, they make less progress toward personal goals, which ultimately lowers their overall sense of well-being. In contrast, those who believe that willpower is nonlimited are more likely to continue striving and making consistent progress towards their personal goals. This goal progress enhances positive emotions and life satisfaction. Hence, the ITW influence one's self-control capacity, which in turn impacts the degree of personal goal progress, which ultimately shapes subjective well-being, making it a top-down influence (Bernecker et al., 2017; Diener, 2013; Sieber et al., 2019).

There has been much debate about how well-being develops over the lifespan. In this context, it is important to consider both age and life events as influencing factors. A meta-analysis focusing on subjective well-being and its changes throughout life found an overall positive trend for the component life satisfaction, and a negative trend for both positive and negative affect. However, these trends are not linear and show a pattern of ups and downs that varies distinctly between the three components of subjective well-being (Buecker et al., 2023).

Moreover, life events can have a significant impact on well-being. They can be examined through two main perspectives: the stress and the developmental perspective. The

stress perspective views life events as stressors that disrupt daily routines, encompassing both negative and positive occurrences, such as marriage or job loss. The developmental perspective focuses on life events as transitions that necessitate new behavioral adaptations, which can occur gradually or abruptly. Findings from a meta-analysis indicate that life events have varying impacts on both affective and cognitive well-being, with the latter often experiencing stronger and more consistent effects across different situations. Importantly, the desirability of an event does not necessarily correlate with its impact on subjective well-being. (Luhmann et al., 2012).

Building upon the discussion of how life events influence well-being, it is equally important to consider how well-being influences life events. Research indicates that higher levels of life satisfaction are associated with an increased likelihood of positive life outcomes, such as marriage or childbirth, and a decreased likelihood of negative events, including marital separation and job loss. These associations persist even after controlling for various demographic variables. Furthermore, the underlying mechanisms appear to be more temporary than stable, meaning that an individual's momentary state of well-being can actively shape their forthcoming life events. This highlights the active role that an individual's affective state plays in influencing significant life transitions and, therefore, their life course development overall (Luhmann et al., 2013).

In summary, well-being is not as easily defined as it seems, and many different types of well-being can be distinguished. This study will examine the participants' overall evaluation of their own well-being, their general, subjective well-being.

Well-being is, amongst others, related to self-control, ITW, age, and life events. One such life event, namely parenthood, makes up the third main construct of this study and will therefore be the focus of the subsequent section.

**Parenthood**

Parenthood represents one of the most significant life transitions in early adulthood. Despite a global decline in birth rates over the last decades, most adults will experience parenthood at some point in their lives (Martins, 2019; Skirbekk, 2022). Thus, it is considered a normative life event (Wrzus et al., 2013). Together with marriage, it is regarded as the happiest event of their lives by most individuals (Berntsen et al., 2011)

When individuals pursue parenthood, they are driven by both autonomous and controlled motivations. Autonomous motivation involves a genuine interest, personal meaningfulness, and a sense of satisfaction derived from caring for and nurturing a child. It represents the intrinsic motivation to become a parent, reflected in an internalized desire to

find fulfillment through parenthood. In contrast, controlled motivation is characterized by external pressures, societal expectations, or the need to maintain social approval. This external motivation may stem from a desire to meet the standards of others or to avoid negative feelings such as guilt or shame. These different motivations influence the decision to become a parent, and, in turn, parental engagement and parenting outcomes later on (Jungert et al., 2015).

Subsequently, the focus shifts from the motivation to become a parent to actually becoming a parent. The transition to parenthood can be viewed as a particularly demanding period of time, with some describing it as “living on the edge of one's capacities” (Martins, 2019; p. 229). It is associated with heightened emotional and physical stress levels, as individuals navigate new routines, caregiving demands, and role expectations. Adjustments in various aspects of life are necessary, including lifestyle and personal identity. Overall, this period is marked by new responsibilities, challenges, and demands (Martins, 2019; Van Scheppingen et al., 2018).

While being a parent has traditionally been seen as a demanding yet rewarding role, it has also been affected by societal shifts. In today's society, parents face increased demands marked by higher expectations of close involvement and emotional dedication to raising children. These demands include constantly monitoring children’s development, creating supportive and protective environments, and dedicating significant time and resources. This concept, termed intensive parenting, explains how society pressures parents into such engaged and attentive parenting, which can also create considerable psychological and emotional stress for parents (Novoa et al., 2022).

These pressures and demands differ from parent to parent and from family to family. One determining factor is family size. Increasing family size imposes additional demands on parents by requiring the allocation of limited resources, such as time and energy, across multiple children. As the number of children grows, these parental resources become increasingly stretched (Downey, 1995).

Another factor worth mentioning is the age of the youngest child. This age determines the so-called family life stage. The early family life stages, having a baby or a toddler (Porat-Zyman et al., 2017), are accompanied by increased childcare responsibilities. During the later family life stages, as the child enters their school career and eventually moves out of the parental home, these responsibilities decrease (Erickson et al., 2010).

While this, along with individual differences between children, determines the total amount of necessary childcare, it does not indicate how childcare is divided between parents.

Therefore, it is important to consider a parent's relative share of childcare when assessing the demands of parenthood, especially since a greater share of childcare is linked to increased psychological strain. On one hand, the 2015 UK Time Use Survey showed that many fathers reported no time spent on childcare. On the other hand, the number of single-parent families is steadily increasing. Although both situations involve parenthood, the demands and psychological strain faced by the parents are hardly comparable. Given the ongoing gender disparities in childcare contributions and the rising prevalence of single parenthood, the relative share of childcare contributions should be taken into account (Government Equalities Office, 2021; Kühn et al., 2025).

So far, the heightened stress and increased demands of parenthood have been the focus of this subsection. However, as parents adapt and adjust to their new roles and responsibilities, many parents report experiencing growth in self-awareness, resilience, and relational capacities. This personal growth is influenced by factors such as parental self-efficacy and attachment-related tendencies (Porat-Zyman et al., 2017).

Additionally, adapting to parenthood can have effects on the parent's self-control. Becoming a parent often necessitates increased self-regulatory behavior to manage the demands of caring for a newborn and balancing other social roles. Initially, this transition may lead to declines in self-control due to overwhelming new responsibilities. Over time, however, it can result in improvements as parents adapt and practice self-regulation more frequently, in line with the strength model of self-control (Baumeister et al., 2007; Van Scheppingen et al., 2018).

Knowing about the effects of parenthood on self-control, the question of possible effects of parenthood on ITW arises. However, this has not yet received any attention from researchers. Nevertheless, the previously established areas where parents experience personal growth follow a similar pattern. An initial period of decline in the respective area is succeeded by a period of adjustment. In the long term, this leads to a positive development in said area (Porat-Zyman et al., 2017; Van Scheppingen et al., 2018). If one were to speculate, it is plausible that ITW, if affected by parenthood, follow this pattern as well.

Lastly, parenthood can have a significant influence on an individual's well-being. During the transition to parenthood, heightened fatigue, sleep disturbances, and emotional exhaustion are frequently reported, which negatively affect well-being (Martins, 2019). When examining the overall relationship between parenthood and well-being, not just the initial transition period, findings are less conclusive. Research focusing on the positive relationship between parenthood and well-being mentions need satisfaction, positive emotional

expression, and engagement in social roles as mediators. Contrary research, on the other hand, has identified factors such as increased negative emotions, financial strain, sleep disturbances, and marital difficulties. They serve as moderators that exacerbate stress and diminish overall life satisfaction among parents. Additionally, demographic factors such as parental age and socioeconomic status play a role in the relationship between parenthood and well-being. Therefore, it becomes increasingly clear how difficult it is to integrate and weigh all these factors, and thus, how important it is to investigate this relationship and additional factors further (Nelson et al., 2014).

## Research Questions and Hypotheses

As previously mentioned, this study attempts to answer two research questions: What is the role of ITW in the relationship between parenthood and well-being, and how does adapting to parenthood influence a parent's ITW? Based on these research questions and the presented literature summarized in the following passages, five hypotheses have been proposed.

### *Hypothesis 1*

Previous research found a link between subjective well-being and ITW. Specifically, individuals who leaned more toward a nonlimited understanding of willpower showed higher subjective well-being (Bernecker et al., 2017). Differences between individuals with a limited versus a nonlimited theory of willpower are especially apparent in times of high demand (Job et al., 2010; Study 4). Thus, they should be obvious during parenthood, a time when demands are consistently high (Martins, 2019). In line with these findings, I hypothesize: *The more in agreement parents are with a nonlimited theory of willpower, the better their well-being (H1).*

### *Hypothesis 2*

When demands for a parent increase, as is the case with having multiple children, differences between their ITW should be more apparent (Downey, 1995; Job et al., 2010; Study 4). This should entail the differences in parental well-being (Bernecker et al., 2017). Therefore, I hypothesize: *The positive association between a nonlimited theory of willpower with well-being in parents is moderated by the number of children this parent has. Specifically, a higher number of children increases the association between a nonlimited theory and well-being(H2).*

### *Hypothesis 3*

In line with the previous hypothesis, parental demands are also higher during the earlier family life stages (Erickson et al., 2010). The differences in parents' well-being

predicted by their beliefs about willpower should therefore be more apparent in those family life stages (Bernecker et al., 2017; Job et al., 2010; Study 4). Therefore, I hypothesize: *The positive association between a nonlimited theory of willpower with well-being in parents is moderated by the age of their youngest child. Specifically, a younger age increases the association between a nonlimited theory and well-being (H3)*.

***Hypothesis 4***

Demands experienced are dependent on the relative share of childcare. Single parenthood is on a constant rise, and even among two-parent households, significant gender gaps are present, which underlines that demands may vary depending on the circumstances that come with parenthood (Government Equalities Office, 2021; Kühn et al., 2025). Therefore, I hypothesize: *The positive association between a nonlimited theory of willpower with well-being in parents is moderated by the amount of child-caring the parent is involved in. Specifically, a higher amount of child-caring increases the association between a nonlimited theory and well-being (H4)*.

***Hypothesis 5***

Parenthood influences different personality traits and skills. During the transitional phase, this impact is mostly negative. After adjusting to the changes caused by parenthood, a positive effect can be seen (Porat-Zyman et al., 2017; Van Scheppingen et al., 2018). Believing willpower to be a limited resource is linked to various negative outcomes, while believing it to be unlimited is associated with positive outcomes (Bernecker et al., 2017; Job et al., 2015). Therefore, I hypothesize: *The older the oldest child, the more parents agree with a nonlimited theory of willpower (H5).*

## Method

### Procedure

The present study was conducted with the help of a cross-national research project led by Dr. Krishna Savani, a professor at the Faculty of Management and Marketing at the Hong Kong Polytechnic University. The aim of the research project was to examine cultural variations in values, beliefs, and behaviors across countries.

The entire research project was conducted using Prolific; participation was therefore paid. Eligible participants, aged 18 years or older, were asked to complete a questionnaire designed to measure their values, beliefs, and behaviors. The questionnaire required approximately 10 to 15 minutes to be completed. Participation was voluntary; participants were informed that they could withdraw from the study at any time without any penalty or disadvantage and contact Dr. Krishna Savani for any questions or concerns. They were also

provided with contact information for the PolyU Ethics Committee in case of complaints regarding the study's conduct. Participants were assured that the information they provided would be treated as research data and accessed only by the researcher, his team, and collaborators. All participants provided informed consent, acknowledging their understanding of the study's procedures, risks, and benefits, as well as their right to privacy and confidentiality.

The data used in the present study resulted from the Austrian and Swiss versions of the described questionnaire. In both countries, the questionnaire was presented in German and matched the questionnaires conducted in the other countries, with the addition of 4 parenthood-related items at the very end of the questionnaire. The data was collected in the first half of the year 2025.

**Sample**

In total, $n = 625$ participants filled out the questionnaire. Excluded were those who did not fill out the two ITW scales ($n = 224$) and the well-being scale ($n = 38$). Additionally, those who did not indicate their age ($n = 11$) or indicated an age below 18 were cut from the sample ($n = 4$). This was done because participants had to be 18 to participate in the study and thus lied about their age on this question.

In the variables concerning parenthood, many missing values and illogical answers were observed. Reasons for this are discussed in the *Limitations* subsection. To reduce unnecessary case exclusion and make full use of available information, certain missing values were addressed using consistent logical imputation. Firstly, if the number of children was not reported but both the age of the youngest and the oldest child were provided, the number of children was inferred as follows: If the age of the youngest child was equal to the age of the oldest child, the number of children was coded as 1. If the age of the youngest child did not equal the age of the oldest child, the number of children was coded as 2. Secondly, in cases where the age of the oldest child was missing but the age of the youngest child was available, the age of the youngest child was used to impute the age of the oldest child. Subsequently, the cases in which the number of children was still missing were then excluded as well ($n = 18$). This was done because all participants had to be parents for their answers to be used in this study.

After these imputations, the illogical cases were addressed. If the age of their oldest child, as indicated by the participant, when subtracted from the participant's age, resulted in a number lower than 15, those cases were also excluded ($n = 9$). Lastly, the cases in which the age of the youngest child was higher than the age of the oldest child were omitted ($n = 7$).

Finally, after careful observation of the remaining cases, one additional case was excluded. The participant indicated having nine children, all aged nine years old. All variables mentioned here are described in the following *Measures* section in their entirety.

The exclusion of the previously described cases resulted in a final sample of $n = 313$. The sample consisted of 50.8 % Austrians and 48.6 % Swiss; two participants did not give this information. The participants' ages ranged from 18 to 80 ($M = 46.20$; $SD = 15.41$). 46.6 % ($n = 147$) described themselves as female, 52.7 % ($n = 165$) as male, and two participants described themselves as non-binary.

Since all participants were parents at the time of the study, it is essential to mention the additional parental variables. On average, participants reported having $M = 1.58$ children ($SD = 1.16$), with the number of children ranging from one to 15. The average age of the youngest child was $M = 12.57$ years old ($SD = 13.98$), while the oldest child was on average $M = 14.62$ years old ($SD = 15.13$). On average, the age gap between the youngest and the oldest child was $M = 2.04$ years ($SD = 3.49$). Participants reported taking on average $M = 46.80\%$ ($SD = 35.29\%$) of the overall childcare responsibilities. The mean age at which participants became parents was $M = 31.59$ years old ($SD = 10.59$).

## Measures

In order to analyze the hypotheses of the present study, the participants' ITW, their well-being, and their parenthood status, as well as further parenthood-related variables, were measured. In addition, sociodemographic and work-related demographic data were collected to analyze the sample and recognize possible irregularities.

### *Implicit theories of willpower*

To measure the participants' ITW, the German translation of the Implicit Theories About Willpower for Strenuous Mental Activities Scale (ITW-unipolar) was used. The ITW-unipolar consists of six items, three of which reflect a limited theory of willpower. A sample item for this reads as following: "After a strenuous mental activity your energy is depleted and you must rest to get it refueled again." ("Nach einer anstrengenden mentalen Tätigkeit ist meine Energie erschöpft und ich muss mich erholen, um sie wieder aufzutanken."). The remaining three items reflect a nonlimited theory of willpower with a sample item reading: "Your mental stamina fuels itself; even after strenuous mental exertion you can continue doing more of it" ("Meine Willenskraft ist unerschöpflich. Auch nachdem ich mich eine Zeit lang auf Etwas konzentriert habe, kann ich mit etwas Anspruchsvollem fortfahren."). All six items were answered on a seven-point Likert scale ranging from 1 (stimme überhaupt nicht zu; strongly disagree) to 7 (stimme ausgesprochen zu; strongly agree). This differed from the

original scale developed by Job et al. which used a six-point Likert scale. The three items reflecting the limited theory of willpower were reversed (Napolitano & Job, 2018), and a mean score was calculated for each participant (Job et al., 2010). Thus, higher scores reflected a higher agreement with a nonlimited theory of willpower. All items were originally presented in German, the English translations were taken from the version published by Job et al. (2010). A complete list of the items can be viewed in the *Appendix B*. In this sample, the ITW-unipolar showed acceptable internal consistency with a Cronbach's alpha of $\alpha = .77$ (Cronbach, 1951).

An additional measure of ITW (ITW-bipolar) was adopted in the questionnaire. This was done to include items that measure the energizing effects of exerting willpower rather than just the lack of ego depletion, thus extending the pole of nonlimited beliefs.

This measure consists of three items that are answered on a scale ranging from 1 to 20. A sample item for this reads: "Imagine working on a very difficult task that requires your full focus for one hour. Do you believe that afterwards you would feel tired and sleepy, or rather fresh and energized? On the following scale, 1 stands for feeling more tired and sleepy after an hour of focused work on a difficult task, while 20 stands for feeling fresher and more energized. Please choose a point on the scale that reflects your personal belief." ("Stellen Sie sich vor, Sie arbeiten an einer sehr schwierigen Aufgabe, die Ihre volle Konzentration für eine Stunde erfordert. Glauben Sie, dass Sie sich danach müde und schläfrig fühlen würden, oder eher frisch und energiegeladen? Auf der folgenden Skala bedeutet 1, dass Sie sich nach einer Stunde konzentrierter Arbeit an einer sehr schwierigen Aufgabe müder und schläfriger fühlen würden, und 20 bedeutet, dass Sie sich frischer und energiegeladener fühlen würden. Bitte wählen Sie einen Punkt auf der folgenden Skala entsprechend Ihrer persönlichen Überzeugung"). All items in this section were originally presented in German, the English translations were taken from the version published by Savani and Job (2017). A complete list of the items can be viewed in *Appendix B.* In this sample, the scale showed acceptable internal consistency with a Cronbach's alpha of $\alpha = .76$ (Cronbach, 1951).

***Well-being***

The German translation of the World Health Organization-Five Well-Being Index (WHO-5) was employed to assess participants' subjective psychological well-being. The WHO-5 consists of five items that evaluate various aspects of well-being, such as feeling cheerful, calm, and engaged in daily life. A sample item reads: "I have felt calm and relaxed" ("Ich habe mich ruhig und entspannt gefühlt."). Participants rated their experiences over the past two weeks on a six-point Likert scale, ranging from 1 (die ganze Zeit; all the time) to 6

(zu keinem Zeitpunkt; at not time), with lower scores indicating better mental health. In the original WHO-5, experiences were rated on a six-point Likert scale, ranging from 0 (zu keinem Zeitpunkt; at no time) to 5 (die ganze Zeit; all of the time), with higher scores indicating better mental well-being. Therefore, mean scores were calculated and reversed. Hence, in the final data set, higher scores reflected a better mental well-being, as intended by the original authors. Since the items of the WHO-5 were presented in German, the English translations presented above were taken from the English version published by the World Health Organization (2024). A complete list of the items can be viewed in *Appendix B*. In this sample, the WHO-5 showed excellent internal consistency with a Cronbach's alpha of $\alpha = .90$ (Cronbach, 1951).

***Parenthood***

Due to a lack of appropriate scales, the different parenthood variables were measured with items created specifically for the purpose of this study. All items were administered in German and are stated in parentheses in the following sections. The participants' number of children was measured by asking "How many children do you have (including biological, adoptive and step children)?" („Wie viele Kinder haben Sie? (Inkludieren Sie hierbei biologische, Adoptiv- und Stiefkinder")), which the participants answered by stating the respective number. Only numbers ranging from 1 to 15 were available. Participants who had no children were intended to skip this question and the following three questions. Reasons for this are discussed in the Limitations subsection.

The required childcare amount was measured via the age of the youngest child. Parents were asked: "What is the age of your youngest child?" ("Wie alt ist Ihr jüngstes Kind?"). The length of the parents' parenthood was measured via the age of the oldest child. Parents were asked: "What is the age of your oldest child?" ("Wie alt ist Ihr ältestes Kind?"). Both questions were answered by indicating the respective age as a whole number.

The percentage of childcare was measured by asking "What percent of the responsibility of raising your children falls upon you? Please write only a number in box below ranging from 0 to 100." („Wieviel Prozent der Verantwortung für die Kindererziehung liegt Ihrer Einschätzung nach bei Ihnen? Geben Sie den Prozentsatz als Zahl zwischen 0 und 100 in das untenstehende Feld ein."). All items were originally presented in German and translated into English by the author for the purpose of this study.

**Statistical Analyses**

In order to test H1 and H5, linear regressions were conducted; H2, H3, and H4 were analyzed using moderation analyses. Since two different scales were used to measure ITW,

all hypotheses were tested with both scales. The results for each scale are marked as ITW-unipolar and ITW-bipolar, respectively. Before conducting the moderator analyses, the variables were centered.

H3 and H5 involve variables related to age. Older age has previously been linked to a nonlimited theory of willpower (Job et al., 2018). However, H3 and H5 proposed links with the age of the youngest child and the age of the oldest child, respectively, not with the parents' age. Therefore, the parents' age could act as a confounder. Consequently, in addition to the respective statistical analyses, these hypotheses were also tested controlling for the parents' age. It is clearly stated which results correspond to the analyses in which the parents' age is controlled for.

## Results

All analyses were conducted using RStudio Version 2025.09.0 (RStudio Team, 2025). Before the hypothesis testing, different plots were examined to ensure that the prerequisites for the planned statistical analyses were met. Histograms for the residuals of the linear models of all hypotheses were created, showing a normal distribution. All histograms can be viewed in *Appendix C.* Additionally, *Standardized Residuals vs. Fitted Values* plots were generated for said linear models. All plots can be found in *Appendix D.* No patterns were visible; thus, homoscedasticity of the data was assumed.

*Table 1* shows the means and standard deviations of all variables mentioned in the hypotheses, as well as the correlations between those variables. It is rather unsurprising that the two ITW measures and the two parenthood-related variables covering the children's ages significantly correlate. More interestingly, both well-being and childcare percentage variables significantly correlate with every other measure. Lastly, *Table 1* shows significant correlations between the number of children and every other parenthood-related variable.

### Hypothesis 1

To examine the relationship between parents' ITW and their well-being, a linear regression analysis was performed. The predictor variable was the ITW, with higher mean scores indicating stronger agreement with a nonlimited theory of willpower. The outcome variable was well-being, with higher mean scores representing better well-being. A positive standardized regression coefficient was hypothesized, suggesting that greater agreement with a nonlimited theory of willpower would be associated with better well-being.

**Table 1**

*Means, standard deviations, and correlations*

| Variable | *M* | *SD* | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|---|---|
| 1. ITW-unipolar | 3.82 | 0.94 | | | | | | |
| 2. ITW-bipolar | 9.00 | 3.83 | .51** | | | | | |
| 3. Well-being | 3.92 | 1.06 | .37** | .21** | | | | |
| 4. Number of children | 1.58 | 1.16 | .07 | .06 | .14* | | | |
| 5. Age of the youngest child | 12.57 | 13.98 | .06 | -.05 | .13* | .16** | | |
| 6. Age of the oldest child | 14.62 | 15.13 | .07 | -.05 | .14* | .29** | .97** | |
| 7. Childcare percentage | 46.80 | 35.29 | .16** | .19** | .13* | .22** | .11* | .16** |

*Note. M* and *SD* are used to represent mean and standard deviation, respectively. * indicates $p < .05$. ** indicates $p < .01$.

The ITW measured with the ITW-unipolar significantly predicted well-being, $b$ = 0.42, $SE$ = 0.06, $t(311) = 7.06$, $p < .001$, 95% CI [0.30, 0.54], explaining 13.8% of its variance ($R^2 = .138$, adjusted $R^2 = .136$). The ITW measured with the ITW-bipolar also significantly predicted well-being, $b$ = 0.06, $SE$ = 0.02, $t(311) = 3.69$, $p < .001$, 95% CI [0.03, 0.09], explaining 4.2% of its variance ($R^2 = .042$, adjusted $R^2 = .039$).

Irrespective of the scale used to measure ITW, the results suggest that parents' ITW predicts their well-being. Higher ITW scores were associated with higher well-being, matching the hypothesized direction; thus, H1 is supported.

**Hypothesis 2**

A moderation analysis was performed to test whether the number of children moderated the positive relationship between ITW and well-being. In line with H1, ITW functioned as the predictor, well-being as the outcome variable. The number of children served as the moderator. Both predictor and moderator variables were centered before the analysis. It was hypothesized that a higher number of children would result in a stronger positive association, which would be reflected in a positive standardized regression coefficient for the interaction of the ITW and the number of children.

The interaction between the ITW measured with the ITW-unipolar and the number of children did not significantly predict well-being, $b$ = -0.01, $SE$ = 0.06, $t(309) = -0.18$, $p$ = .857, 95% CI [-0.12, 0.10], nor did the interaction when measured with the ITW-bipolar and the number of children, $b$ = 0.02, $SE$ = 0.02, $t(309) = 1.26$, $p$ = .209, 95% CI [-0.01, 0.06]. Additional values can be taken from *Table E3* in *Appendix E*.

The results suggest that the number of children does not moderate the positive association between parents' ITW and their well-being, irrespective of the scale used to measure ITW; thus, H2 is not supported.

**Hypothesis 3**

A second moderation analysis was performed to test whether the age of the youngest child significantly moderated the positive association between parents' ITW and well-being. Predictor and outcome variable match H2, the age of the youngest child served as the moderator variable. Just as they were for H2, the predictor and moderator variables were centered. It was hypothesized that the positive association between ITW and well-being would be stronger the lower the age of the youngest child. This would be reflected in a negative standardized regression slope for the interaction of the moderator variable and the ITW.

The interaction between ITW measured with the ITW-unipolar and the age of the youngest child was significant, $b = 0.009$, $SE = 0.004$, $t(309) = 2.17$, $p = .031$, 95% CI [0.001, 0.017]. Simple slopes analyses showed that ITW-unipolar significantly predicted well-being at low (- 1 SD), mean, and high (+ 1 SD) age of the youngest child. The association was weakest when the age of the youngest child was low, $b = 0.27$, $SE = 0.09$, $t = 3.18$, $p = .002$, 95% CI [0.09, 0.45], and strongest when the youngest child was older, $b = 0.52$, $SE = 0.08$, $t = 6.76$, $p < .001$, 95% CI [ 0.36, 0.68]. This is visualized in *Figure* 1. The nonsignificant region identified by the Johnson-Neyman analysis fell largely outside the observed values of the moderator, suggesting that, within the sample, the positive association between ITW-unipolar and well-being was robust across all ages of the youngest child. The interaction remained significant even when controlling for the parents' age, $b = 0.009$, $SE = 0.004$, $t(308) = 2.16$, $p = .032$, 95% CI [0.001, 0.016].

The interaction with the age of the youngest child was also significant when ITW was measured with the ITW-bipolar, $b = 0.003$, $SE = 0.001$, $t(309) = 2.95$, $p = .003$, 95% CI [0.001, 0.005]. Simple slopes analyses indicated that with this measurement, however, ITW did not significantly predict well-being at low (- 1 SD) age of the youngest child, $b = 0.10$, $SE = 0.02$, $t = 0.41$, $p = .680$, 95% CI [-0.03, 0.05]. In contrast, ITW-bipolar significantly predicted well-being at the mean age of the youngest child, $b = 0.06$, $SE = 0.02$, $t = 3.66$, $p < .001$, 95% CI [0.03, 0.09], and at high (+ 1 SD) age of the youngest child, $b = 0.10$, $SE = 0.02$, $t = 4.86$, $p < .001$, 95% CI [0.06, 0.14]. This pattern indicates that the association between ITW-bipolar and well-being strengthened as the age of the youngest child increased, which is visualized in *Figure 2*. The nonsignificant region identified by a Johnson-Neyman analysis fell mostly outside the observed values of the age of the youngest child, however less than when the ITW-unipolar was used. Still, this suggests that within the sample the positive association between ITW-bipolar and well-being was robust for most ages. Just like it did with the ITW-unipolar, the interaction was also significant when the parents' age was controlled for, $b = 0.003$, $SE = 0.001$, $t(308) = 2.88$, $p = .004$, 95% CI [0.001, 0.005]. Additional values for both measurements are shown in *Table E4* in *Appendix E*.

The results suggest that the age of the youngest child moderates the positive association between parents' ITW and well-being. However, this association, irrespective of the scale used to measure ITW or whether age was controlled for, strengthened as the age of the youngest child increased. This is not in line with the hypothesized direction. Thus, the results do not support H3.

**Figure 1**

*Interaction between ITW-unipolar and age of the youngest child predicting well-being*

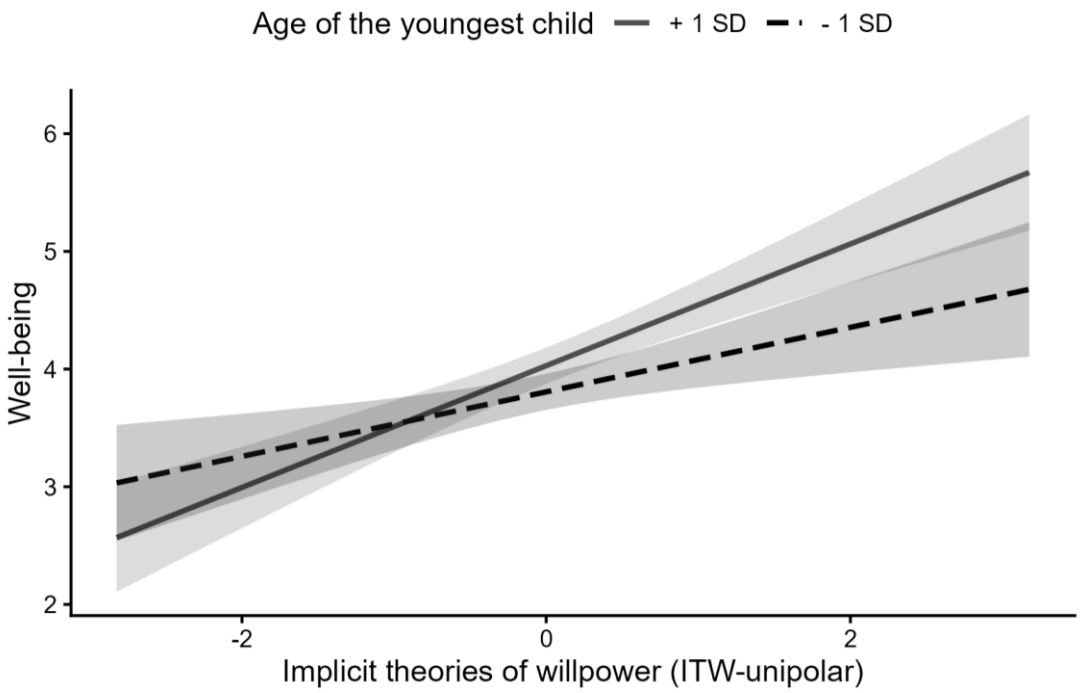
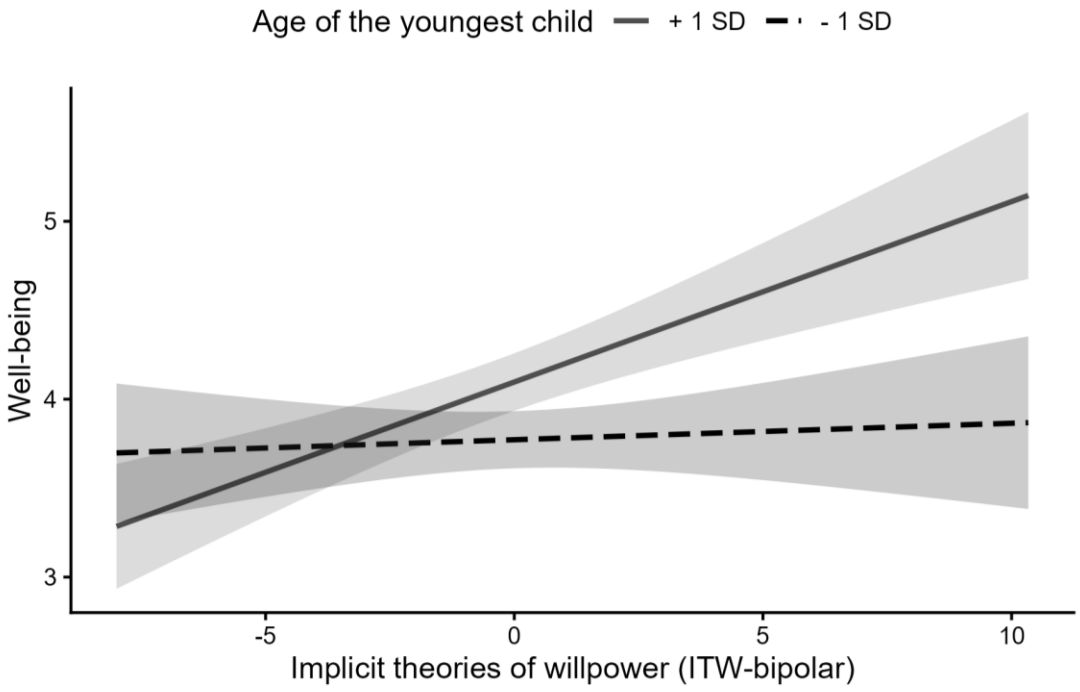



**Figure 2**

*Interaction between ITW-bipolar and age of the youngest child predicting well-being*



**Hypothesis 4**

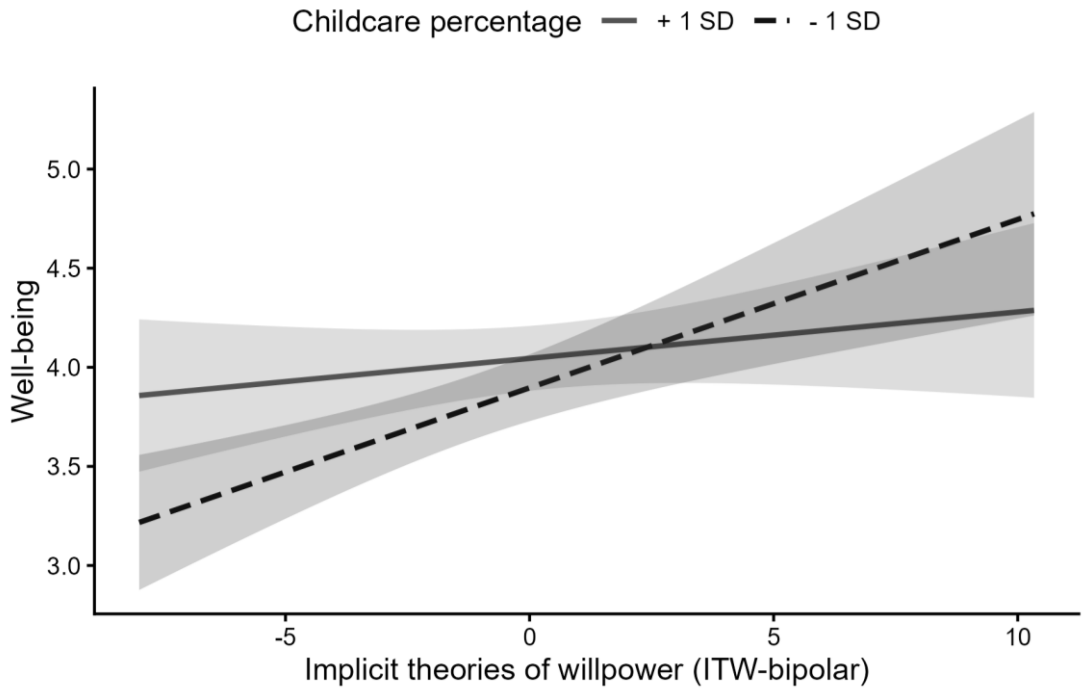
A third and last moderation analysis was performed to test whether the positive relationship between ITW and well-being was moderated by childcare percentage. Predictor and outcome variable match H2 and H3, with childcare percentage serving as the moderator variable. Analogous to H2 and H3, the predictor and moderator variables were centered. It was hypothesized that the positive association would be stronger the higher the childcare percentage, which a positive standardized regression slope for the interaction of the ITW and childcare percentage would indicate.

The interaction between ITW measured with the ITW-unipolar and the percentage of childcare did not significantly predict well-being, $b$ = -0.003, $SE$ = 0.002, $t(301)$ = -1.82, $p$ = .070, 95% CI [-0.006, 0.001]. When the ITW-bipolar scale was used to measure ITW, however, the interaction significantly predicted well-being, $b$ = -0.001, $SE$ = 0.0004, $t(301)$ = -2.08, $p$ = .038, 95% CI [-0.002, -0.0001]. Simple slopes analyses showed that ITW-bipolar significantly predicted well-being when the childcare percentage was low (-1 SD), $b$ = 0.08, $SE$ = 0.02, $t$ = 3.90, $p$ <.001, 95% CI [0.04, 0.12], and at the mean level, $b$ = 0.05, $SE$ = 0.02, $t$ = 3.51, $p$ < .001, 95% CI [0.02, 0.08], but not when the childcare percentage was high (+ 1 SD), $b$ = 0.02, $SE$ = 0.02, $t$ = 1.12, $p$ = .270, 95% CI [-0.02, 0.06]. A visualization of this can be viewed in *Figure 3.* A Johnson-Neyman analysis indicated that the conditional effect of the ITW-bipolar on well-being was statistically significant only at lower values of the childcare percentage but became nonsignificant at higher values of the moderator within the observed range. Additional values of the results for both the ITW-unipolar and the ITW-bipolar are shown in *Table E5* in *Appendix E*.

The results suggest that childcare percentage does not moderate the positive association between parents' ITW and well-being when ITW is measured with the ITW-unipolar scale, but a trend towards a moderation can be clearly observed. Further, childcare percentage does moderate the association between parents' ITW and well-being when the ITW-bipolar scale is used. However, the association weakened as the childcare percentage increased. This direction of the moderation is not in line with the hypothesized direction. Thus, the results do not support H4.

**Figure 3**

*Interaction between ITW-bipolar and childcare percentage predicting well-being*




**Hypothesis 5**

A linear regression analysis was conducted to examine the relationship between the age of the oldest child and parents' ITW, with the age of the oldest child being the predictor and ITW the outcome variable. As previously mentioned, higher scores indicate a greater agreement with a nonlimited theory of willpower. It was hypothesized that as the age of the oldest child increased, parents would show greater agreement with a nonlimited theory of willpower. This would result in a positive standardized regression slope.

The age of the oldest child did not significantly predict parents' ITW, neither when measured with the ITW-unipolar, $b$ = 0.004, $SE$ = 0.004, $t(311) = 1.18$, $p$ = .241, 95% CI [ -0.003, 0.011], nor the ITW-bipolar, $b$ = -0.012, $SE$ = 0.014, $t(311) = -0.82$, $p$ = .414, 95% CI [ -0.039, 0.016]. This did not change when controlling for parents' age for both the ITW-unipolar, $b$ = -0.003, $SE$ = 0.005, $t(310) = -0.51$, $p$ = .608, 95% CI [ -0.013, 0.008], and the ITW-bipolar $b$ = -0.022, $SE$ = 0.022 , $t(310) = -0.99$, $p$ = .321, 95% CI [ -0.064, 0.020].

Irrespective of the scale used to measure ITW or whether age was controlled for, the results suggest that the age of their oldest child does not predict the parents' ITW; thus, not supporting H5.

**Explorative Analyses**

While analyzing the five hypotheses, further questions arose. Therefore, the following explorative analyses were conducted after the hypothesis testing.

Firstly, the hypotheses containing age-related variables, namely H3 and H5, were not supported. They were tested both as initially intended and controlling for parents' age. Reasons for this are stated in the *Statistical Analyses* subsection of this paper. However, the parents' age did not show a confounding effect, leading to the question: Is a higher age also associated with a nonlimited theory of willpower in a sample of parents?

The parents' age significantly predicted ITW when the ITW-unipolar was used, $b$ = 0.007, $SE$ = 0.003, $t(311) = 1.99$, $p$ = .047, 95% CI [0.0001, 0.014]. The regression coefficient suggests that higher age is linked to a nonlimited theory of willpower in this sample. However, the results show no significance when the ITW-bipolar was used $b$ = -0.003, $SE$ = 0.014, $t(311) = -0.22$, $p$ = .823, 95% CI [-0.031, 0.025]. While this is simply an explorative analysis and cannot be valued as equivalent to the hypotheses, it is in line with previous research. Therefore, it can be taken as an indicator that the parents' age somewhat predicts ITW.

Furthermore, the validity of the answers about the participants' number of children came into question. As previously mentioned, answering this question with 0 was not possible. This could have led participants to behave in different ways, which are expanded upon in the *Limitations* subsection. One of these ways would be to answer with the closest answer available, a 1. Following this train of thought, everyone who indicated having one child was excluded from this alternative sample ($n$ = 117). *Table E1* contains the descriptive statistics of this sample. This alternative sample was used to test all hypotheses again, analogous to the hypothesis testing procedure described in the previous subsections. Additional values and a direct comparison of the hypotheses tested with a linear regression are shown in *Table E2*. The additional values of the moderator hypotheses and their comparison are summarized in *Tables E3* through *E5. Figures E1* through *E5* show the interactions between ITW and the respective moderator variable. All tables and figures whose names start with an *E* can be found in *Appendix E.*

The results of the testing of H1 with this alternative sample showed that ITW-unipolar ($p < .001$, $b$ = 0.54) and ITW-bipolar ($p$ = .001, $b$ = 0.08) significantly predicted well-being.

The regression coefficient indicates that higher ITW scores are related to higher well-being. Thus, the direction of this association is the same as with the original sample, further corroborating H1.

In contrast, the testing of the moderator hypotheses with the alternative sample yielded different results than with the original sample. As was the case in the original hypothesis testing, predictor and moderator variables were centered.

The interaction between the number of children and the ITW-unipolar ($p$ = .019, $b$ = -0.22) significantly predicted well-being, but not the interaction with the ITW-bipolar ($p$ = .782, $b$ = 0.01). The regression coefficient suggests that the positive association between ITW-unipolar and well-being weakens as the number of children increases. While the hypothesis testing with the original sample did not yield any significant results, the direction of the significant result with the alternative sample contradicts the direction postulated in H2, thereby strengthening the evidence against H2.

For H3, hypothesis testing with the original sample was significant for both measurements of ITW, despite going against the direction of the hypothesis. This changed with the alternative sample, where the interaction between the youngest child's age and ITW-unipolar ($p$ = .066, $b$ = 0.01) did not significantly predict well-being, but showed a trend towards significance. The interaction with ITW-bipolar, however, did significantly predict well-being ($p$ = .026, $b$ = 0.004). This remained true even when controlling for the parents' age (ITW-unipolar: $p$ = .062, $b$ = 0.01; ITW-bipolar: $p$ = .023, $b$ = 0.004). However, as with the results of the original sample, the regression coefficient indicates that the relationship between a nonlimited theory of willpower and well-being increases as the youngest child's age increases. This contradicts the hypothesized direction and further supports the evidence against H3.

The last moderator analysis for H4 resulted in a significant interaction between ITW measured with the ITW-bipolar and childcare percentage when the original sample was used. In the alternative sample, the interaction between both ITW-unipolar and childcare percentage ($p$ = .009, $b$ = -0.007) and ITW-bipolar and childcare percentage ($p$ = .016, $b$ = -0.002) significantly predicted well-being. Similar to the previous results, the regression coefficients go against the direction expressed in H4. Both the significant result from the original sample and the two significant results with the alternative sample suggest that the positive association between ITW and well-being decreases as the childcare percentage increases, substantiating evidence against H4.

Lastly, the results of H5 tested with the alternative sample differed from those tested with the original sample. While the age of the oldest child remained a nonsignificant predictor of the ITW-unipolar scores ($p$ = .284, $b$ = -0.006), it did significantly predict the ITW-bipolar scores ($p$ = .006, $b$ = -0.067). When the parents' age was controlled for, the age of the oldest child became a significant predictor for both the ITW-unipolar ($p$ = .009, $b$ = -0.039) and the ITW-bipolar ($p$ = .005, $b$ = -0.171). The regression coefficient shows that lower ages of the oldest child are related to higher ITW scores to some degree, thus to a nonlimited theory of willpower. However, the direction of this association goes against the one originally hypothesized, thus substantiating evidence against H5.

While these results are in no way equal to the original testing of the hypotheses, they do show more significance despite a smaller sample size. The results, however, do not support any hypotheses beyond H1, which was already supported by the hypothesis testing with the original sample.

Ultimately, the moderator analyses were approached from a different angle. In statistics, the interaction between the moderator and predictor variable in a moderator analysis is tested for significance. Therefore, from a methodological standpoint, it doesn't matter which variable is which. However, the plots that can be generated differ. This approach was chosen specifically to gain a new perspective on the contradictory results of the significant moderator analyses. The respective plots can be found in *Appendix F*.

All values of the moderator analysis for H3 can be taken from the respective subsection in the *Results* part, as well as *Table E3* in *Appendix E.* The predictor and moderator variables remain centered. Simple slopes analyses indicated that the age of the youngest child did not significantly predict well-being when ITW measured with the ITW-unipolar was low (- 1 SD), $b$ = -0.00, $SE$ = 0.01, $t$ = -0.05, $p$ = .96, and mean, $b$ = 0.01, $SE$ = 0.00, $t$ = 2.01, $p$ = .05, but did when ITW-unipolar was high (+ 1 SD), $b$ = 0.02, $SE$ = 0.01, $t$ = 2.92, $p$ = .00. This is visualized in *Figure F1*. The Johnson-Neyman analysis indicated that the association between the age of the youngest child and well-being became statistically significant only at ITW-unipolar scores exceeding -0.02; the observed range comprised values between -2.82 and 3.18. When ITW was measured with ITW-bipolar, simple slopes analyses revealed that the age of the youngest child did not significantly predict well-being at low ITW-bipolar values (- 1 SD), $b$ = -0.00, $SE$ = 0.01, $t$ = -0.18, $p$ = .86, but did at mean, $b$ = 0.01, $SE$ = 0.00, $t$ = 2.80, $p$ = .01, and high ITW-bipolar values (+ 1SD), $b$ = 0.02, $SE$ = 0.01, $t$ = 3.88, $p$ = .00. *Figure F2* shows this pattern visualized. Observed values ranged from -8.00 to 10.34. The Johnson-Neyman analysis showed that the association between the age of the

youngest child and well-being was only significant at moderate to high ITW-bipolar scores, specifically those exceeding -1.02. To put the results into words, at high ITW-unipolar and mean to high ITW-bipolar scores, which indicate tendencies towards a more nonlimited theory of willpower, well-being increased as the youngest child's age increased. Participants who leaned more towards a limited theory of willpower reported generally lower well-being, independent of the age of their youngest child.

Finally, the third and last significant result of the moderator analyses was approached from this new angle, the interaction between childcare percentage and ITW-bipolar. The subsection *Hypothesis 4* in the *Results* part and *Table E4* in *Appendix E* both show all values of the moderator analysis for H4. Again, predictor and moderator variables remain centered. Simple slopes analyses revealed that childcare percentage significantly predicted well-being at low ITW-bipolar values (- 1 SD), $b = 0.01$, $SE = 0.00$, $t = 2.53$, $p = .01$, but did not at mean, $b = 0.00$, $SE = 0.00$, $t = 1.25$, $p = 0.21$, and high ITW-bipolar values (+ 1SD), $b = -0.00$, $SE = 0.00$, $t = -0.49$, $p = 0.62$. This pattern is visualized in *Figure F3*. As stated in the previous paragraph, observed values ranged from -8.00 to 10.34. The Johnson-Neyman analysis revealed that the association between childcare and well-being only became statistically significant for ITW-bipolar values below -1.47. In summary, well-being increased as childcare percentage increased at low ITW-bipolar values, thus, when participants leaned more towards a limited theory of willpower. Those with a more nonlimited theory of willpower reported generally higher well-being that did not change depending on the childcare percentage.

## Discussion

The present study aimed to investigate whether taking parents' ITW into consideration can help clear up the ambiguity when it comes to their well-being. Furthermore, the idea that specific parenthood-related variables act as demands, creating a high-demand situation in which differences in well-being between differing ITW should be clearer, was investigated. For this purpose, H1 through H4 were formulated. Lastly, the study also attempted to examine whether the length of parenthood shapes the parents' beliefs about willpower; H5 was based on this idea.

In this sample of parents, a nonlimited theory of willpower was associated with higher well-being. No parenthood-related variables moderated this association as expected. Depending on the scale used to measure ITW, opposite effects were observed for the age of the youngest child and childcare percentage. A link between the age of the oldest child was also not found. In addition to the hypothesis testing results, a few other observations stood

out. For one, childcare percentage correlated significantly with both measures of ITW, well-being, and the three other parenthood-related measures. Additionally, the exploratory analyses showed that excluding all participants who reported having one child yielded more significant results than analyzing the entire sample. This was the case especially for the ITW-bipolar scale.

In sum, the data supported H1, the positive link between a nonlimited theory of willpower and higher well-being, but did not support any of the moderation hypotheses; neither did it support H5. Nevertheless, it showed that ITW, parenthood, and well-being do interact; however, contrary to the directions postulated in H2 through H5. This, however, has to be interpreted cautiously and should be tested separately in a subsequent study before drawing conclusions.

Taking a more detailed look, the association between a limited theory of willpower and lower well-being found in this study is in line with previous results showing this same link in working adults (Bernecker et al., 2017). It also shows that this association can be observed in a limited sample made up only of parents. This is not surprising, as parenthood comes with high demands and the association was previously shown to be especially strong during such times, like exam periods. As a result, the question arises whether this association can be extended to everyone or if there are groups where such an association might not be found, possibly those who experience constantly low demands.

This interpretation of the parenthood-related variables, namely the number of children, the age of the youngest child, and childcare percentage, functioning as demands, was not supported by the data. However, these parenthood-related variables did play a role, which is why these findings will be looked at in further detail in the subsequent sections.

For one, the well-being of parents who leaned more towards a nonlimited theory of willpower increased as the age of their youngest child increased. Even when the youngest child was at a young age, those parents reported higher well-being than parents with a more limited view of willpower, who indicated lower well-being across all ages of their youngest child.

The parents with a more nonlimited view may be better able to deal with the high caregiving demands of early parenthood, which would explain the difference when the youngest child was at a young age (Bernecker et al., 2017). While the financial responsibilities do not decrease throughout the later family life stages, continuously less time and energy need to be invested in caring for an older child. Subsequently, parents with a nonlimited theory of willpower may be able to use their spare time and energy resources and,

for instance, put them towards activities they enjoy. Thus, the increase in the parents' well-being as their youngest child gets older could be explained by a gain in free time. (Luhmann et al., 2012; Umberson & Gove, 1989). Alternatively, dealing well with the demanding circumstances of the early family life stages may lead those parents to hold higher expectations regarding their capacity to self-regulate in the later family life stages, which promotes effective goal striving. This may subsequently lead to higher well-being. The mechanism of previous experiences promoting future goal striving through ITW, however, has only been found in short-term situations. It is unclear whether it extends to such long time spans (Bernecker & Job, 2015).

In comparison, parents with a more limited theory of willpower report consistently low well-being regardless of the age of the youngest child. In the early family life stages, the continually high demands are experienced as depleting, and time for recovery is insufficient, explaining low well-being during these times. However, this may also culminate in a chronic state of stress that may even result in parental burnout, such that even reductions in caregiving demands in the later family life stages do not translate into substantial improvements in well-being (Bernecker et al., 2017; Bogdán et al., 2025; Umberson & Gove, 1989). Returning to the mechanism of goal striving being determined by previous experiences as an alternative explanation, parents with a limited theory of willpower seem to deal worse with the high demands that come with a young child. Therefore, they may hold lower expectations about their self-regulation capacity, which leads them to conserve their energy and not strive towards their goals effectively. Their low goal progress may manifest in their well-being staying at a low level, despite demands decreasing (Bernecker & Job, 2015).

When it comes to the interaction between childcare percentage and ITW, interpretation proves to be more difficult because a significant moderation was only found when the ITW-bipolar was used. Therefore, it seems more fruitful to discuss the conceptual differences between the measures of ITW as a start. As described in the *Measures* subsection, the ITW-bipolar was developed to better capture the energizing effects of a nonlimited theory of willpower, not just the lack of depletion experienced, that it captured by the ITW-unipolar. In the present sample, a significant correlation of $r = .51$ represents a strong association according to conventional effect size guidelines (Cohen, 1988), while still indicating that the two scales capture related, but non-identical facets of the same construct. A mean of $M = 3.82$ for the ITW-unipolar where the scale ranged from 1 to 7, describes this sample as leaning slightly towards a nonlimited belief about willpower, whereas a mean of $M = 9.00$ for the ITW-bipolar, with a scale ranging from 1 to 20, shows a slight tendency towards a limited

belief. In the context of this study and the conceptualization of the measures, this makes sense. The fatigue and exhaustion experienced by parents may not feel as depleting to some who lean towards a nonlimited theory of willpower; it is, however, highly plausible that they do not feel energized (Martins, 2019). This shows that the inclusion of both measures was worthwhile because it identifies parenthood as a situation where a lack of strain and feelings of energization are distinct and should be investigated separately.

Before expanding on the specific results of this last moderator analysis, it is also important to draw attention to the measure of childcare percentage. Difficulties with its conceptualization are expanded upon in the following *Limitations* subsection. Additionally, the measure also correlates significantly with every other measure listed in *Table 1*. This leads to the conclusion that childcare percentage is either a highly relevant construct, or that, more likely given the conceptual difficulties, the significant correlations are an artefact.

With this in mind, the data still shows that in parents who report low to mean childcare percentages, the association with a more nonlimited theory of willpower and well-being is stronger. One potential interpretation of this pattern is that these parents may be more engaged in interactive childcare, such as playing with the child. Such tasks are experienced as less taxing, more inherently rewarding, and possibly more energizing. These feelings may show themselves more distinctly in parents leaning towards a nonlimited theory of willpower and who feel energized by these tasks. In contrast, the parents who report high childcare percentages may deal with more straining, less meaningful routine tasks where energizing effects are rare (Roeters & Gracia, 2016). Another potential interpretation is that those who indicated low to mean childcare percentages are those who are employed. After a full day of work, parents with a limited theory of willpower may feel more fatigued than those with a nonlimited theory, making childcare tasks feel more taxing.

Lastly, it is interesting to compare the results of the original sample with those of the alternative sample. However, it is complicated to attribute the higher number of significant results with the alternative sample clearly to the exclusion of the cases where parents reported having one child. Interaction effects typically require substantially larger samples than 117 participants to achieve adequate statistical power and avoid inflated Type 2 error rates in moderation analyses (Brown et al., 2013). Moreover, due to the exclusion based on the response about the number of children, the results of the moderator analysis for H2 in specific 15are unlikely to be robust or meaningful. Certainty could only be achieved with additional data collection, where the process is improved to best eradicate the problems that arose in the

data collection process of the present study. These problems led to general difficulties with the quality of the sample and are addressed in the Limitations subsection.

**Theoretical Implications**

First and foremost, the present study extends research on ITW by introducing parenthood as a new and meaningful context in which these implicit beliefs operate. Previous research has primarily examined ITW in achievement-related or short-term high-demand situations, such as exam periods in an academic setting (Bernecker et al., 2017). By focusing exclusively on parents, the present findings demonstrate that the association between a nonlimited theory of willpower and higher well-being generalizes to a long-term, real-life context characterized by sustained demands. This supports the notion that ITW function as a relatively stable cognitive framework shaping how individuals interpret and cope with ongoing strain, rather than merely situational effort.

Moreover, the absence of the expected moderating effects challenges the straightforward demand-amplification perspective that the moderator hypotheses are based on. Instead of higher objective demands strengthening the differences between individuals holding limited versus nonlimited willpower beliefs, the findings suggest a more nuanced interplay. In addition to ITW and the perceived demands, adaptation processes over the family life course seem to be of relevance.

Finally, a comparison of the results obtained with the ITW-unipolar and the ITW-bipolar highlights the conceptual importance of distinguishing between beliefs about depletion and beliefs about energization. In real-life, high-demand contexts such as parenthood, these facets may have distinct implications.

**Limitations and Future Directions**

Primarily, concerns about the quality of the data need to be addressed. This is indicated by the large number of missing values and illogical responses described in the *Sample* subsection of this paper. The participants with missing values in the essential scales and those who lied about their own or their children's age were excluded. However, this exclusion only encompassed the identifiably untrue responses, leading to the conclusion that more participants who remained in the final sample gave incorrect responses.

One reason for this might be that the participants were recruited via crowdsourcing. In this context, crowdsourcing refers to the enlistment of a broad pool of individuals to participate in a study through open calls facilitated by a digital platform (Wazny, 2017). Here, the panel recruitment platform Prolific was used to acquire the sample. Due to the convenience of gathering large quantities of data at a relatively low cost, such sampling

methods are widely employed. However, this method also comes with its downsides. Because participants can choose which studies to participate in, so-called self-selection, the nature of participants might be biased in their levels of engagement, comprehension, and effort. Additionally, difficulties arise in the verification of demographic and behavioral information and the identification of inattentive or insincere participants (Wazny, 2017). Belliveau and Yakovenko (2022), for instance, mention several studies that obtained their data in this way and had to discard up to half of the cases due to the compromised quality of data. As this was the case in the present study as well, it is likely that the employed sampling method has contributed to the low data quality. In order to avoid this, future studies should opt for a different sampling method where participants feel more committed to answering truthfully.

Secondly, the data regarding parenthood might be particularly skewed. The possible responses to the first parenthood-related question about the number of children were not exhaustive. Specifically, it was not possible to answer this question with 0. Originally, participants were supposed to answer this question with any respective number, so this restriction of responses was not intended. Such a mistake is likely to introduce a measurement error, on one hand by forcing participants to select a response that does not reflect their true answer, and on the other by increasing nonresponse for both the item and the entire questionnaire (DeCastellarnau, 2018). The latter most likely did not have too much of an effect, as this item was presented at the very end of the questionnaire, only followed by three more items. The first two possibilities, however, are likely to have affected the data. In the present study, this omission could have manifested in three different ways: If the participants who would have truthfully answered 0 did not answer the question for this reason, item nonresponse, they were excluded from this sample. If they responded with an approximate answer, a 1, they were identified and excluded from the alternative sample computed for the explorative analyses. However, if they answered randomly, there was no possibility of identifying and excluding them. In sum, the issue was dealt with by excluding specific cases, but it cannot be ruled out that a measurement error remains in the data of this item and possibly the three following questions concerning parenthood (DeCastellarnau, 2018). Since a mistake like this does not commonly occur, it is unlikely to repeat itself. However, future studies could benefit from pilot testing the questionnaire before presenting it to participants.

Thirdly, the parenthood-related variables were created specifically for the present study. The first three items, covering the number of children and the ages of the youngest and oldest child, were straightforward numerical questions with a low likelihood of

misinterpretation. However, the fourth parenthood-related item about childcare percentage was conceptually more complex. On one hand, misinterpretation of the item could have happened due to it not being clear enough and never having been tested in any other study. On the other hand, the egocentric bias could have led participants to overestimate their own childcare percentage. This happens because one's own contribution is more readily available and therefore more salient than that of, in this case, the other parent or parents (Ross & Sicoly, 1979). As mentioned in the previous section, performing pilot testing with the overall questionnaire and particularly the parenthood-related items is recommended for future studies. It is plausible that specifically the vagueness of the item regarding the childcare percentage will come up during such pilot testing. Therefore, future studies should adopt multiple measurements of childcare amount in addition to a self-reported childcare percentage. Subjective and objective measures should be taken into consideration, as well as how these measures compare to those of the other parent or parents. Objective measures could be created, for instance, by adding up the amount of time reported throughout a diary study.

In sum, multiple factors contributed to the low quality of the data and limited the conclusions that can be drawn from the analyses. Apart from adjustments to the sampling method and pilot testing, the relationship between ITW, well-being, and parenthood could be best studied using a longitudinal approach throughout the transition to parenthood, possibly via a diary study.

Lastly, it needs to be mentioned that the missing response category of the item about the number of children was only discovered during observation of the data. The original hypotheses included comparisons between parents and non-parents. Because these comparisons were not possible with the present data, new hypotheses were created. This, naturally, happened after the first data observation. While inevitable, it was against good scientific practice and can only be dealt with through transparency. Future studies should adhere to the good scientific process and complete a pre-registration before examining the data.

**Practical Implications**

From a more practical perspective, the present findings underscore ITW as a relevant psychological factor associated with parental well-being. As parents who endorse a more limited view of willpower consistently reported lower well-being, they may constitute a particularly vulnerable group. This highlights that identifying parents' ITW early, potentially

even before starting a family, may help better understand individual differences in parental adjustment.

Interventions targeting ITW may represent a promising and cost-effective avenue for promoting parental well-being. Previous research has shown that willpower beliefs can be experimentally manipulated (Job et al., 2010, Study 2), at least in the short term. Whether such interventions successfully extend to real-life contexts of chronic high demand, such as parenthood, remains an open question but appears worthy of investigation. Preventive interventions could be implemented during the transition to parenthood, for expecting parents, or couples planning to conceive, to foster more nonlimited beliefs before demands increase.

Lastly, the results suggest that parents' experiences of demand and strain vary substantially across contexts. Therefore, it is important to account for diverse family structures and caregiving arrangements during, but also beyond, intervention development.

## Conclusion

The present study provides initial evidence that ITW are meaningfully associated with well-being in parents, extending previous findings to this domain. While the hypothesized moderation effects were not supported, the results nevertheless indicate that parenthood-related factors interact with ITW in complex and sometimes counterintuitive ways. Taken together, the findings suggest that willpower beliefs play an important role in shaping how parents experience and adapt to the demands of family life. Future research employing longitudinal designs and pilot-tested questionnaires is needed to clarify causal relationships and to further explore the potential of ITW as a target for interventions aimed at improving parental well-being.

**References**

Baumeister, R. F., Vohs, K. D., & Tice, D. M. (2007). The strength model of self-control. *Current Directions in Psychological Science*, *16*(6), 351–355. https://doi.org/10.1111/j.1467-8721.2007.00534.x

Belliveau, J., & Yakovenko, I. (2022). Evaluating and improving the quality of survey data from panel and crowd-sourced samples: A practical guide for psychological research. *Experimental and Clinical Psychopharmacology*, *30*(4), 400–408. https://doi.org/10.1037/pha0000564

Bernecker, K., Herrmann, M., Brandstätter, V., & Job, V. (2017). Implicit theories about willpower predict subjective well-being. *Journal of Personality*, *85*(2), 136–150. https://doi.org/10.1111/jopy.12225

Bernecker, K., & Job, V. (2015). Beliefs about willpower moderate the effect of previous day demands on next day's expectations and effective goal striving. *Frontiers in Psychology*, *6*. https://doi.org/10.3389/fpsyg.2015.01496

Berntsen, D., Rubin, D. C., & Siegler, I. C. (2011). Two versions of life: Emotionally negative and positive life events have different roles in the organization of life story and identity. *Emotion*, *11*(5), 1190–1201. https://doi.org/10.1037/a0024940

Bogdán, P. M., Varga, K., Tóth, L., Gróf, K., & Pakai, A. (2025). Parental burnout: A progressive condition potentially compromising family well-being—A narrative review. *Healthcare*, *13*(13), 1603. https://doi.org/10.3390/healthcare13131603

Brickman, P., Coates, D., & Janoff-Bulman, R. (1978). Lottery winners and accident victims: Is happiness relative? *Journal of Personality and Social Psychology*, *36*(8), 917–927. https://doi.org/10.1037/0022-3514.36.8.917

Brown, C. H., Sloboda, Z., Faggiano, F., Teasdale, B., Keller, F., Burkhart, G., Vigna-Taglianti, F., Howe, G., Masyn, K., Wang, W., Muthén, B., Stephens, P., Grey, S., & Perrino, T. (2013). Methods for synthesizing findings on moderation effects across

multiple randomized trials. *Prevention Science*, *14*(2), 144–156. https://doi.org/10.1007/s11121-011-0207-8

Brulé, G., & Maggino, F. (2017). Towards more complexity in subjective well-being studies. In G. Brulé & F. Maggino (Eds.), *Metrics of Subjective Well-Being: Limits and Improvements* (pp. 1–17). Springer International Publishing. https://doi.org/10.1007/978-3-319-61810-4_1

Buecker, S., Luhmann, M., Haehner, P., Bühler, J. L., Dapp, L. C., Luciano, E. C., & Orth, U. (2023). The development of subjective well-being across the life span: A meta-analytic review of longitudinal studies. *Psychological Bulletin*, *149*(7–8), 418–446. https://doi.org/10.1037/bul0000401

Carter, E. C., & McCullough, M. E. (2014). Publication bias and the limited strength model of self-control: Has the evidence for ego depletion been overestimated? *Frontiers in Psychology*, *5*. https://doi.org/10.3389/fpsyg.2014.00823

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Psychology Press.

Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika*, *16*(3), 297–334. https://doi.org/10.1007/BF02310555

DeCastellarnau, A. (2018). A classification of response scale characteristics that affect data quality: A literature review. *Quality & Quantity*, *52*(4), 1523–1559. https://doi.org/10.1007/s11135-017-0533-4

Diener, E. (2013). The remarkable changes in the science of subjective well-being. *Perspectives on Psychological Science*, *8*(6), 663–666. https://doi.org/10.1177/1745691613507583

Downey, D. B. (1995). When bigger is not better: Family size, parental resources, and children's educational performance. *American Sociological Review*, *60*(5), 746. https://doi.org/10.2307/2096320

Erickson, J. J., Martinengo, G., & Hill, E. J. (2010). Putting work and family experiences in context: Differences by family life stage. *Human Relations*, *63*(7), 955–979. https://doi.org/10.1177/0018726709353138

Fischer, P., Greitemeyer, T., & Frey, D. (2008). Self-regulation and selective exposure: The impact of depleted self-regulation resources on confirmatory information processing. *Journal of Personality and Social Psychology*, *94*(3), 382–395. https://doi.org/10.1037/0022-3514.94.3.382

Friese, M., Frankenbach, J., Job, V., & Loschelder, D. D. (2017). Does self-control training improve self-control? A meta-analysis. *Perspectives on Psychological Science*, *12*(6), 1077–1099. https://doi.org/10.1177/1745691617697076

Government Equalities Office. (2021). *Sharing of childcare and well-being outcomes: An empirical analysis*. GOV.UK. https://www.gov.uk/government/publications/childcare-shared-care-and-well-being-outcomes-for-families/sharing-of-childcare-and-well-being-outcomes-an-empirical-analysis

Hagger, M. S., Wood, C., Stiff, C., & Chatzisarantis, N. L. D. (2010). Ego depletion and the strength model of self-control: A meta-analysis. *Psychological Bulletin*, *136*(4), 495–525. https://doi.org/10.1037/a0019486

Hansen, T. (2012). Parenthood and happiness: A review of folk theories versus empirical evidence. *Social Indicators Research*, *108*(1), 29–64. https://doi.org/10.1007/s11205-011-9865-y

Hinz, A., Daig, I., Petrowski, K., & Brähler, E. (2012). Die Stimmung in der deutschen Bevölkerung: Referenzwerte für den Mehrdimensionalen Befindlichkeitsfragebogen MDBF. *PPmP - Psychotherapie · Psychosomatik · Medizinische Psychologie*, *62*(02), 52–57. https://doi.org/10.1055/s-0031-1297960

Hofmann, W., Luhmann, M., Fisher, R. R., Vohs, K. D., & Baumeister, R. F. (2014). Yes, but are they happy? Effects of trait self-control on affective well-being and life satisfaction. *Journal of Personality*, *82*(4), 265–277. https://doi.org/10.1111/jopy.12050

Jarden, A., & Roache, A. (2023). What is wellbeing? *International Journal of Environmental Research and Public Health*, *20*(6), 5006. https://doi.org/10.3390/ijerph20065006

Job, V., Dweck, C. S., & Walton, G. M. (2010). Ego depletion—Is it all in your head?: Implicit theories about willpower affect self-regulation. *Psychological Science*, *21*(11), 1686–1693. https://doi.org/10.1177/0956797610384745

Job, V., Sieber, V., Rothermund, K., & Nikitin, J. (2018). Age differences in implicit theories about willpower: Why older people endorse a nonlimited theory. *Psychology and Aging*, *33*(6), 940–952. https://doi.org/10.1037/pag0000285

Job, V., Walton, G. M., Bernecker, K., & Dweck, C. S. (2015). Implicit theories about willpower predict self-regulation and grades in everyday life. *Journal of Personality and Social Psychology*, *108*(4), 637–647. https://doi.org/10.1037/pspp0000014

Jungert, T., Landry, R., Joussemet, M., Mageau, G., Gingras, I., & Koestner, R. (2015). Autonomous and controlled motivation for parenting: Associations with parent and child outcomes. *Journal of Child and Family Studies*, *24*(7), 1932–1942. https://doi.org/10.1007/s10826-014-9993-5

Kühn, M., Carollo, A., Caputo, J., Ahrenfeldt, L. J., & Oksuzyan, A. (2025). Single parenthood, gender, and mortality. *Demography*, 12234087. https://doi.org/10.1215/00703370-12234087

Lodi, E., Perrella, L., Zarbo, R., & Patrizi, P. (2022). Courage as mediator between positive resources and general/domain-specific well-being indices. *European Journal of Investigation in Health, Psychology and Education*, *12*(8), 1067–1081. https://doi.org/10.3390/ejihpe12080076

Luhmann, M., Hofmann, W., Eid, M., & Lucas, R. E. (2012). Subjective well-being and adaptation to life events: A meta-analysis. *Journal of Personality and Social Psychology*, *102*(3), 592–615. https://doi.org/10.1037/a0025948

Luhmann, M., Lucas, R. E., Eid, M., & Diener, E. (2013). The prospective effect of life satisfaction on life events. *Social Psychological and Personality Science*, *4*(1), 39–45. https://doi.org/10.1177/1948550612440105

Martijn, C., Tenbült, P., Merckelbach, H., Dreezens, E., & De Vries, N. K. (2002). Getting a grip on ourselves: Challenging expectancies about loss of energy after self-control. *Social Cognition*, *20*(6), 441–460. https://doi.org/10.1521/soco.20.6.441.22978

Martins, C. A. (2019). Transition to parenthood: Consequences on health and well-being. A qualitative study. *Enfermería Clínica (English Edition)*, *29*(4), 225–233. https://doi.org/10.1016/j.enfcle.2018.04.007

Napolitano, C. M., & Job, V. (2018). Assessing the Implicit Theory of Willpower for Strenuous Mental Activities Scale: Multigroup, across-gender, and cross-cultural measurement invariance and convergent and divergent validity. *Psychological Assessment*, *30*(8), 1049–1064. https://doi.org/10.1037/pas0000557

Nelson, S. K., Kushlev, K., & Lyubomirsky, S. (2014). The pains and pleasures of parenting: When, why, and how is parenthood associated with more or less well-being? *Psychological Bulletin*, *140*(3), 846–895. https://doi.org/10.1037/a0035444

Novoa, C., Cova, F., Nazar, G., Oliva, K., & Vergara-Barra, P. (2022). Intensive parenting: The risks of overdemanding. *Trends in Psychology*, *33*(1), 53–66. https://doi.org/10.1007/s43076-022-00229-9

Paim, L. (1995). Definitions and measurements of well-being: A review of literature. *Journal of Economic and Social Measurement*, *21*(4), 297–309. https://doi.org/10.3233/JEM-1995-21403

Porat-Zyman, G., Taubman – Ben-Ari, O., & Spielman, V. (2017). Dyadic transition to parenthood: A longitudinal assessment of personal growth among parents of pre- and full-term infants. *Stress and Health*, *33*(1), 24–34. https://doi.org/10.1002/smi.2669

Richeson, J. A., & Shelton, J. N. (2003). When prejudice does not pay: Effects of interracial contact on executive function. *Psychological Science*, *14*(3), 287–290. https://doi.org/10.1111/1467-9280.03437

Roeters, A., & Gracia, P. (2016). Child care time, parents' well-being, and gender: Evidence from the American Time Use Survey. *Journal of Child and Family Studies*, *25*(8), 2469–2479. https://doi.org/10.1007/s10826-016-0416-7

Ross, M., & Sicoly, F. (1979). Egocentric biases in availability and attribution. *Journal of Personality and Social Psychology*, *37*(3), 322–336. https://doi.org/10.1037/0022-3514.37.3.322

RStudio Team. (2025). *RStudio* (Version 2025.09.0) [Computer software]. Posit Software, PBC. https://posit.co/products/open-source/rstudio/

Savani, K., & Job, V. (2017). Reverse ego-depletion: Acts of self-control can improve subsequent performance in Indian cultural contexts. *Journal of Personality and Social Psychology*, *113*(4), 589–607. https://doi.org/10.1037/pspi0000099

Seligman, M. E. P., & Csikszentmihalyi, M. (2000). Positive psychology: An introduction. *American Psychologist*, *55*(1), 5–14. https://doi.org/10.1037/0003-066X.55.1.5

Sieber, V., Flückiger, L., Mata, J., Bernecker, K., & Job, V. (2019). Autonomous goal striving promotes a nonlimited theory about willpower. *Personality and Social Psychology Bulletin*, *45*(8), 1295–1307. https://doi.org/10.1177/0146167218820921

Skirbekk, V. (2022). *Decline and prosper!: Changing global birth rates and the advantages of fewer children*. Springer International Publishing. https://doi.org/10.1007/978-3-030-91611-4

Stroop, J. R. (1935). Studies of interference in serial verbal reactions. *Journal of Experimental Psychology*, *18*(6), 643–662. https://doi.org/10.1037/h0054651

Sun, X., Cortina, K. S., Miller, K. F., & Ning, H. (2019). Willpower as cultural construct: Do Chinese students believe less in its depletion? *Frontiers in Psychology*, *10*, 988. https://doi.org/10.3389/fpsyg.2019.00988

Tice, D. M., Baumeister, R. F., Shmueli, D., & Muraven, M. (2007). Restoring the self: Positive affect helps improve self-regulation following ego depletion. *Journal of Experimental Social Psychology*, *43*(3), 379–384. https://doi.org/10.1016/j.jesp.2006.05.007

Umberson, D., & Gove, W. R. (1989). Parenthood and psychological well-being: Theory, measurement, and stage in the family life course. *Journal of Family Issues*, *10*(4), 440–462. https://doi.org/10.1177/019251389010004002

Van Scheppingen, M. A., Denissen, J. J. A., & Bleidorn, W. (2018). Stability and change in self–control during the transition to parenthood. *European Journal of Personality*, *32*(6), 690–704. https://doi.org/10.1002/per.2172

Vohs, K. D., Baumeister, R. F., & Ciarocco, N. J. (2005). Self-regulation and self-presentation: Regulatory resource depletion impairs impression management and effortful self-presentation depletes regulatory resources. *Journal of Personality and Social Psychology*, *88*(4), 632–657. https://doi.org/10.1037/0022-3514.88.4.632

Wazny, K. (2017). Crowdsourcing's ten years in: A review. *Journal of Global Health*, *7*(2), 020601. https://doi.org/10.7189/jogh.07.020601

Western, M., & Tomaszewski, W. (2016). Subjective wellbeing, objective wellbeing and inequality in Australia. *PLOS ONE*, *11*(10), e0163345. https://doi.org/10.1371/journal.pone.0163345

World Health Organization. (2024). *The World Health Organization–Five Well-Being Index (WHO-5)*. World Health Organization. https://www.who.int/publications/i/item/9789240075958

Wrzus, C., Hänel, M., Wagner, J., & Neyer, F. J. (2013). Social network changes and life events across the life span: A meta-analysis. *Psychological Bulletin*, *139*(1), 53–80. https://doi.org/10.1037/a0028601

**Figures**

## Tables

# Appendix A
# Abstracts

## English Abstract

Parenthood represents a highly demanding life transition, yet its association with parental well-being remains empirically ambiguous. Drawing on research on implicit theories of willpower (ITW), this study examines whether parents' beliefs about willpower as a limited versus nonlimited resource help explain individual differences in well-being and whether the length of the parenthood shapes these beliefs. Cross-sectional data were collected from a German-speaking sample of 313 parents from Austria and Switzerland. Linear regression and moderation analyses were conducted to test the association between ITW, well-being, and parenthood-related variables (number of children, age of the youngest child, age of the oldest child, and childcare percentage). Results showed a positive association between parents endorsing a nonlimited theory of willpower and higher well-being. Contrary to expectations, parenthood-related demand indicators did not strengthen this association; instead, some interactions suggested that the link between ITW and well-being increased as caregiving demands decreased. No evidence was found that longer parental experience predicted more nonlimited willpower beliefs. Overall, the findings highlight ITW as an interesting psychological correlate of parental well-being while questioning assumptions about demands and adaptation effects in parenthood.

Key words: Implicit theories of willpower, parenthood, well-being

**German Abstract**

Elternschaft stellt einen sehr anspruchsvollen Lebensübergang dar, doch ein Zusammenhang mit elterlichem Wohlbefinden bleibt empirisch unklar. Auf Grundlage von Forschungsarbeiten zu impliziten Theorien über Willenskraft (ITW) untersucht diese Studie, ob die Überzeugungen der Eltern über Willenskraft als begrenzte oder unbegrenzte Ressource dazu beitragen, individuelle Unterschiede im Wohlbefinden zu erklären, und ob die Dauer der Elternschaft diese Überzeugungen beeinflusst. Es wurden Querschnittsdaten aus einer deutschsprachigen Stichprobe von 313 Eltern aus Österreich und der Schweiz erhoben. Lineare Regressions- und Moderationsanalysen wurden durchgeführt, um Zusammenhänge zwischen IZW, Wohlbefinden und elternschaftsbezogenen Variablen (Anzahl der Kinder, Alter des jüngsten Kindes, Alter des ältesten Kindes und Betreuungsanteil) zu testen. Die Ergebnisse zeigten einen positiven Zusammenhang zwischen Eltern, die eine unbegrenzte Theorie der Willenskraftbefürworten, und einem höheren Wohlbefinden. Entgegen den Erwartungen verstärkten Indikatoren des elterlichen Betreuungsaufwandes diesen Zusammenhang nicht; stattdessen deuteten einige Wechselwirkungen darauf hin, dass der Zusammenhang zwischen ITW und Wohlbefinden mit abnehmendem Betreuungsaufwand zunahm. Es wurden keine Hinweise darauf gefunden, dass längere Erfahrung als Elternteil eine stärkere Überzeugung von unbegrenzter Willenskraft vorhersagt. Insgesamt unterstreichen die Ergebnisse ITW als interessantes psychologisches Korrelat des elterlichen Wohlbefindens und stellen gleichzeitig Annahmen über Anforderungen und Anpassungseffekte in der Elternschaft in Frage.

Stichwörter: Impliziten Theorien über Willenskraft, Elternschaft, Wohlbefinden

## Appendix B

## Full scale items

**Full list of Items of the Implicit Theories About Willpower for Strenuous Mental Activities Scale (ITW-unipolar)**

Response options: 1 = Stimme überhaupt nicht zu (strongly disagree), 2 = Stimme nicht zu (moderately disagree), 3 = Stimme eher nicht zu (slightly disagree), 4 = Weder noch, 5 = Stimme eher zu (slightly agree), 6 = Stimme zu (moderately agree), 7 = Stimme voll und ganz zu (strongly agree).

1. Anstrengende mentale Tätigkeiten (z.B. Nachdenken über eine schwierige Fragestellung, sich stark auf Etwas konzentrieren) **erschöpfen** meine Kraftressourcen, welche ich im Anschluss wieder **auftanken** muss (z.B. durch Pausen, Nichtstun, Fernsehen oder Essen). (Strenuous mental activity () **exhausts** your resources, which you need to **refuel** afterwards (e.g. through taking breaks, doing nothing, watching television, eating snacks).) *
2. Nach einer anstrengenden mentalen Tätigkeit ist meine Energie **erschöpft** und ich muss mich erholen, um sie wieder **aufzutanken**. (After a strenuous mental activity, your energy is **depleted** and you must rest to get it **refuelled** again.) *
3. Wenn ich an einer anstrengenden mentalen Aufgabe gearbeitet habe, fühle ich mich **gestärkt** und bin im Stande, **sofort** eine **neue herausfordernde Aufgabe** anzupacken. (When you have been working on a strenuous mental task, you feel **energized** and you are able to **immediately** start with **another demanding activity**.)
4. Meine Willenskraft ist unerschöpflich. Auch nachdem ich mich eine Zeit lang auf Etwas **konzentriert** habe, kann ich mit etwas Anspruchsvollem **fortfahren**. (Your mental stamina fuels itself. Even after strenuous mental **exertion**, you can **continue** doing more of it.)
5. Nach einer anspruchsvollen geistigen Tätigkeit kann ich nicht mit **derselben Konzentration** eine **neue Tätigkeit** angehen, weil ich mich zuerst erholen muss. (When you have completed a strenuous mental activity, you cannot start **another activity** immediately with the **same concentration** because you have to recover your mental energy again.) *
6. Nach einer anstrengenden mentalen Tätigkeit, fühle ich mich **gestärkt** für **weitere herausfordernde Aktivitäten**. (After a strenuous mental activity, you feel energized for further challenging activities.)

* Reverse Scored

**Full list of Items of ITW-Bipolar Scale**

Response options: 1 to 20

1. Stellen Sie sich vor, Sie arbeiten an einer sehr **schwierigen Aufgabe**, die Ihre volle **Konzentration** für eine Stunde erfordert. Glauben Sie, dass Sie sich danach müde und schläfrig fühlen würden, oder eher frisch und energiegeladen? Auf der folgenden Skala bedeutet **1**, dass Sie sich nach einer Stunde konzentrierter Arbeit an einer sehr **schwierigen Aufgabe müder** und **schläfriger** fühlen würden, und **20** bedeutet, dass Sie sich **frischer** und **energiegeladener** fühlen würden. Bitte wählen Sie einen Punkt auf der folgenden Skala entsprechend Ihrer persönlichen Überzeugung. (Imagine you are working on a very **difficult task** that requires your full **concentration** for 1 hr. Do you believe that right after this, you would feel tired and sleepy, or would you feel fresh and energetic? On the following scale, **1** means that after working on a very **difficult task** for 1 hour, you would feel **tired** and **sleepy**, and **20** means that you would feel **fresh** and **energetic**. Choose a point on the scale that reflects your personal beliefs.)

   1 = Nach konzentrierter Arbeit an einer schwierigen Aufgabe würde ich mich müder und schläfriger fühlen (After working on a very difficult task, I would feel tired and sleepy), 20 = Nach konzentrierter Arbeit an einer schwierigen Aufgabe würde ich mich frischer und energiegeladener fühlen (After working on a very difficult task, I would feel fresh and energetic).

2. Stellen Sie sich vor, Sie arbeiten an einer sehr **schwierigen Aufgabe**, die viel **Konzentration** erfordert, für eine Stunde. Glauben Sie, dass es danach einfacher oder schwieriger wäre, sich auf eine andere Aufgabe zu konzentrieren, die ebenfalls schwierig ist und viel Konzentration erfordert? Auf der folgenden Skala bedeutet **1**, dass es nach einer Stunde konzentrierter Arbeit an einer sehr **schwierigen Aufgabe schwieriger** wäre, sich auf eine weitere **schwierige Aufgabe** zu konzentrieren, und **20** bedeutet, dass es einfacher wäre. Bitte wählen Sie einen Punkt auf der folgenden Skala entsprechend Ihrer persönlichen Überzeugung. (Imagine you are working on a very **difficult task** that requires a lot of **concentration** for 1 hr. Do you believe that right after this, would it be more easy to concentrate on a different task that is also difficult and requires a lot of concentration, or would it be less easy to concentrate on another difficult task? On the following scale, **1** means that after working on a very **difficult task** for 1 hour, it would be **less easy** to concentrate on another **difficult**

**task**, and **20** means that it would be **more easy**. Choose a point on the scale that reflects your personal beliefs.)

1 = Nach der Arbeit an einer schwierigen Aufgabe wird es schwieriger sein, sich auf eine weitere schwierige Aufgabe zu konzentrieren (After working on a very difficult task, it would be less easy to concentrate on another difficult task), 20 = Nach der Arbeit an einer schwierigen Aufgabe wird es einfacher sein, sich auf eine weitere schwierige Aufgabe zu konzentrieren (After working on a very difficult task, it would be more easy to concentrate on another difficult task).

3. Stellen Sie sich vor, Sie arbeiten eine Stunde an einer sehr **schwierigen Aufgabe**, die viel **Konzentration** erfordert. Glauben Sie, dass Sie unmittelbar danach eine **Pause** benötigen würden, bevor Sie an einer weiteren **schwierigen Aufgabe** arbeiten können, die ebenfalls viel **Konzentration** erfordert, oder könnten Sie sich ohne **Pause** sofort auf eine weitere **schwierige Aufgabe** konzentrieren? Auf der folgenden Skala bedeutet **1**, dass Sie nach einer Stunde Arbeit an einer sehr **schwierigen Aufgabe** eine **Pause** benötigen würden, bevor Sie sich auf eine weitere **schwierige Aufgabe konzentrieren** können, und **20** bedeutet, dass Sie sich sofort auf eine weitere **schwierige Aufgabe konzentrieren** können. Bitte wählen Sie einen Punkt auf der folgenden Skala entsprechend Ihrer persönlichen Überzeugung. (Imagine you are working on a very **difficult task** that requires a lot of **concentration** for 1 hr. Do you believe that immediately after this, you would need a **break** before you can work on another **difficult task** that also requires a lot of **concentration**, or would you be able to concentrate on another **difficult task** right away without any **break**? On the following scale, **1** means that after working on a very **difficult task** for 1 hour, you would need a **break** before you can work on another **difficult task**, and **20** means that you would be able to concentrate on another **difficult task** right away. Choose a point on the scale that reflects your personal beliefs.)

1 = Nach der Arbeit an einer schwierigen Aufgabe würde ich eine Pause benötigen, bevor ich mich auf eine weitere schwierige Aufgabe konzentrieren kann (After working on a very difficult task, I would need a break before I can work on another difficult task), 20 = Nach der Arbeit an einer schwierigen Aufgabe kann ich mich sofort auf eine weitere schwierige Aufgabe konzentrieren (After working on a very difficult task, I would be able to concentrate on another difficult task right away).

**Full list of Items of WHO-5 Index**

Response options: 1 = Die ganze Zeit (All of the time), 2 = Meistens (Most of the time), 3 = Mehr als die Hälfte der Zeit (More than half of the time), 4 = Weniger als die Hälfte der Zeit (Less than half of the time), 5 = Ab und zu (Some of the time), 6 = Zu keinem Zeitpunkt (At no time).

1. Ich war ich froh und guter Laune. (sic) (I have felt cheerful and in good spirits.)
2. Ich habe mich ruhig und entspannt gefühlt. (I have felt calm and relaxed.)
3. Ich habe mich aktiv und energiegeladen gefühlt. (I have felt active and vigorous.)
4. Ich bin frisch und ausgeruht aufgewacht. (I woke up feeling fresh and rested.)
5. Mein Alltag war voller Dinge, die mich interessieren. (My daily life has been filled with things that interest me.)

## Appendix C

## Histograms of the Hypotheses

**Figure C1**

*Histogram H1 ITW-Unipolar*

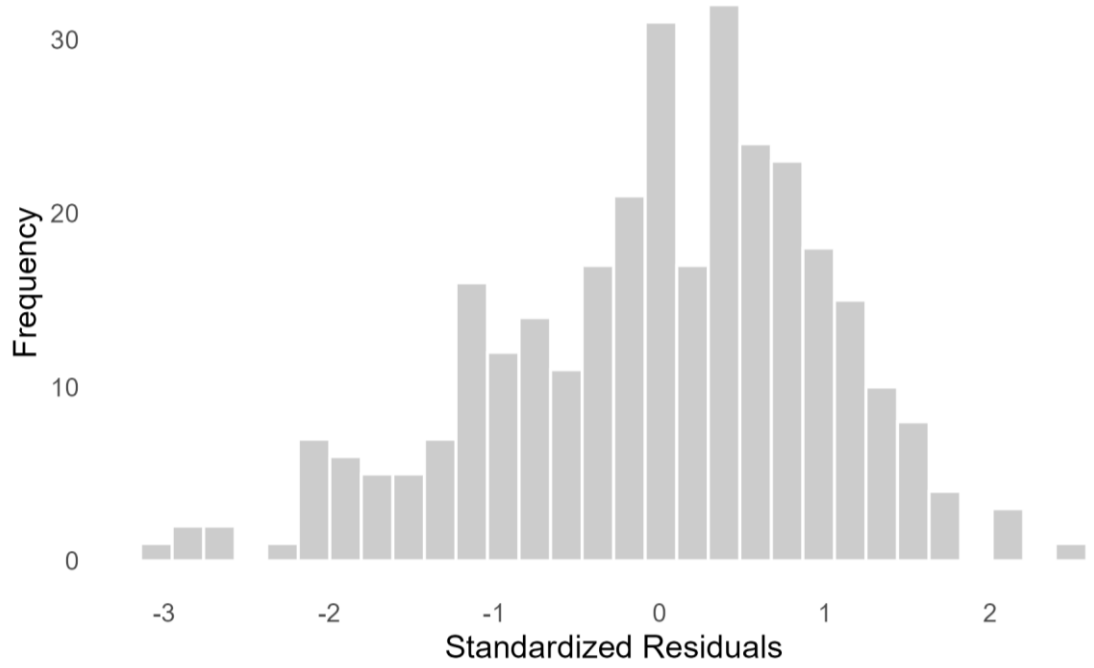



**Figure C2**

*Histogram H1 ITW-Bipolar*

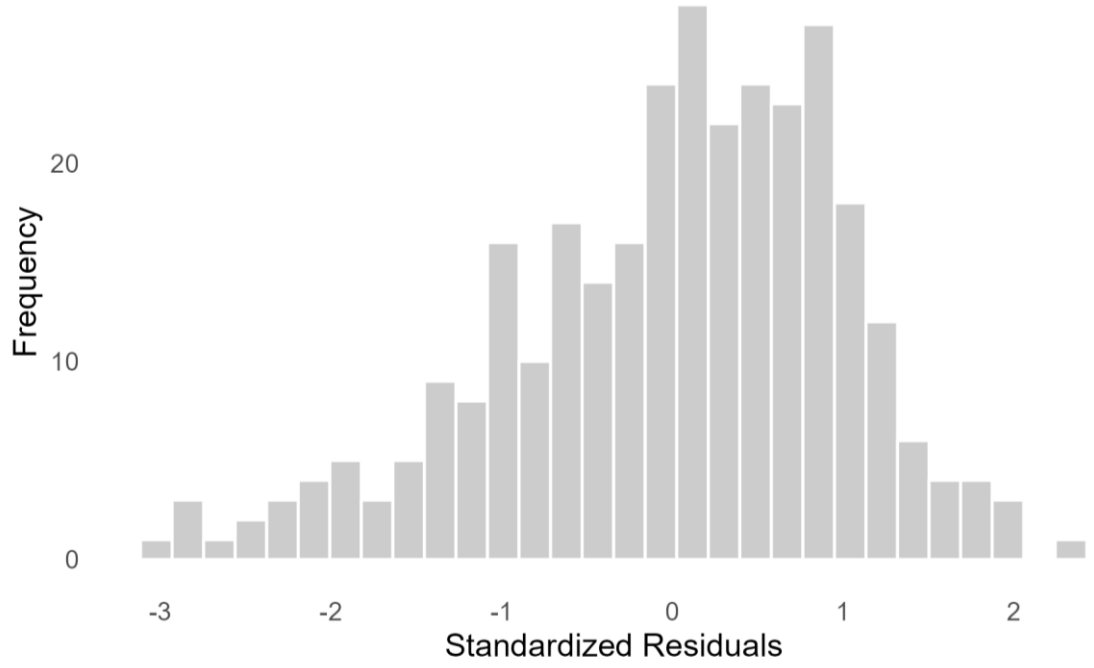


**Figure C3**

*Histogram H2 ITW-Unipolar*

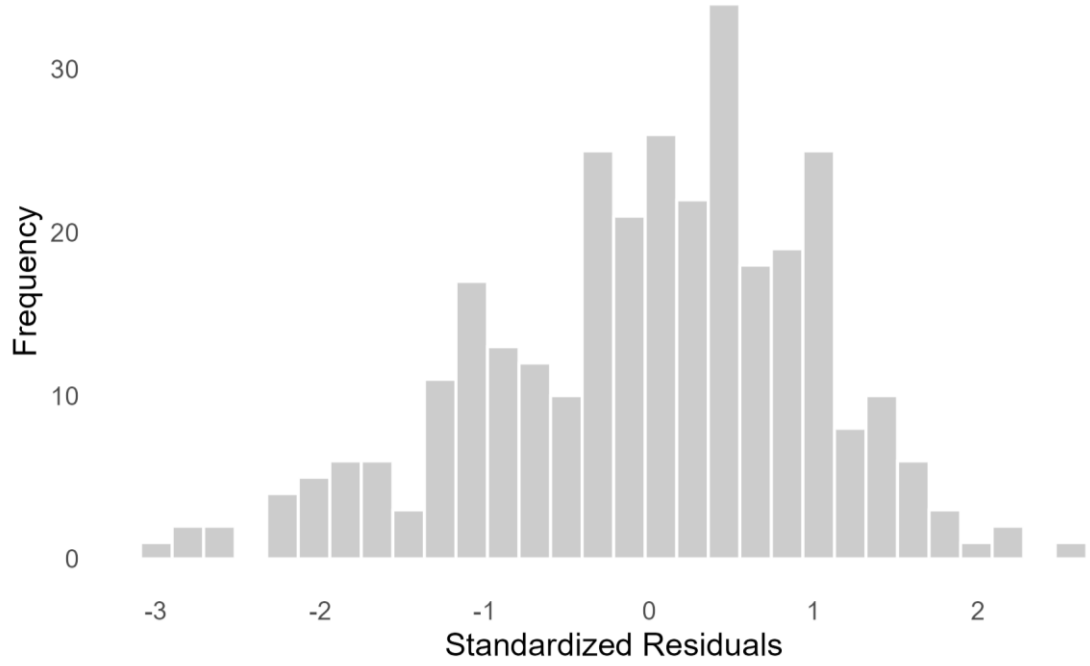



**Figure C4**

*Histogram H2 ITW-Bipolar*

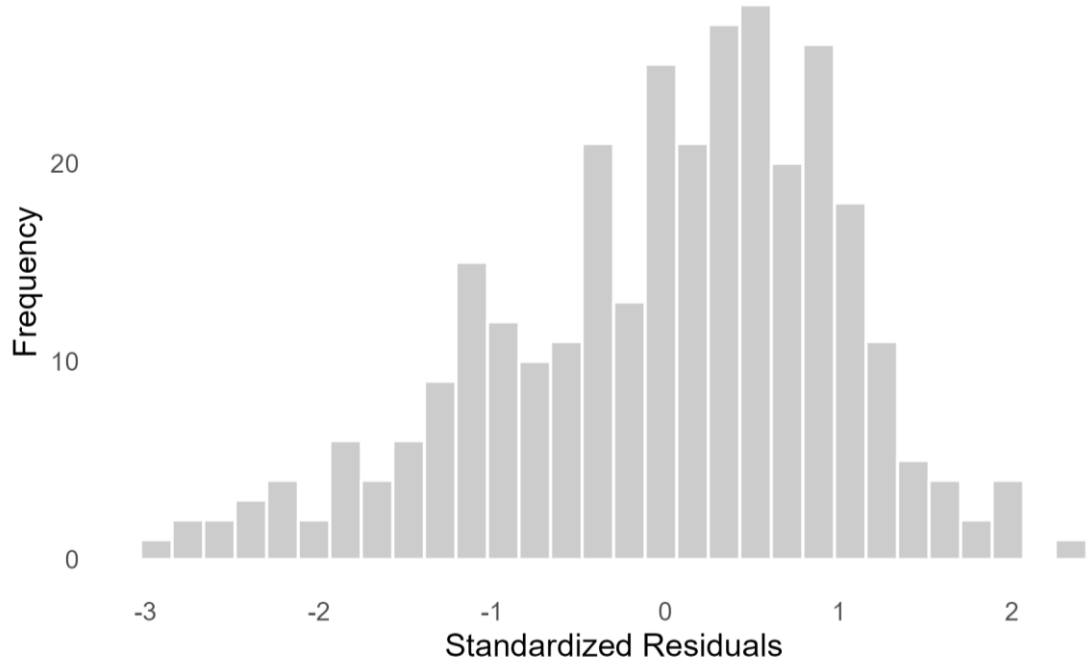


**Figure C5**

*Histogram H3 ITW-Unipolar*

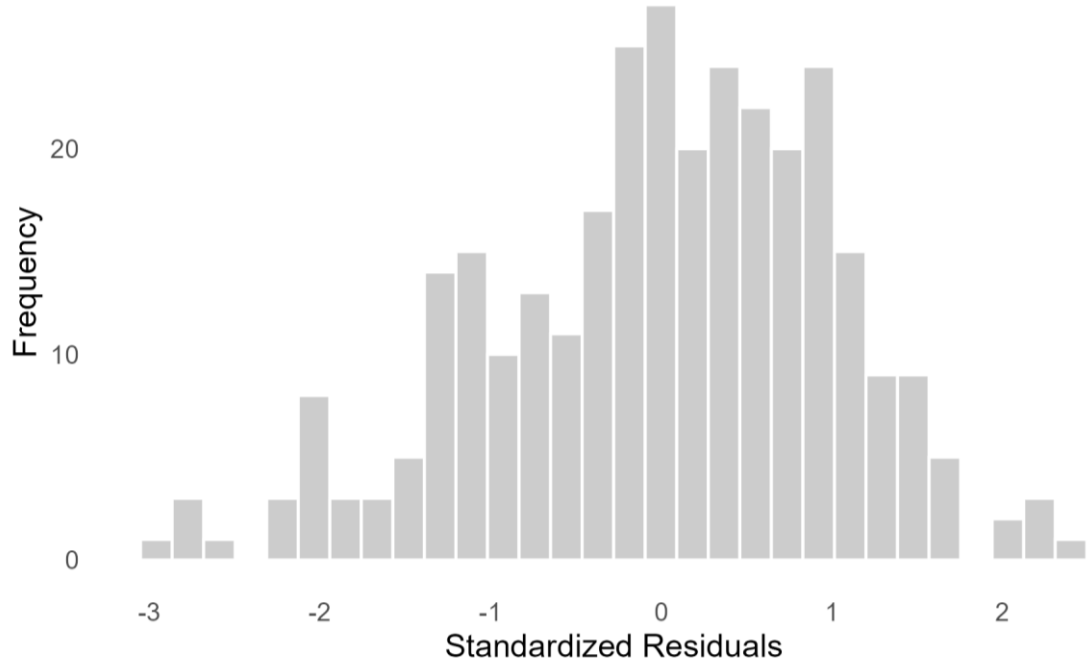



**Figure C6**

*Histogram H3 ITW-Bipolar*

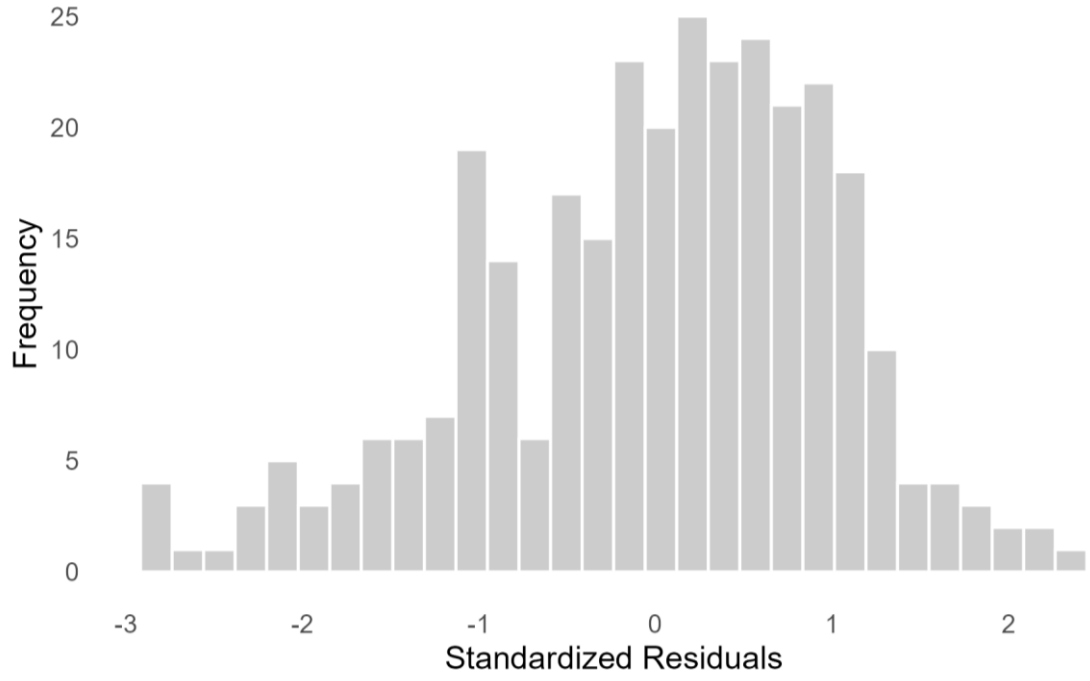


**Figure C7**

*Histogram H3 ITW-Unipolar (Controlling for Age)*

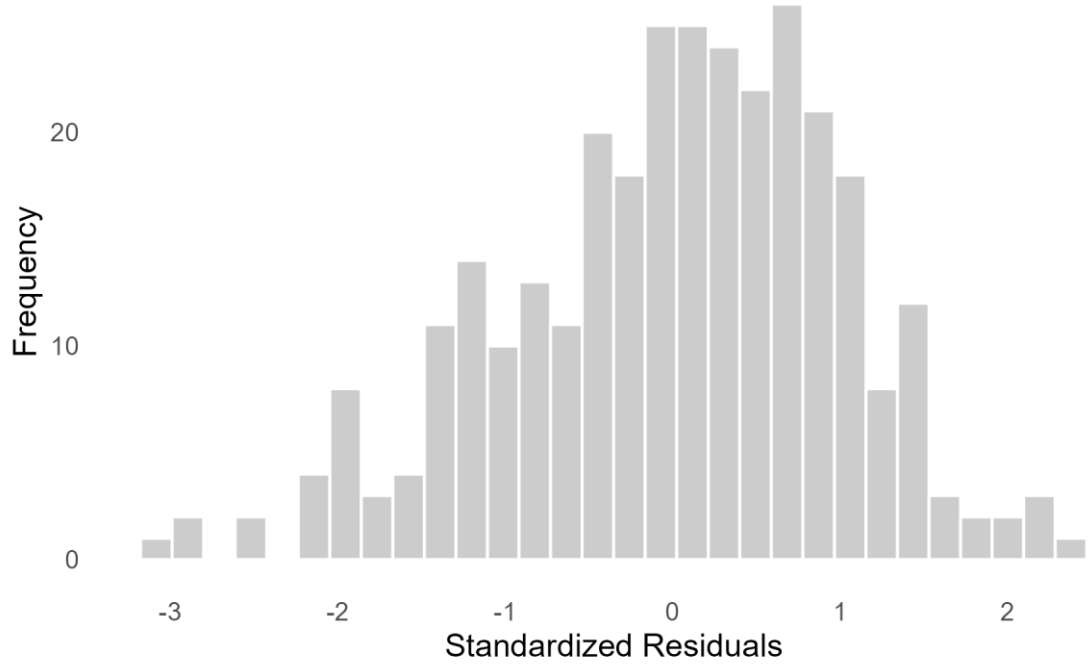



**Figure C8**

*Histogram H3 ITW-Bipolar (Controlling for Age)*

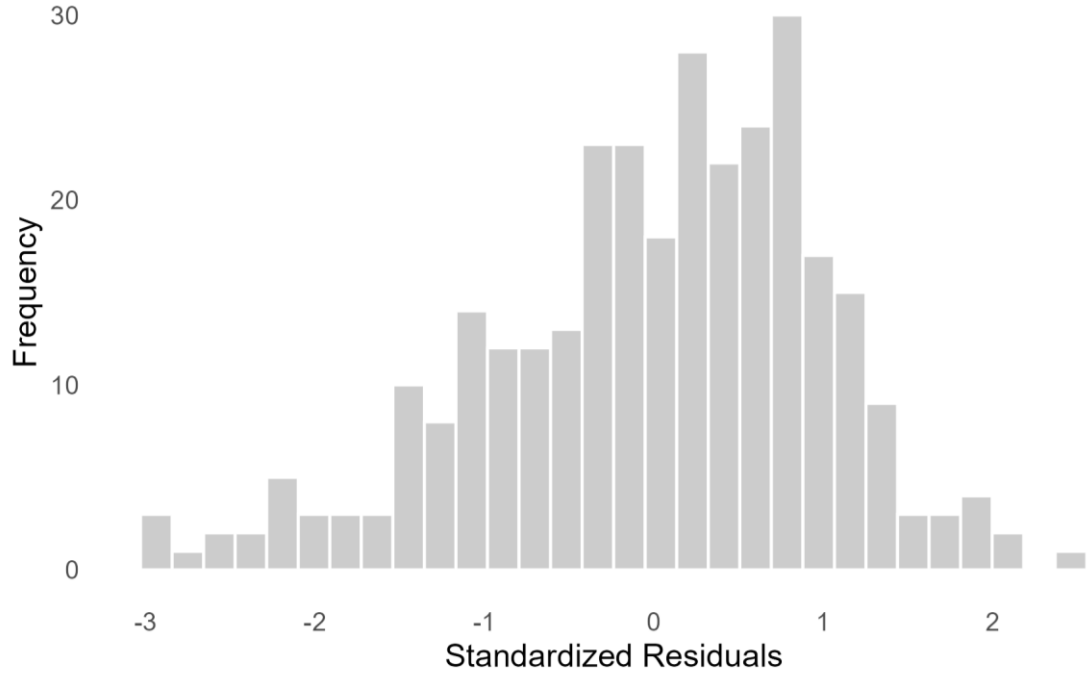


**Figure C9**

*Histogram H4 ITW-Unipolar*

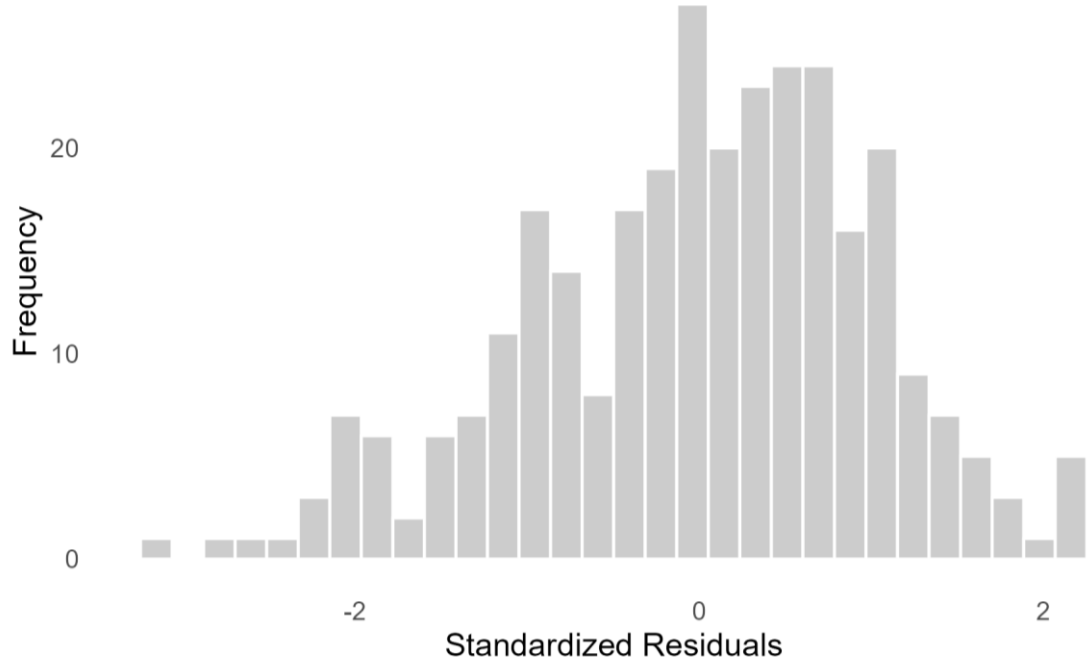



**Figure C10**

*Histogram H4 ITW-Bipolar*

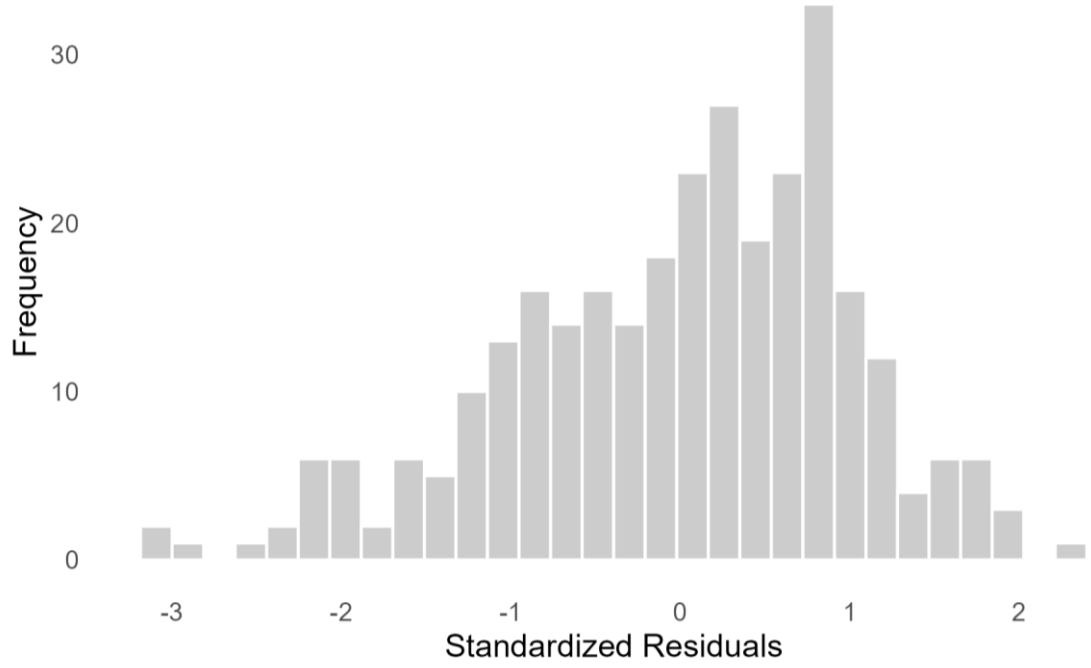


**Figure C11**

*Histogram H5 ITW-Unipolar*

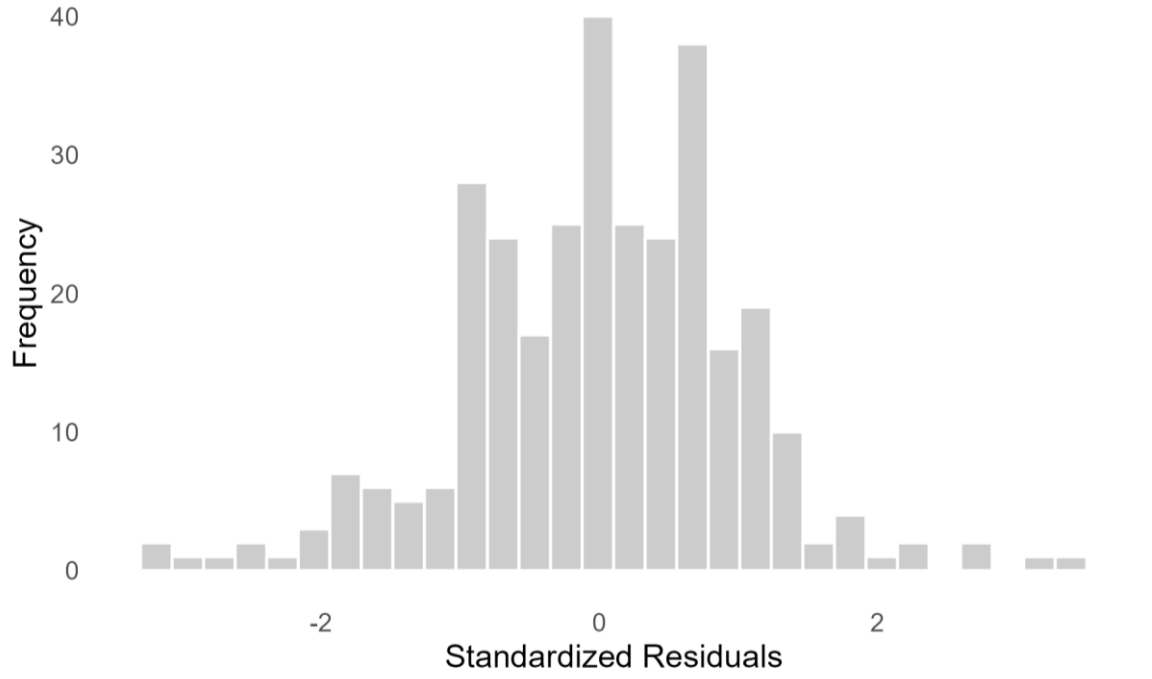



**Figure C12**

*Histogram H5 ITW-Bipolar*

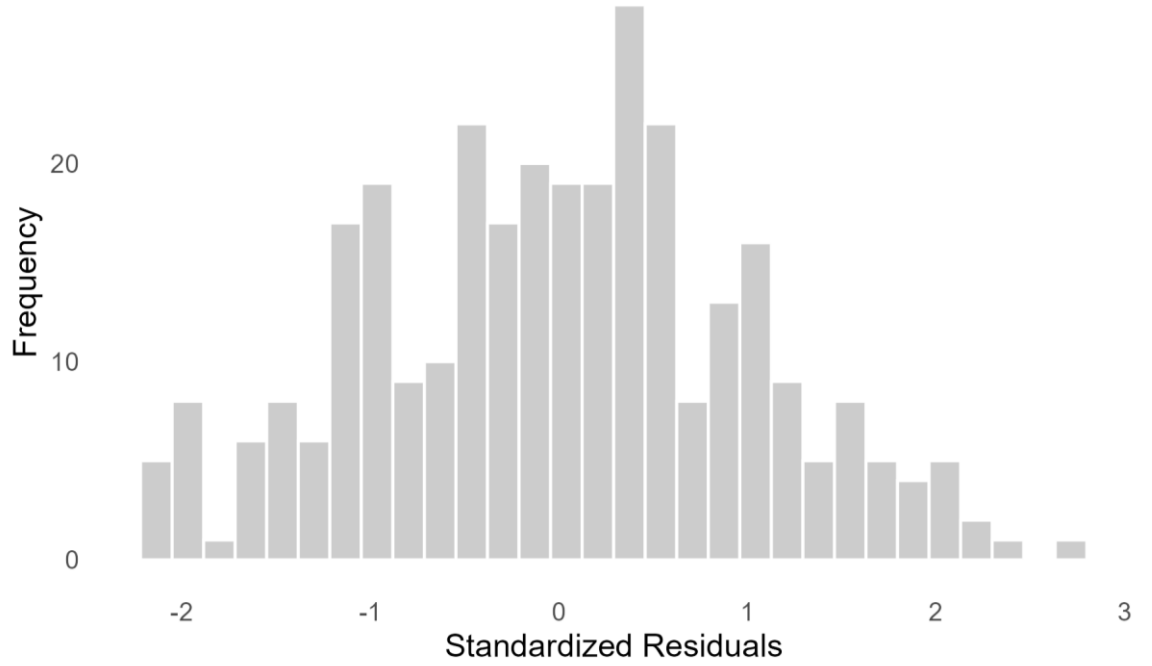


**Figure C13**

*Histogram H5 ITW-Unipolar (Controlling for Age)*

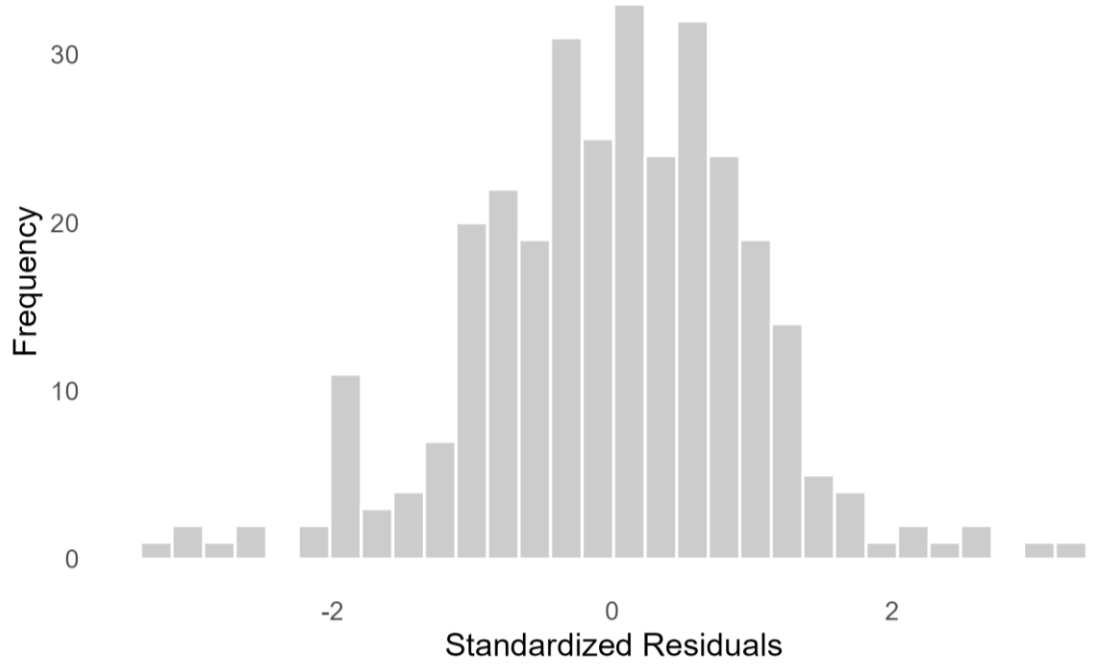
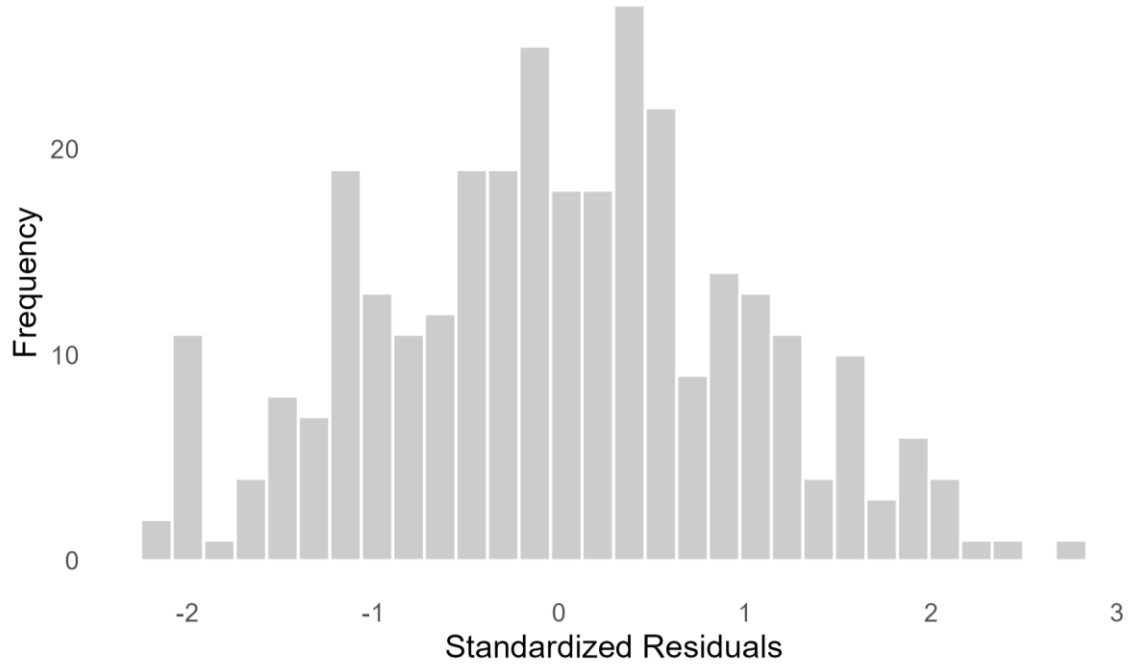



**Figure C14**

*Histogram H5 ITW-Bipolar (Controlling for Age)*



## Appendix D

## Scale-Location Plots of the Hypotheses

**Figure D1**

*Scale-Location Plot H1 ITW-Unipolar*

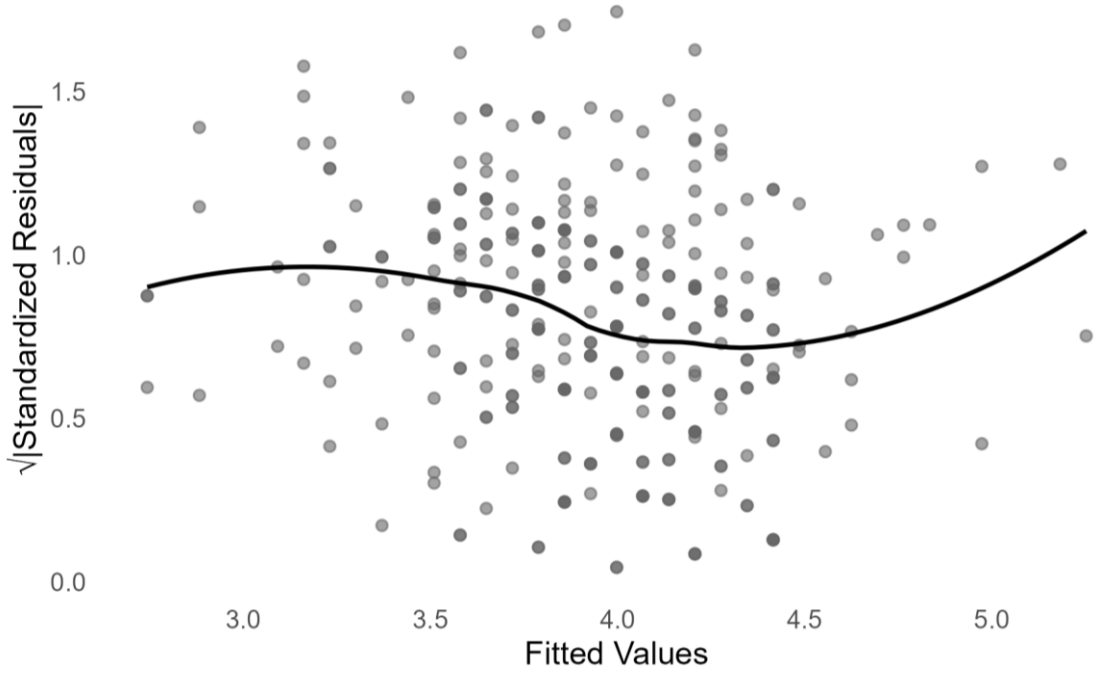



**Figure D2**

*Scale-Location Plot H1 ITW-Bipolar*

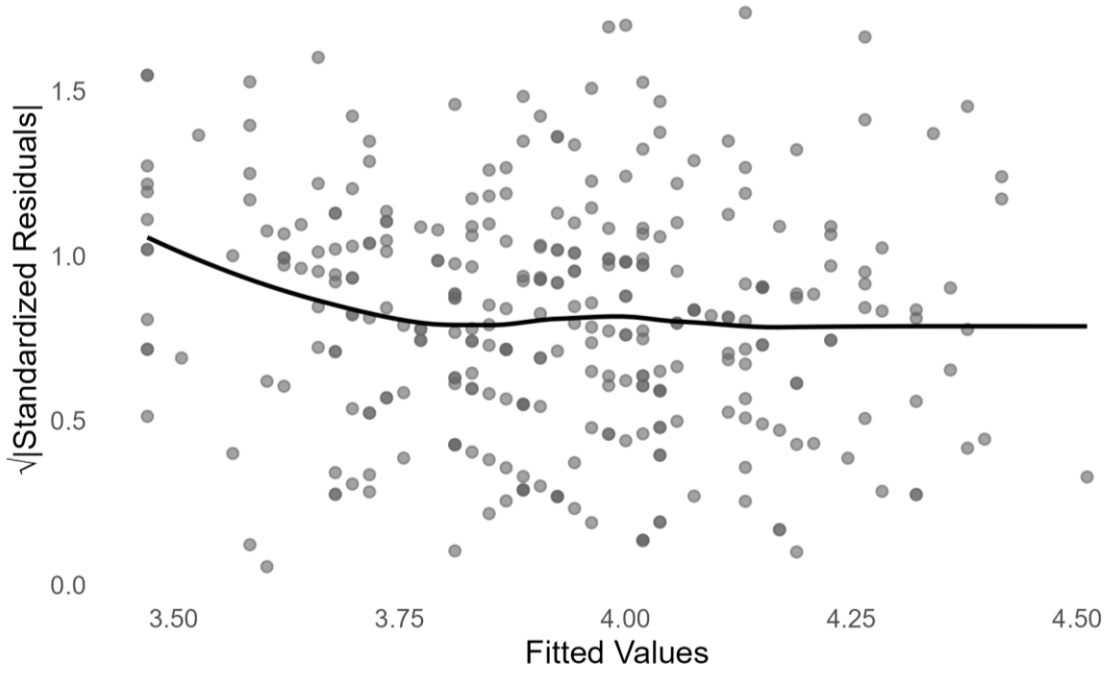


**Figure D3**

*Scale-Location Plot H2 ITW-Unipolar*

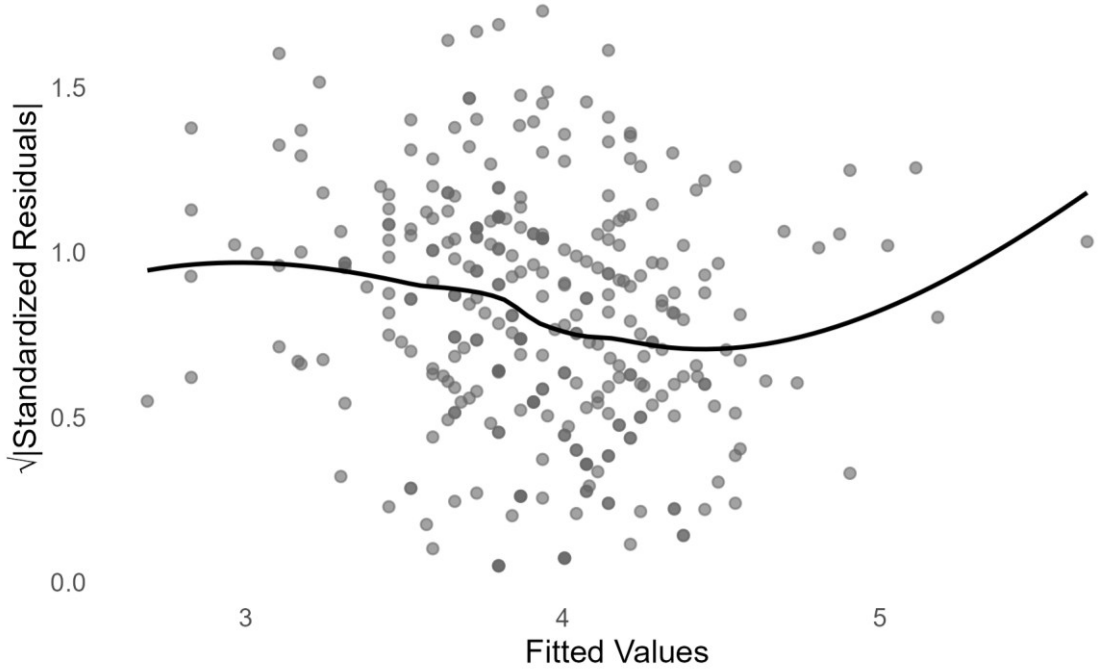



**Figure D4**

*Scale-Location Plot H2 ITW-Bipolar*

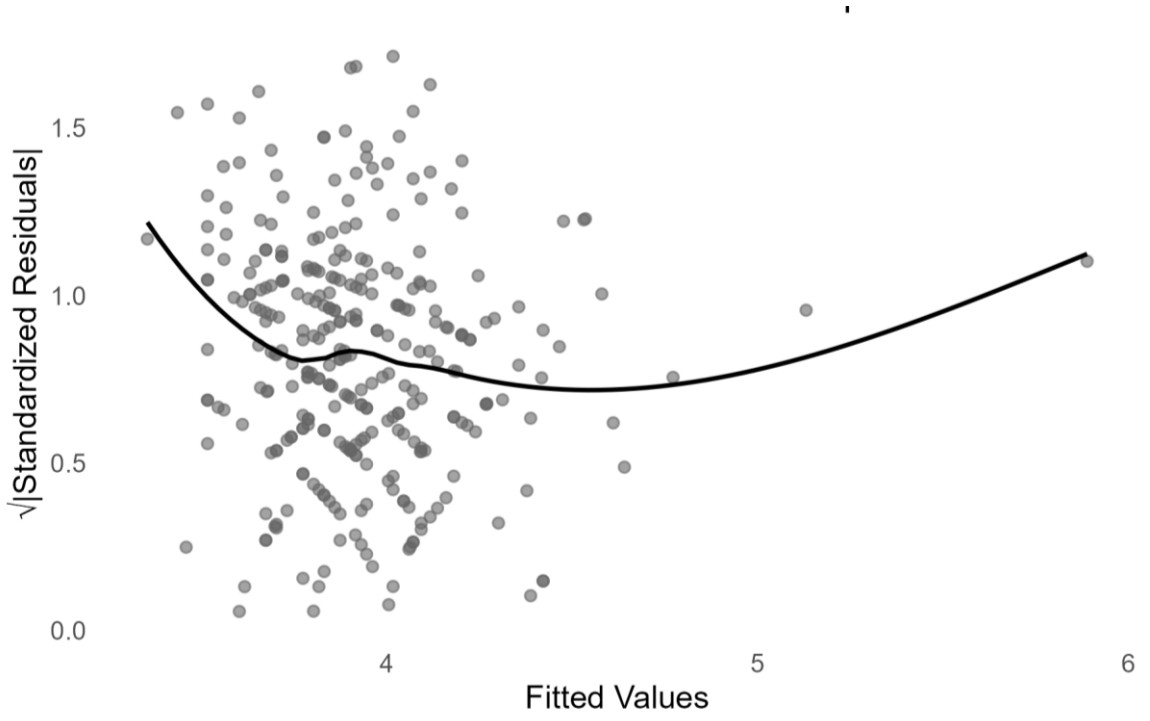


**Figure D5**

*Scale-Location Plot H3 ITW-Unipolar*

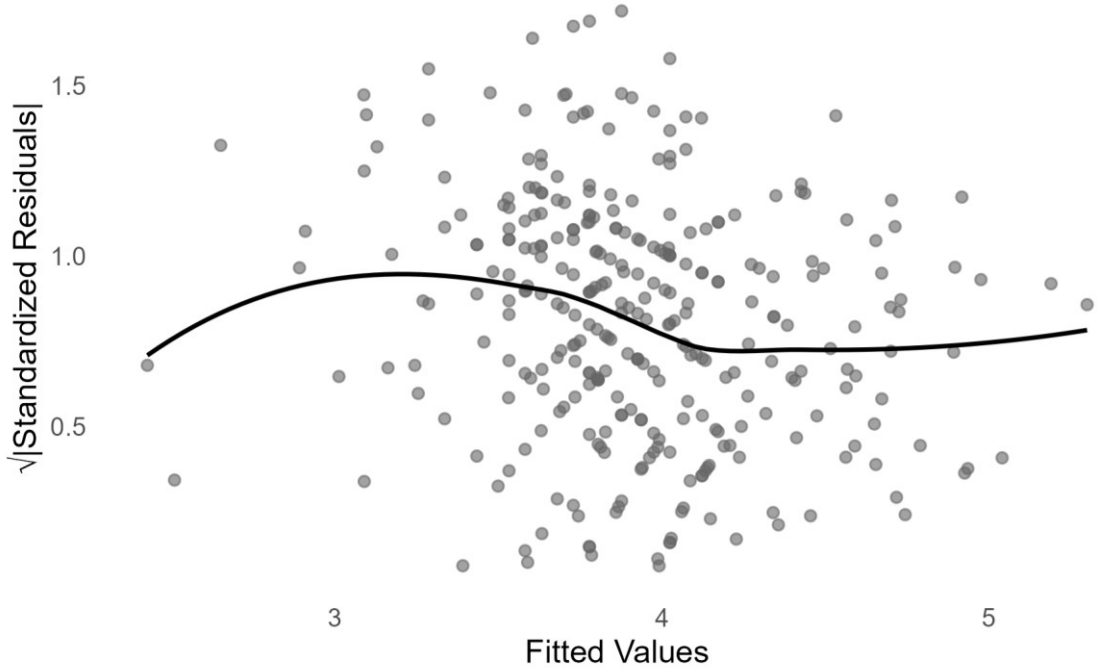



**Figure D6**

*Scale-Location Plot H3 ITW-Bipolar*

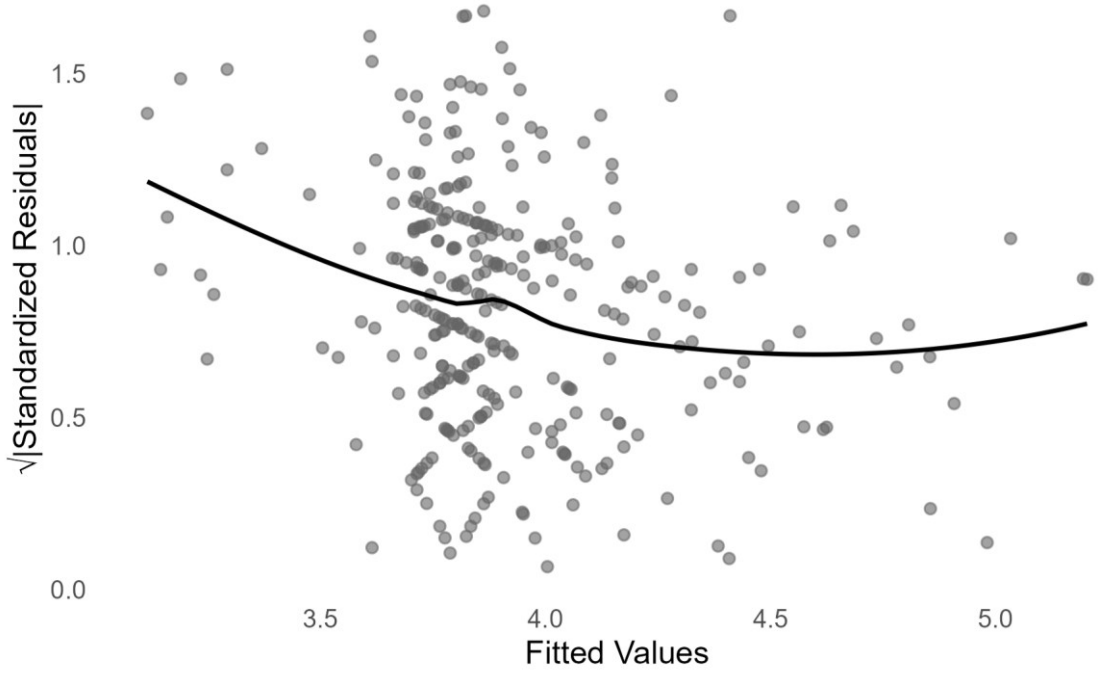


**Figure D7**

*Scale-Location Plot H3 ITW-Unipolar (Controlling for Age)*

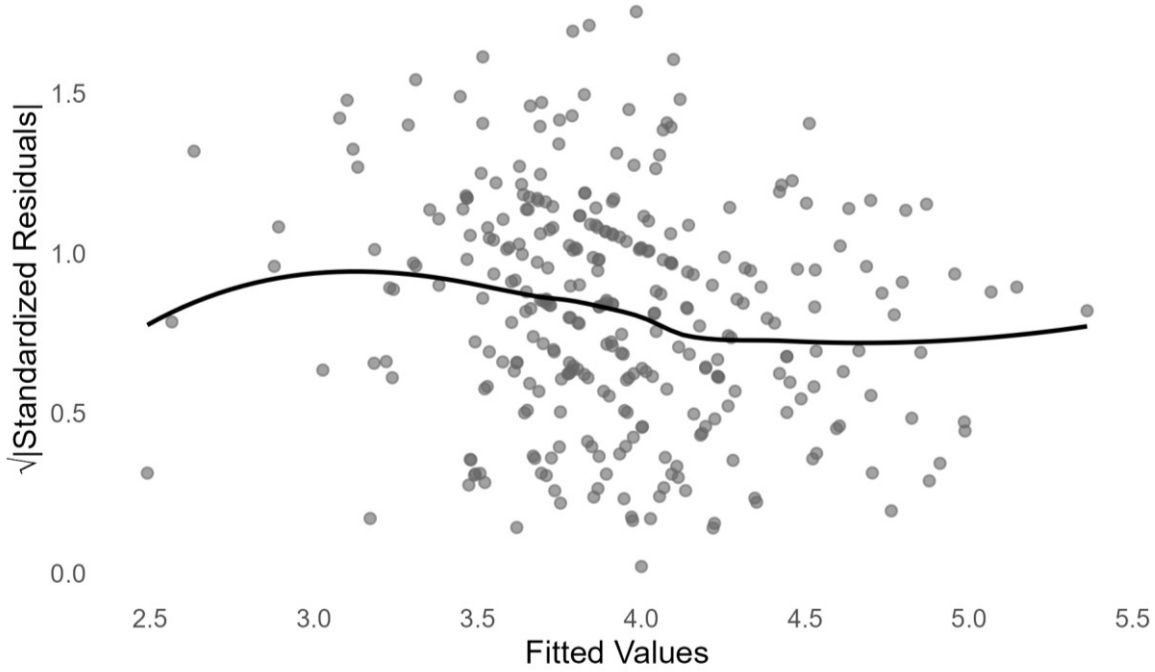



**Figure D8**

*Scale-Location Plot H3 ITW-Bipolar (Controlling for Age)*

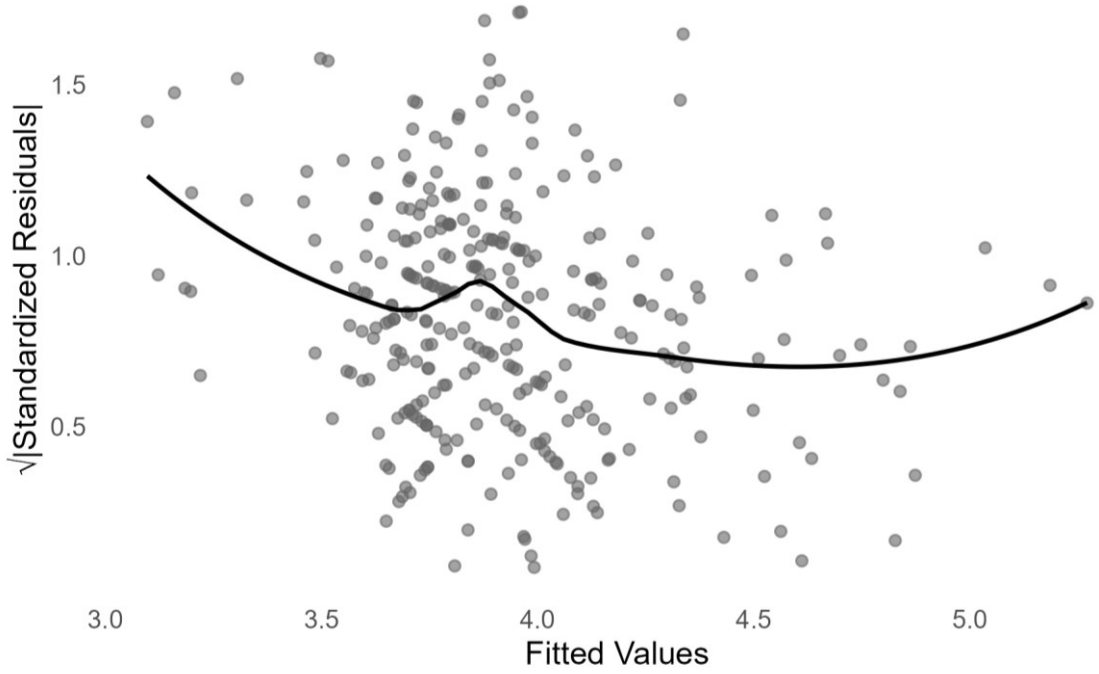


**Figure D9**

*Scale-Location Plot H4 ITW-Unipolar*

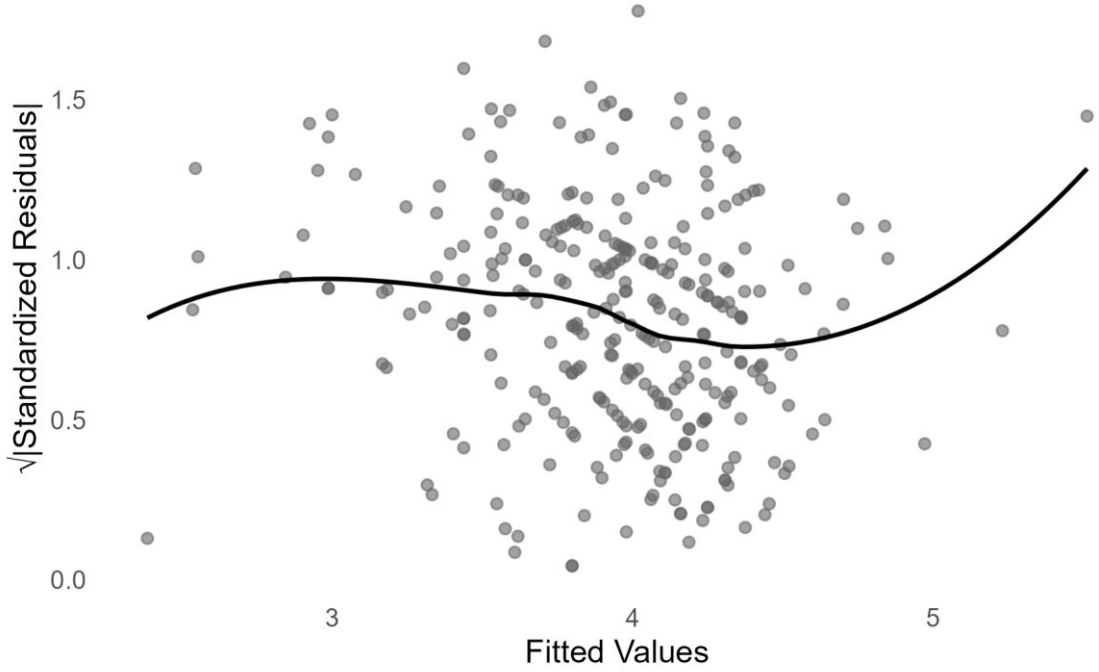



**Figure D10**

*Scale-Location Plot H4 ITW-Bipolar*

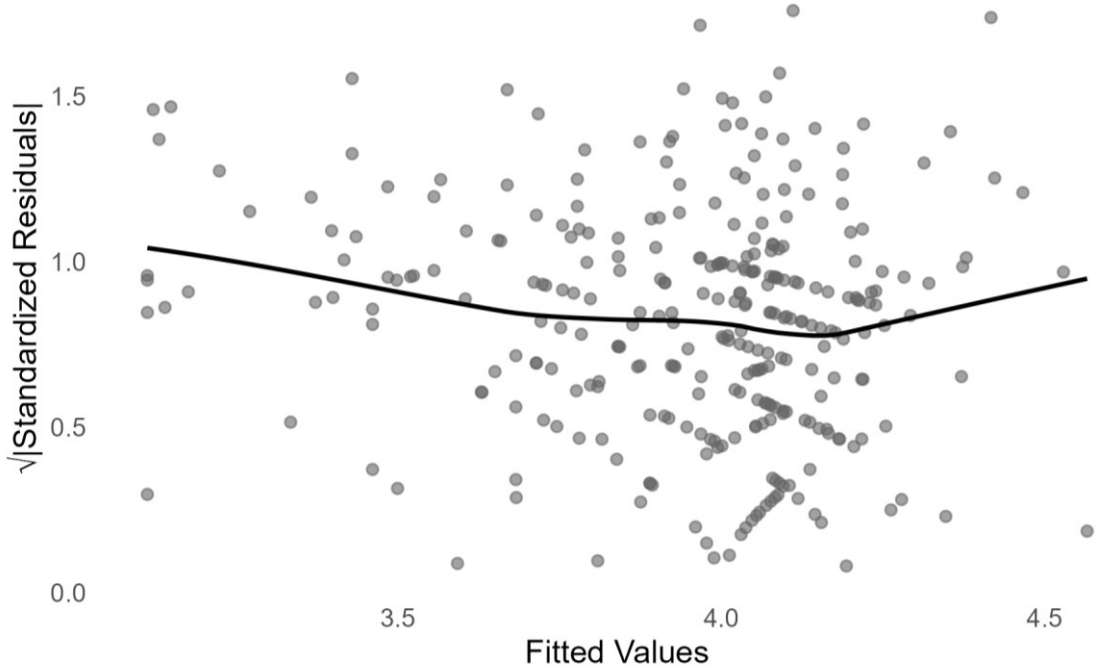


**Figure D11**

*Scale-Location Plot H5 ITW-Unipolar*

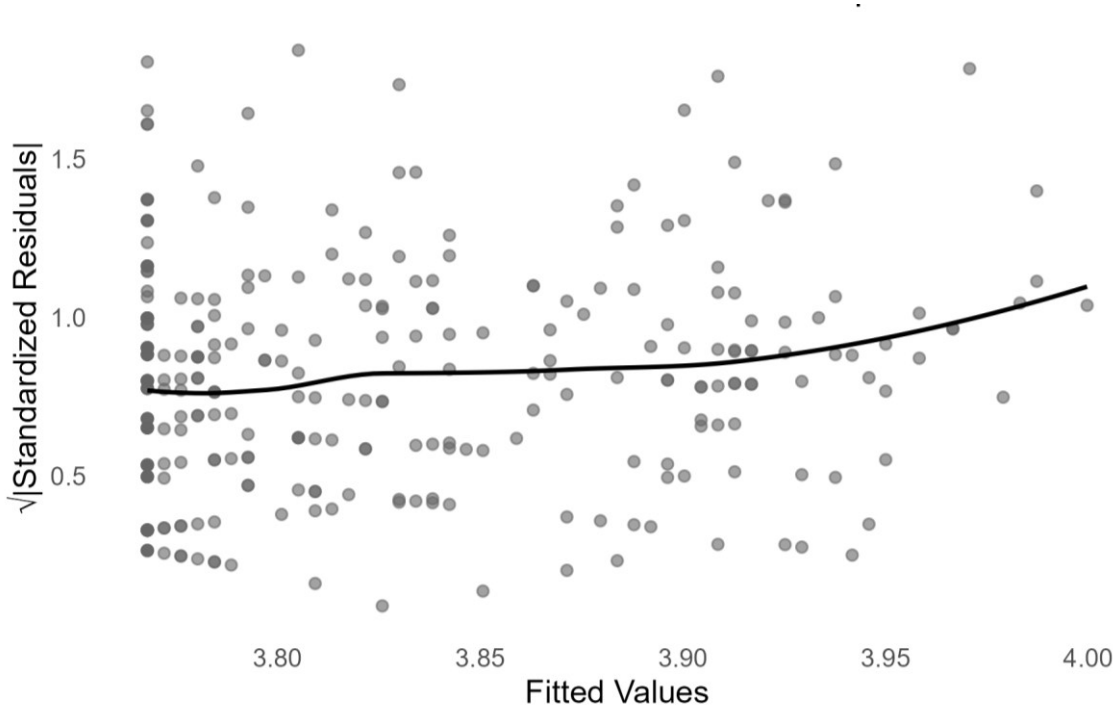



**Figure D12**

*Scale-Location Plot H5 ITW-Bipolar*

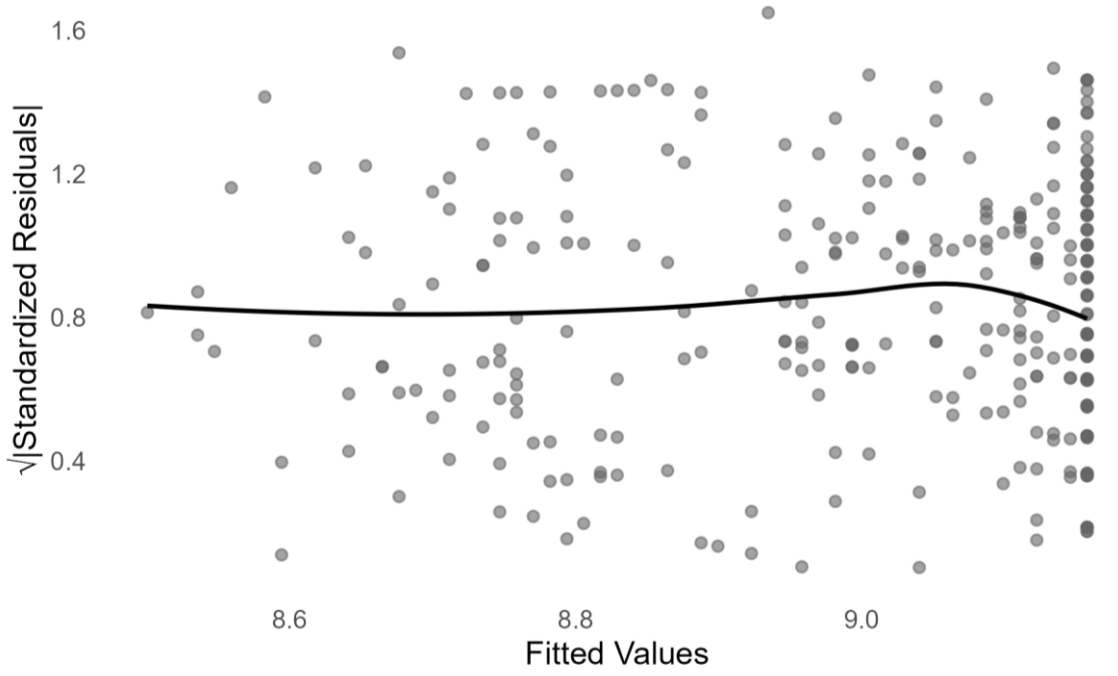


**Figure D13**

*Scale-Location Plot H5 ITW-Unipolar (Controlling for Age)*

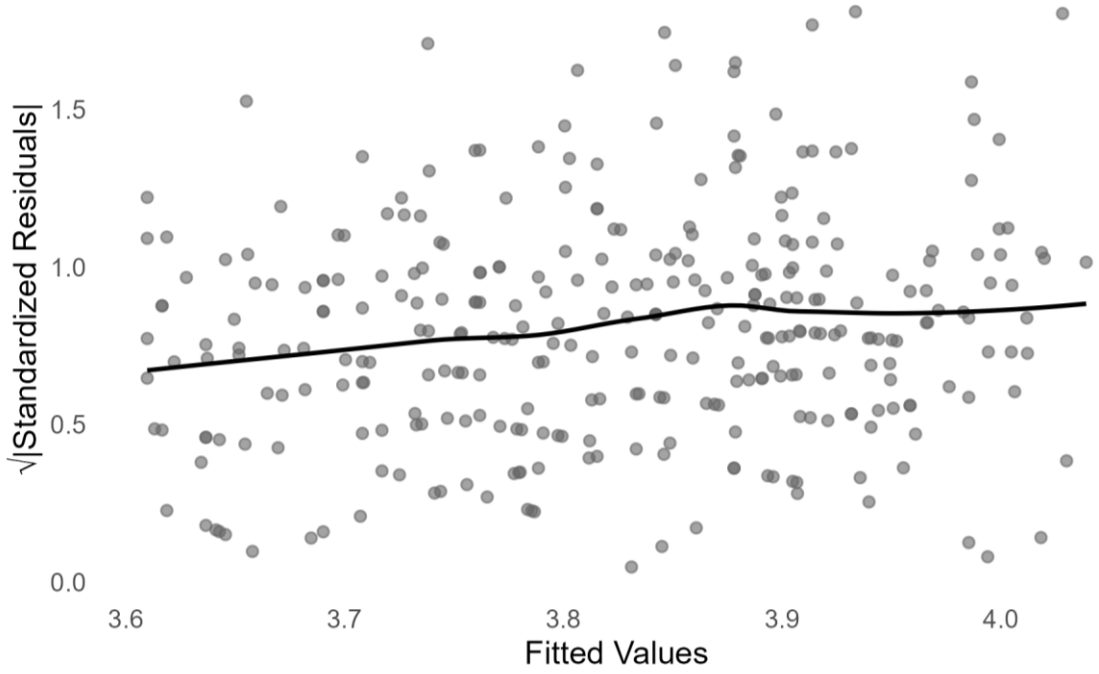
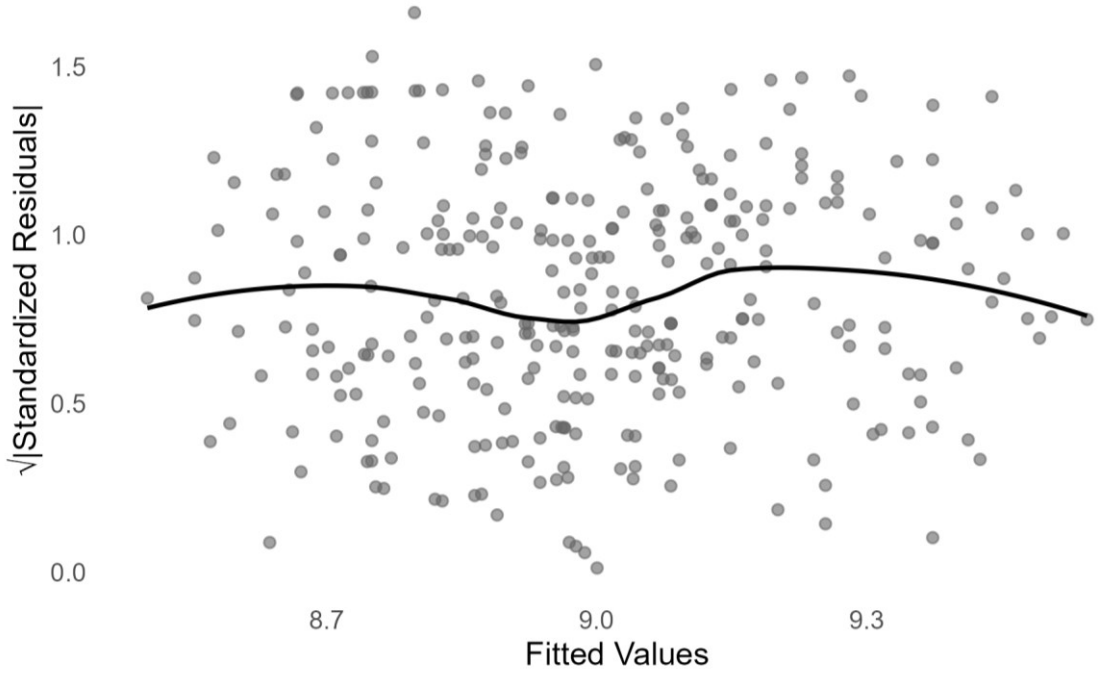



**Figure D14**

*Scale-Location Plot H5 ITW-Bipolar (Controlling for Age)*



## Appendix E

**Table E1**

*Means, standard deviations, and correlations of the alternative sample*

| Variable | *M* | *SD* | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|---|---|
| 1. ITW-unipolar | 3.87 | 0.92 | | | | | | |
| 2. ITW-bipolar | 9.49 | 3.83 | .43** | | | | | |
| 3. Well-being | 4.04 | 1.04 | .47** | .29** | | | | |
| 4. Number of children | 2.54 | 1.45 | .09 | -.02 | .18 | | | |
| 5. Age of the youngest child | 19.00 | 14.38 | -.09 | -.22* | .06 | -.15 | | |
| 6. Age of the oldest child | 24.09 | 14.57 | -.10 | -.25** | .09 | -.06 | .97** | |
| 7. Childcare percentage | 57.88 | 31.77 | .03 | .06 | .08 | .14 | -.23* | -.19* |

*Note.* *M* and *SD* are used to represent mean and standard deviation, respectively. * indicates $p < .05$. ** indicates $p < .01$.

**Table E2**

*Overview and Comparison of the Linear Regression Hypotheses*

| | Original[1] | | | | | | Explorative[2] | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *B* | *SE* | *t* | *95% CI* | | *p* | *B* | *SE* | *t* | *95% CI* | | *p* |
| Hypotheses | | | | *LL* | *UL* | | | | | *LL* | *UL* | |
| H1 (ITW-unipolar)[3] | 0.42 | 0.06 | 7.06 | 0.30 | 0.54 | < .001*** | 0.54 | 0.09 | 5.77 | 0.35 | 0.72 | < .001*** |
| H1 (ITW-bipolar)[3] | 0.06 | 0.02 | 3.69 | 0.03 | 0.09 | < .001*** | 0.08 | 0.02 | 3.29 | 0.03 | 0.3 | .001** |
| H5 (ITW-unipolar)[3] | 0.004 | 0.004 | 1.18 | -0.003 | 0.011 | .241 | -0.006 | 0.006 | -1.08 | -0.018 | 0.006 | 0.284 |
| H5 (ITW-bipolar)[3] | -0.012 | 0.014 | -0.82 | -0.039 | 0.016 | .414 | -0.067 | 0.024 | -2.82 | -0.114 | -0.019 | .006** |
| H5 (ITW-unipolar)[4] | -0.003 | 0.005 | -0.51 | -0.013 | 0.008 | .608 | -0.039 | 0.015 | -2.65 | -0.067 | -0.010 | .009** |
| H5 (ITW-bipolar)[4] | -0.022 | 0.022 | -0.99 | -0.064 | 0.020 | .321 | -0.171 | 0.059 | -2.89 | -0.288 | -0.055 | .005** |

*Note.* [1] Hypotheses tested with the original sample. [2] Hypotheses tested with a sample in which cases where the number of children equaled one were excluded. [3] Simple linear regression [4] Multiple linear regression controlling for age. * indicates $p < .05$. ** indicates $p < .01$. ***indicates < .001.

**Table E3**

*Overview and comparison of the moderation analyses for H2*

| Hypothesis | Original[1] | | | | | | Explorative[2] | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *b* | *SE* | *t* | *95% CI* | | *p* | *b* | *SE* | *t* | *95% CI* | | *p* |
| | | | | *LL* | *UL* | | | | | *LL* | *UL* | |
| H2 | | | | | | | | | | | | |
| ITW-unipolar | 0.41 | 0.06 | 6.93 | 0.29 | 0.53 | <.001*** | 0.74 | 0.13 | 5.75 | 0.49 | 0.99 | <.001*** |
| Number of children | 0.11 | 0.06 | 1.96 | -0.00 | 0.22 | .051 | 0.25 | 0.09 | 2.93 | 0.08 | 0.42 | .004** |
| ITW-unipolar x number of children | -0.01 | 0.06 | -0.18 | -0.12 | 0.10 | .857 | -0.22 | 0.09 | -2.38 | -0.40 | -0.04 | .019* |
| ITW-bipolar | 0.06 | 0.02 | 3.66 | 0.03 | 0.09 | <.001*** | 0.07 | 0.04 | 2.08 | 0.00 | 0.14 | .040* |
| Number of children | 0.10 | 0.05 | 1.96 | 0.00 | 0.20 | .051 | 0.13 | 0.07 | 1.79 | -0.01 | 0.27 | .076 |
| ITW-bipolar x number of children | 0.02 | 0.02 | 1.26 | -0.01 | 0.06 | .209 | 0.01 | 0.03 | 0.28 | -0.05 | 0.07 | .782 |

*Note.* [1]Hypotheses tested with the original sample. [2]Hypotheses tested, excluding cases where the number of children equals one. [3]Controllin for age. * indicates $p < .05$. ** indicates $p < .01$. ***indicates < .001.

**Table E4**

*Overview and comparison of the moderation analyses for H3*

| Hypothesis | Original[1] | | | | | | Explorative[2] | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *b* | *SE* | *t* | *95% CI* | | *p* | *b* | *SE* | *t* | *95% CI* | | *p* |
| | | | | *LL* | *UL* | | | | | *LL* | *UL* | |
| H3 | | | | | | | | | | | | |
| ITW-unipolar | 0.04 | 0.06 | 6.69 | 0.28 | 0.51 | <.001*** | 0.44 | 0.11 | 4.12 | 0.23 | 0.66 | <.001*** |
| Age of the youngest child | 0.008 | 0.004 | 2.01 | 0.000 | 0.016 | .046* | 0.007 | 0.006 | 1.27 | -0.005 | 0.020 | .208 |
| ITW-unipolar x age of the youngest child | 0.009 | 0.004 | 2.17 | 0.001 | 0.017 | .031* | 0.012 | 0.007 | 1.85 | -0.001 | 0.025 | .067 |
| ITW-bipolar | 0.06 | 0.02 | 3.66 | 0.03 | 0.08 | <.001*** | 0.06 | 0.03 | 2.23 | 0.01 | 0.11 | .028* |
| Age of the youngest child | 0.012 | 0.004 | 2.80 | 0.004 | 0.020 | 0.006** | 0.008 | 0.007 | 1.29 | -0.005 | 0.021 | .200 |
| ITW-bipolar x age of the youngest child | 0.003 | 0.001 | 2.95 | 0.001 | 0.005 | .003** | 0.004 | 0.002 | 2.26 | 0.001 | 0.008 | .026* |

*Note.* [1]Hypotheses tested with the original sample. [2]Hypotheses tested, excluding cases where the number of children equals one.

[3]Controlling for age. * indicates $p < .05$. ** indicates $p < .01$. ***indicates < .001.

**Table E5**

*Overview and comparison of the moderation analyses for H4*

| Hypothesis | Original[1] | | | | | | Explorative[2] | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *b* | *SE* | *t* | *95% CI* | | *p* | *b* | *SE* | *t* | *95% CI* | | *p* |
| | | | | *LL* | *UL* | | | | | *LL* | *UL* | |
| H4 | | | | | | | | | | | | |
| ITW-unipolar | 0.41 | 0.06 | 6.93 | 0.29 | 0.52 | <.001*** | 0.61 | 0.09 | 6.41 | 0.42 | 0.79 | <.001*** |
| Childcare percentage | 0.002 | 0.002 | 1.10 | -0.001 | 0.005 | .273 | 0.002 | 0.003 | 0.81 | -0.003 | 0.007 | .420 |
| ITW-unipolar x childcare percentage | -0.003 | 0.002 | -1.82 | -0.006 | 0.000 | 0.70 | -0.007 | 0.003 | -2.67 | -0.012 | -0.002 | .009** |
| ITW-bipolar | 0.05 | 0.02 | 3.51 | 0.02 | 0.09 | .001** | 0.10 | 0.03 | 3.93 | 0.05 | 0.15 | <.001*** |
| Childcare percentage | 0.002 | 0.002 | 1.24 | -0.001 | 0.005 | .218 | 0.002 | 0.003 | 0.52 | -0.004 | 0.006 | .604 |
| ITW-bipolar x childcare percentage | -0.001 | 0.000 | -2.08 | -0.002 | 0.000 | .038* | -0.002 | 0.001 | -2.44 | -0.003 | -0.001 | .016* |

*Note.* [1]Hypotheses tested with the original sample. [2]Hypotheses tested, excluding cases where the number of children equals one. [3]Controlling for age. * indicates $p < .05$. ** indicates $p < .01$. ***indicates < .001.

**Figure E1**

*Interaction between ITW-bipolar and number of children predicting well-being with the alternative sample*

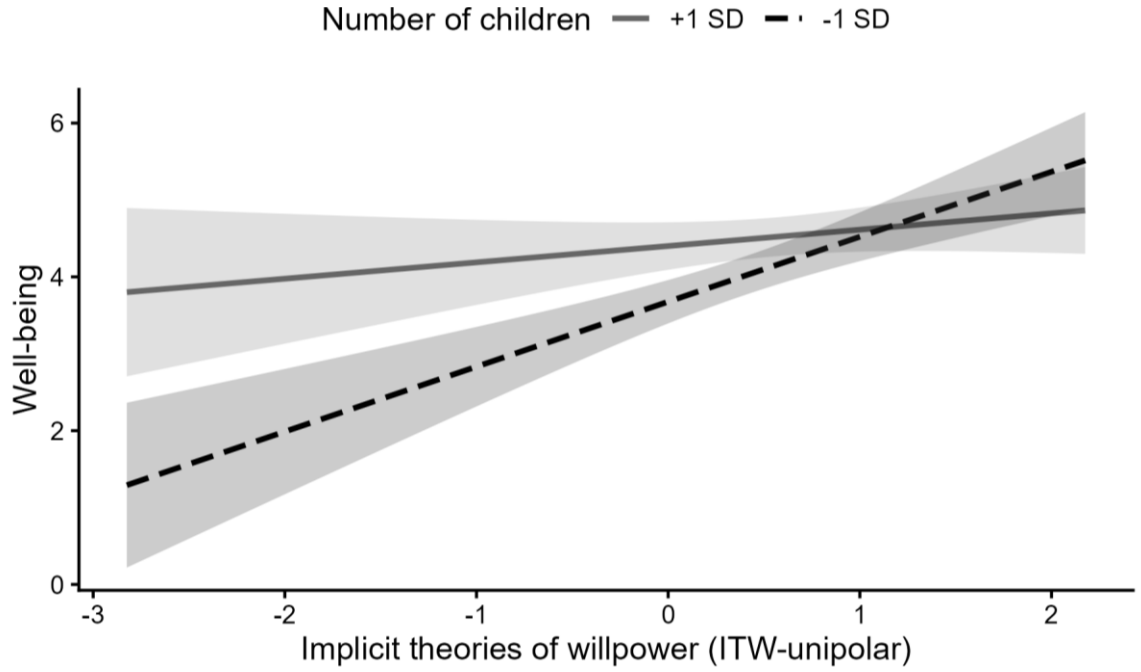



**Figure E2**

*Interaction between ITW-bipolar and the age of the youngest child predicting well-being with the alternative sample*

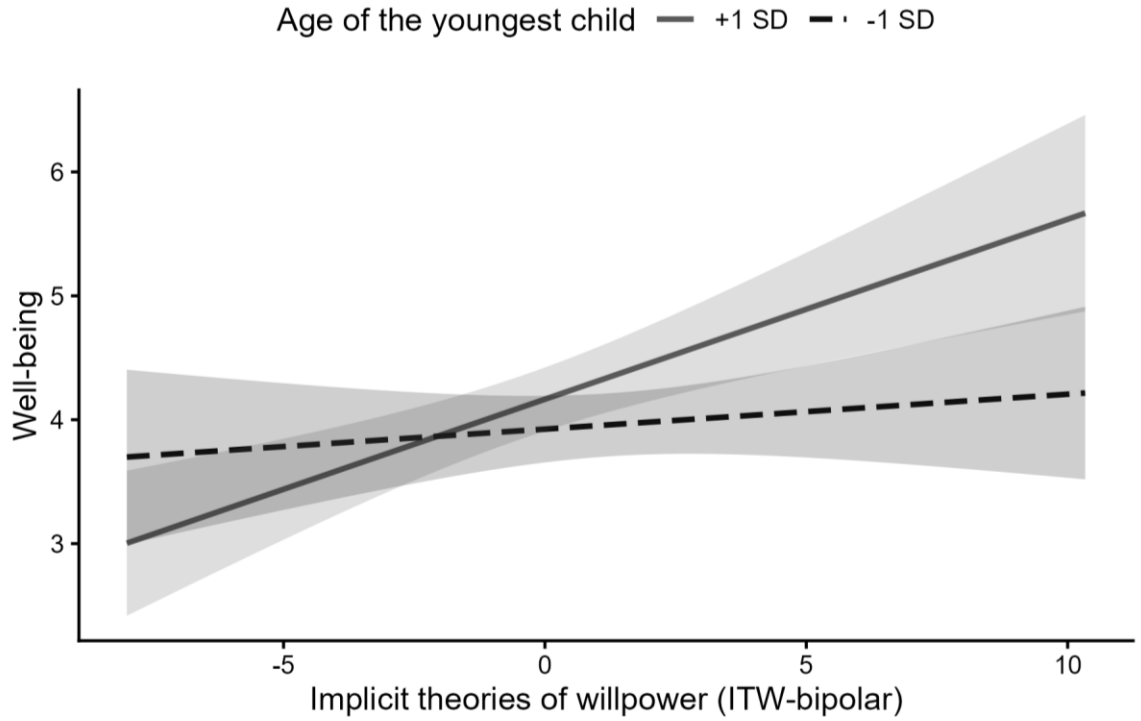


**Figure E3**

*Interaction between ITW-bipolar and the age of the youngest child predicting well-being with the alternative sample (controlling for age)*

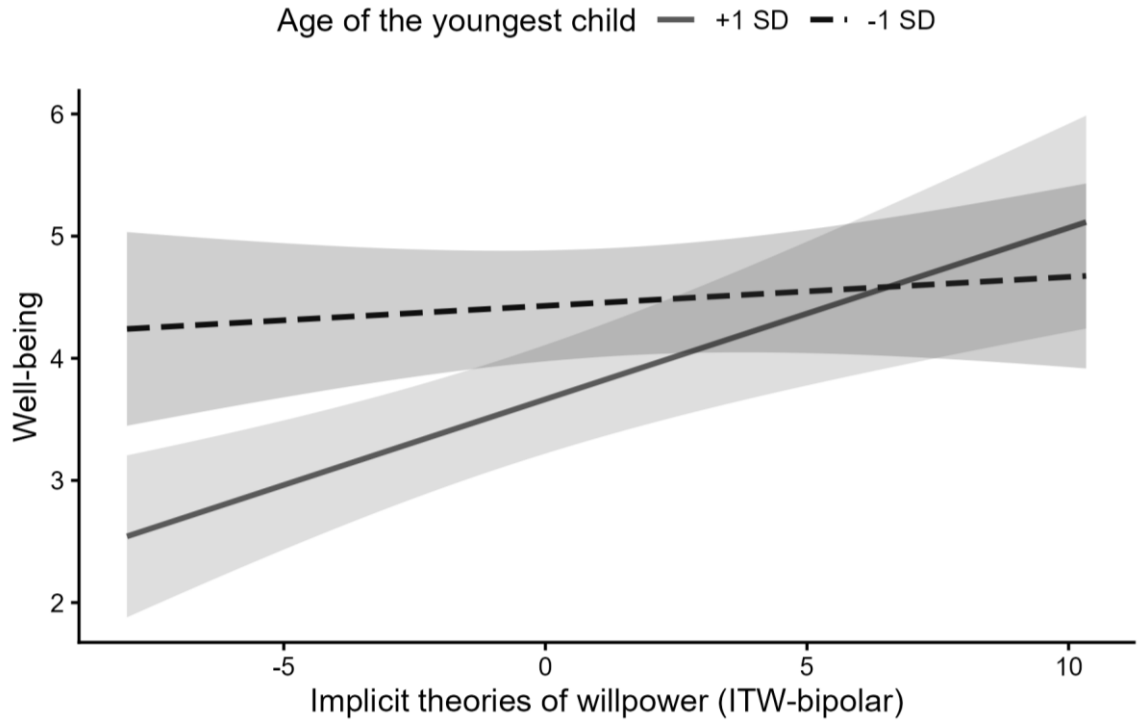



**Figure E4**

*Interaction between ITW-unipolar and childcare percentage predicting well-being with the alternative sample*

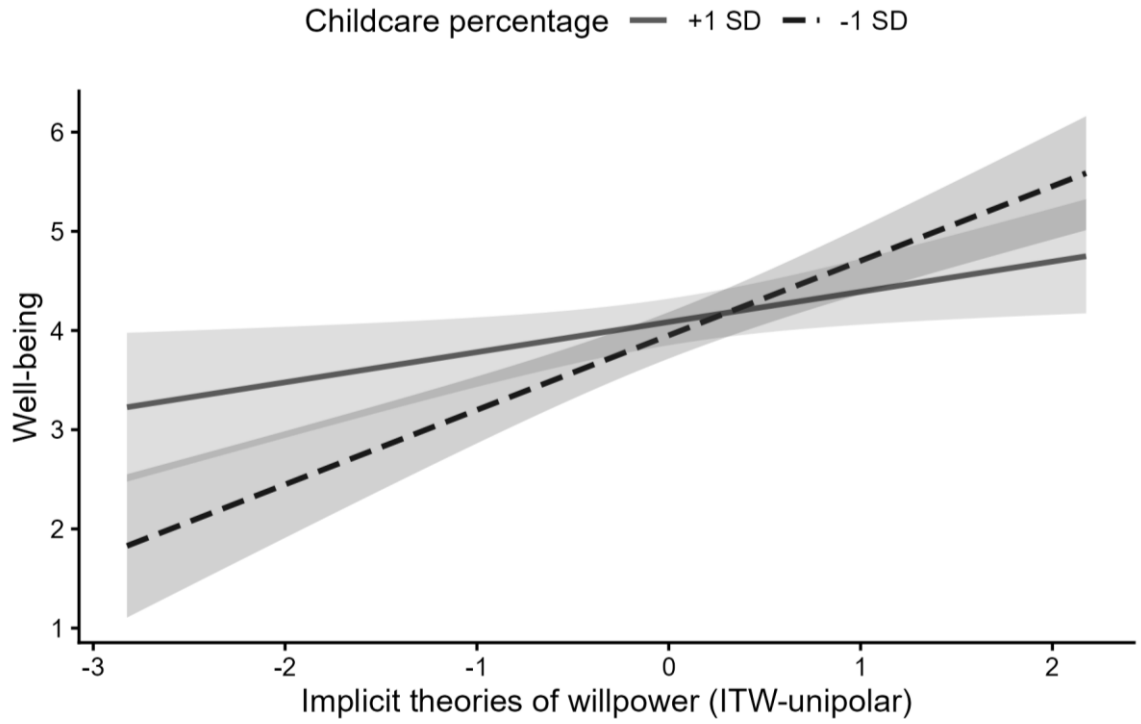
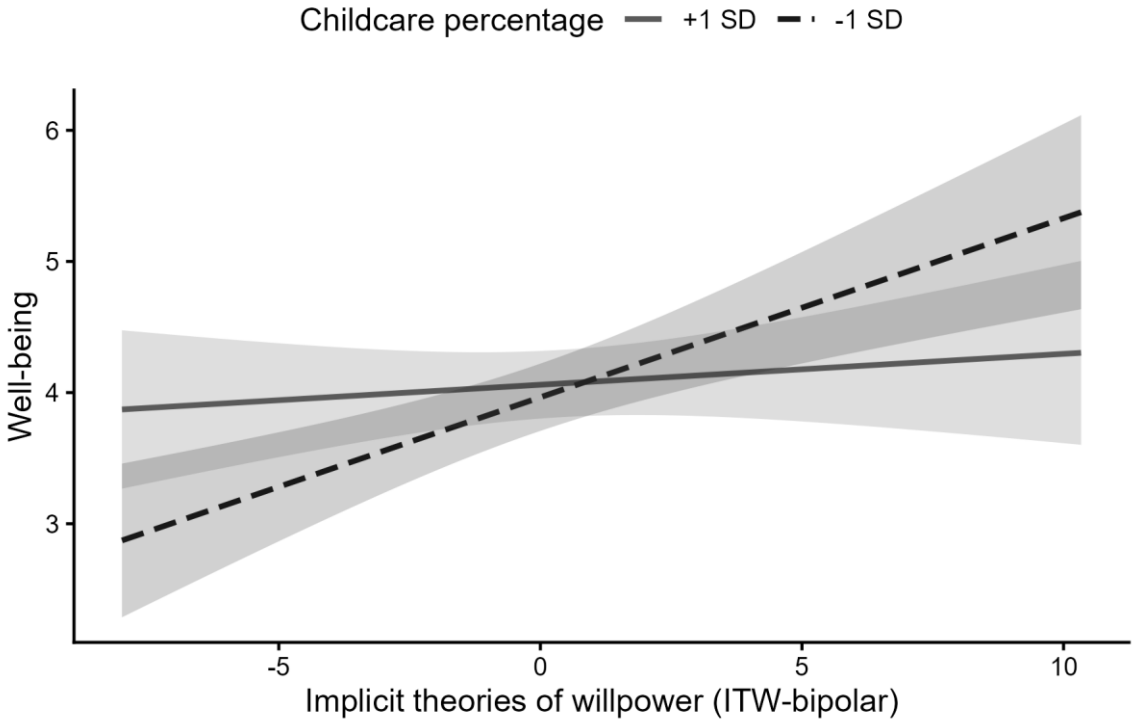


**Figure E5**

*Interaction between ITW-bipolar and childcare percentage predicting well-being with the alternative sample*



## Appendix F

**Figure F1**

*Interaction between age of the youngest child and ITW-unipolar predicting well-being*

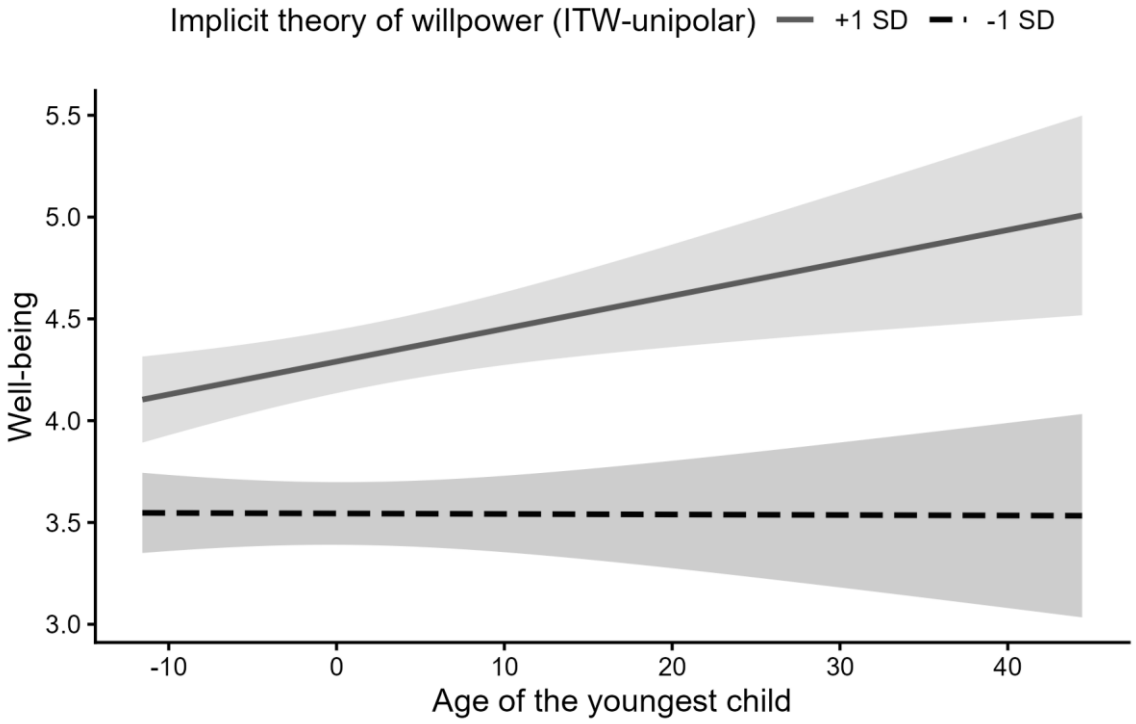



**Figure F2**

*Interaction between age of the youngest child and ITW-bipolar predicting well-being*

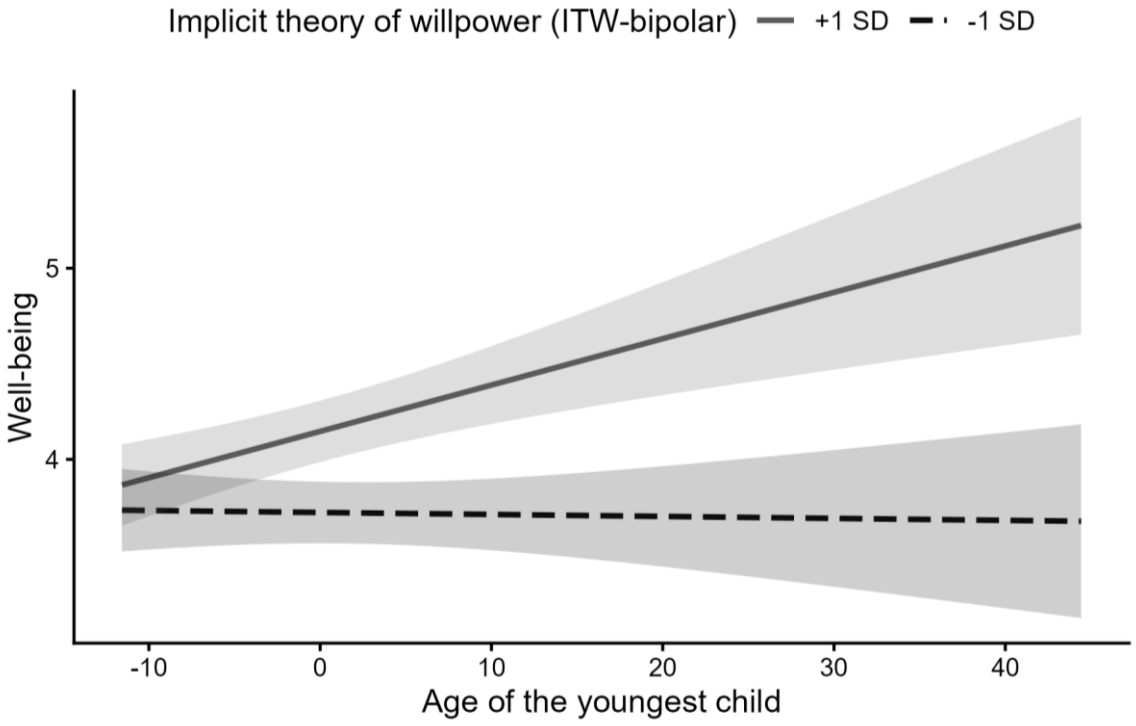
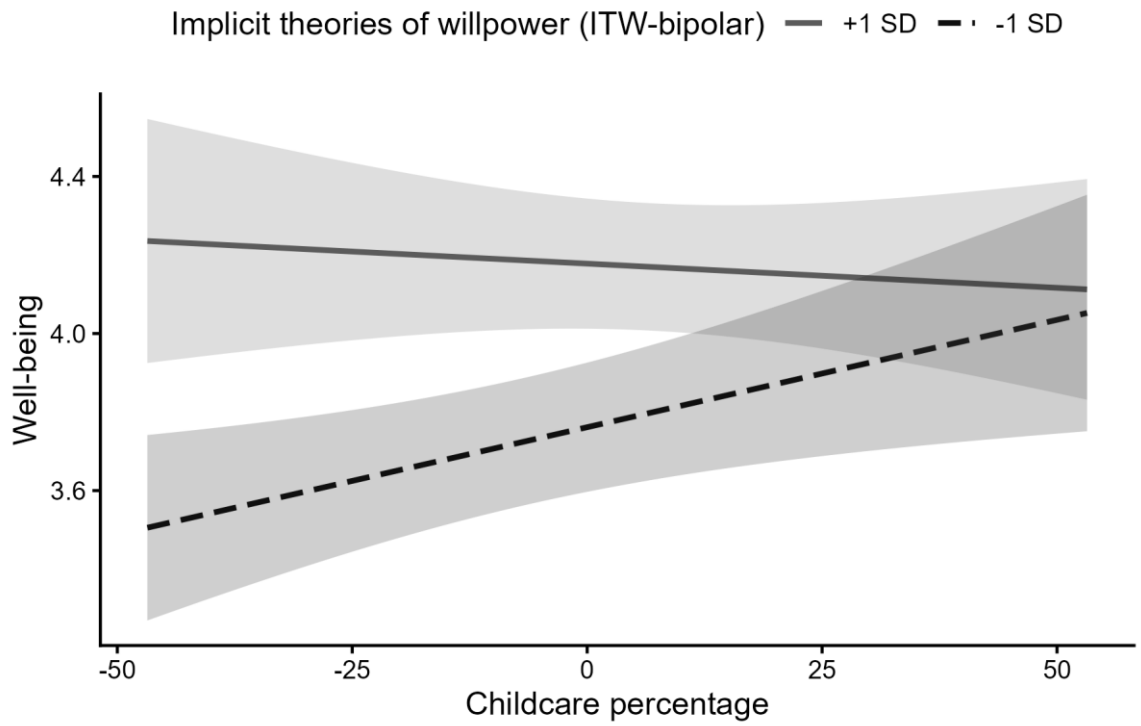


**Figure F3**

*Interaction between childcare percentage and ITW-bipolar predicting well-being*



**Erklärung zur Verwendung von Künstlicher Intelligenz (KI)**

Hiermit erkläre ich, dass ich die folgenden KI-Hilfsmittel zur Erstellung meiner Masterarbeit mit dem Titel „What Keeps Parents Going? Implicit Theories of Willpower and Well-Being in Parents“ verwendet habe. Ich versichere, dass die Kennzeichnung der verwendeten KI-Hilfsmittel vollständig ist, inkl. Verwendungszweck, Produktname, als auch ggfs. Prompts und Outputs des KI-Hilfsmittels. Ich verantworte die Auswahl und die Übernahme sämtlicher Ergebnisse der von mir verwendeten KI-Hilfsmittel vollumfänglich selbst.

| **Verwendungszweck*** | **Produktname des KI-Hilfsmittels** | **Ggfs. Prompt (Input) und Output des KI-Hilfsmittels** |
|---|---|---|
| Hilfe im Umgang mit RStudio | ChatGPT | |
| Unterstützung bei der Formulierung von Sätzen | Grammarly | |
| Übersetzung von Textabschnitten | Deepl | |
| Unterstützung bei der Strukturierung des Diskussionsteils | ChatGPT | |
| Suche spezifischer Absätze in Papern | Chatpdf | |

* Hilfsmittel zur Überprüfung von Grammatik und Rechtschreibung oder der automatisierten Erstellung des Literaturverzeichnisses sind von dieser Erklärung ausgenommen.