

Master thesis

Radboud Universiteit



The moderating influence of gender on authentic leadership and employee well-being

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Date of submission: 16th of June 2024

Acknowledgments

The last part of the master's specialization Strategic Human Resources Leadership of Business Administration at Radboud University is writing a master's Thesis. Writing a thesis comes with the necessary struggles and frustrations, but it also gave me insightful topics, and using a quantitative method expanded my academic skills. But I didn't write this thesis on my own, so I would like to thank a few people who've helped me during this process.

Starting with my supervisor Dr. Sofija Pajic for her feedback and input these last months. She gave me constructive feedback but also considered my ideas good. In addition, I worked in a thesis circle with four other students. I want to thank Kim, Franka, Elyssa, and Woukelien, I enjoyed working together and how we helped and inspired each other, even with the smallest questions. Furthermore, I would like to thank my second examiner, Dr. Yvonne van Rossenberg for challenging me with a different perspective and bringing new insights. Lastly, I would like to thank my parents for proofreading my thesis and supporting me throughout this process.

Lara van Velsen

's-Hertogenbosch, 16th of June 2024

Abstract

After the COVID-19 pandemic, employee well-being is important to foster sustainable growth, as employee well-being covers the entire organization. In addition, leaders play a crucial role in the organization, and their behavior has an impact on the work behavior, performance, and well-being of their employees. This study investigates the relationships between authentic leadership, employee well-being, and leader gender. Authentic leadership emphasizes self-awareness, moral perspective, relational transparency, and unbiased processing. Employee well-being is measured with generic well-being (hedonic well-being) and job-related well-being (job satisfaction).

Using data collected from an online survey administrated via Qualtrics from April 22nd to May 7th, 2024, this study shows that authentic leadership has a significantly, positive correlation to job satisfaction ($\beta = .354$, $p = .000$) but not significantly with hedonic well-being ($\beta = .174$, $p = .129$). Moreover, using a moderation regression analysis, the study indicates no significant moderating effect for leader gender in these relationships. However, both male and female supervisors positively influence job satisfaction, with female supervisors having a somewhat stronger correlation. Furthermore, exploratory analyses show gender variations in leadership evaluations, with males ranking themselves higher in authenticity and employees considering female leaders as more authentic.

To conclude, authentic leadership behavior positively influences employee well-being and gender does not significantly impact this relationship. The findings highlight the necessity of developing authentic leadership to improve employee well-being and job satisfaction. To gain a better understanding of these relationships, future research should include longitudinal studies as well as additional moderators and mediators. We admit our limitations, including convenience sampling, possible biases, and a cross-sectional research design that limits causal inferences.

Keywords: authentic leadership behavior, employee well-being, leader gender, hedonic well-being, job satisfaction.

Table of Contents

Acknowledgments	2
Abstract	3
Table of Contents.....	4
1. Introduction	6
2. Theoretical framework.....	9
2.1 Social Role Theory.....	9
2.2 Authentic leadership behavior and employee well-being.....	10
2.3 The role of gender in the relationship between authentic leadership and employee well-being..	11
2.4 Conceptual model.....	13
3. Methodology.....	14
3.1 Research design, data collection, and procedure.....	14
3.3 Sample.....	15
3.4 Measures.....	16
3.5 Data analysis.....	18
3.6 Ethics.....	19
4. Results.....	20
4.1 Descriptives and reliability	20
4.2 Correlations.....	21
4.3 Assumptions testing	22
4.4 Hypothesis testing	23
4.4.1 Direct effect of authentic leadership behavior on employee well-being.....	23
4.4.2 Moderating effect of gender.....	24
4.4.3 Control variables	24
4.4.4 Additional analysis	25
5. Discussion	27
5.1 Discussion of the findings	27
5.2 Theoretical and practical implications.....	28

5.3 Limitations & recommendations for future research.....	29
5.4 Conclusion.....	30
References	31
Appendices	42
Appendix 1 Assumptions testing	42
1.1 Linearity.....	42
1.2 Normality.....	44
1.3 Homoscedasticity	44
1.4 Independence of error items	45
1.5 The absence of multicollinearity	45
Appendix 2 Results additional analysis.....	46
2.1 Hedonic well-being as a dependent variable.....	46
2.2 Job satisfaction as a dependent variable.....	47

1. Introduction

In a post-COVID world, fostering sustainable growth and success is impossible without paying attention to employee well-being (Pendell, 2023). According to Deloitte's second Well-Being at Work Survey, many workers continue to experience unacceptably low levels of well-being. Fisher et al. (2023, p. 5) state that "many workers frequently feel negative emotions and fatigue. For example, around half "always" or "often" feel exhausted (52%) or stressed (49%), and others report feeling overwhelmed (43%), irritable (34%), lonely (33%), depressed (32%), and even angry (27%)." Furthermore, most employees reported that their health worsened or stayed the same last year (Fisher et al., 2023).

Employee well-being has been a popular topic in previous research, as well-being is one of the main problems businesses strive to tackle to keep a healthy relationship and keep their staff content and interested in their job (Wilson et al., 2004). Harshitha and Arul Senthil (2021, p. 28) state that "employee well-being covers the entire organization".

Looking at the research on employee well-being, there has been a lot of attention on how leadership impacts the well-being of employees (Arnold et al., 2007; Gilbreath & Benson, 2004; Haile, 2012; Kelloway et al., 2012; Skakon et al., 2010; Zwingmann et al., 2014). Inceoglu et al. (2018, p. 1) argue that "leaders play a crucial role in organizations and their behavior has a significant impact on the work behavior, performance, and well-being of their employee", which is supported by Avolio et al. (2009), Fisher et al., (2023), and Kuoppala et al. (2008).

Various types of leadership significantly impact employees, including transformational, transactional, authentic, empowering, and ethical leadership (Tims et al., 2011; Xu & Cooper-Thomas, 2011; Zhu et al., 2009). However, for this study, authentic leadership is chosen as an antecedent for employee well-being as "the unique stressors facing organizations throughout society today call for a new leadership approach aimed at restoring basic confidence, hope, optimism, resilience, and meaningfulness" (Avolio et al. 2004, p. 3).

Authentic leadership behavior, as defined by Avolio and Gardner (2005), emphasizes self-awareness (values, cognitions, and emotions), moral perspective (acting in the best interests of others), and relational transparency in leadership. "Relational transparency reflects the open and transparent manner whereby authentic leaders and followers are posited to share information" (Avolio & Gardner, 2005, p. 317).

Additionally, there has been growing interest in understanding gender dynamics within leadership literature, examining differences and similarities in leadership styles between men and women (Bark et al., 2014; Bass et al., 1996; Eagly & Johannesen-Schmidt, 2001; Eagly et al., 2003; Vinkenburg et al., 2011), and testing the impact of gender on the relationships between leadership styles on different employee outcomes.

The increasing presence of women in the workforce contrasts with their underrepresentation in top organizational positions. In the Netherlands, only 25% of supervisor roles are held by women ([Business Insider Nederland, 2022](#)), while the Fortune 500 noted a historic milestone with over 10% of major US companies led by women in 2023 ([Hinchliffe, 2023](#)). Nevertheless, research indicates that female CEOs face a higher risk of dismissal than males ([Gupta et al., 2018](#)). This paper draws upon the theoretical lens of Social Role Theory to explore these concepts, emphasizing how societal norms shape gender roles and influence behavior ([Eagly and Wood, 2016](#), [Newman & Newman, 2020](#); [Daniels & Leaper, 2011](#); [Ridgeway, 2001](#)).

Originating from the work of Eagly and Wood (2016), Social Role Theory posits that societal expectations and norms surrounding gender roles significantly influence individuals' behavior and perceptions within societal contexts. This provides a foundation to examine how gender moderates the relationship between authentic leadership behavior and employee well-being.

The Social Role Theory posits that individuals are generally expected to adhere to culturally defined roles ([Eagly & Wood, 2016](#)). However, when women fulfill expectations linked with managerial or leadership positions, they may deviate from perceived norms of appropriate female behavior. As female leaders diverge from employees' gender expectations, they may encounter prejudiced reactions, as highlighted by Mehmood et al. (2019), who pointed out that female leaders often encounter heightened examination or negative reactions.

Being constructed as authentic depends on leaders performing authenticity in line with gender norms ([Liu et al., 2015](#)), where authenticity is manifested through behaviors aligned with stereotypes of masculinity and femininity. Consequently, gender stereotypes significantly influence leadership evaluations, impacting the acceptance and effectiveness of various leadership styles, including authenticity ([van Engen et al., 2001](#); [Eagly & Johnson, 1990](#); [Eagly et al., 1995](#)).

This research aims to investigate how the gender of leaders moderates the relationship between authentic leadership and employee well-being. While previous literature has acknowledged the influence of socio-demographic variables on well-being ([Koon & Ho, 2021](#)), they have often been treated merely as control variables without delving into their potential moderating effects ([Wilks & Neto, 2013](#)). Therefore, this study seeks to theoretically contribute to filling this gap by examining how gender influences employees' perceptions of authentic leadership and its impact on their well-being. Hence, the following research question was formulated to guide this study:

How does the gender of leaders influence the impact of authentic leadership behavior on employee well-being?

As mentioned before, prioritizing employee well-being is crucial for sustainable growth and organizational success ([Pendell, 2023](#)) and Deloitte's Well-Being at Work Survey revealed challenges among employees ([Fisher et al., 2023](#)). By recognizing the role of leaders in shaping workplace

environments, this study seeks to contribute to theory by examining how authentic leadership behaviors influence employee well-being, acknowledging the importance of fostering supportive work environments to address these concerns.

Also, gender dynamics play a significant role in shaping leadership behaviors and organizational outcomes, particularly concerning the representation of women in leadership positions ([Business Insider Nederland, 2022](#); [Hinchliffe, 2023](#); [Gupta et al., 2018](#)). Social role theory posits that societal expectations surrounding gender roles influence individuals' behaviors and perceptions within organizations ([Eagly & Wood, 2016](#)). By integrating gender as a moderator, this study aims to advance a theoretical understanding of how gender influences leadership effectiveness and employee well-being.

As [Steffens et al. \(2019\)](#) highlighted, the complexity of gender dynamics in organizational contexts suggests that gender diversity at the top may positively influence perceptions between female leaders. Yet, the effects on work-related well-being and support of gender stereotypes are less clear. By examining how gender moderates the relationship between authentic leadership and employee well-being, this study aims to shed light on the unique challenges female leaders face and advocate for gender-inclusive leadership practices that support the well-being of all employees.

The remainder part of this thesis is structured as follows. The next chapter will present a theoretical framework to support the claimed relationships between authentic leadership, employee well-being, and gender. Chapter three will go into the methodology applied in this study and chapter four will present the results obtained after collecting and analyzing the data. Next, chapter five concludes and discusses the theoretical and practical implications, limitations, and recommendations for future research.

2. Theoretical framework

As mentioned in the introduction, this chapter delves into the connection between authentic leadership, employee well-being, and gender. These concepts play an important role in shaping the conceptual model, providing a lens through which the complex connections between authentic leadership, employee well-being, and gender can be better understood in the context of this research.

2.1 Social Role Theory

In this study, Social Role Theory serves as a framework to conceptualize the potential moderating role of gender in the relationship between authentic leadership behavior and employee well-being. This theory examines how societal roles, norms, and expectations influence individual behavior within organizations. Within this theory, social roles shape leaders' and followers' expectations and behaviors (Newman & Newman, 2020).

Gender stereotypes influence perceptions about how women and men should behave (Heilman, 2001; Eagly & Karau, 2002). Social Role Theory categorizes gender roles into breadwinner and homemaker roles, reflecting cultural expectations for behavior (Eagly et al., 2012). Men and women then adjust to sex-typical roles, acquiring skills and resources linked to successful role performance. Women typically adopt communal behavior, emphasizing interpersonally facilitation and friendliness, while men tend toward agentic behaviors, characterized by assertiveness and independence (Eagly et al., 2012). Based on these social roles, when women occupy leadership roles, they are more likely to face disapproval than men, due to perceived gender role violations (Eagly & Karau, 2002).

A theoretical stream within the broader Social Role Theory called Role Congruity Theory (Eagly & Karau, 2002) posits that employees would generally respond more favorably to their leader when the leader's gender is congruent with the leader's expected role. Incongruence between expected and actual leadership roles can lead to negative evaluations and outcomes (Eagly et al., 1995). Specifically, leadership roles requiring participative and open consideration are perceived as feminine, while roles demanding control and assertiveness are seen as masculine. Hence, to understand how leader gender alters the relationships between leadership behaviors and different employee outcomes, it is necessary to compare the effects of the same leadership behaviors performed by both female leaders and male leaders (Eagly et al., 2003).

This study focuses on employee well-being to investigate how authentic leadership influences this outcome. Drawing on Social Role Theory and Role Congruity Theory, the study argues that gender moderates the relationship between authentic leadership behavior and employee well-being. In the next sections, authentic leadership and employee well-being will be explained using this theory, before adding the role of gender.

2.2 Authentic leadership behavior and employee well-being

As mentioned in the introduction, relational transparency, self-awareness, and a moral standpoint are all essential components of authentic leadership (Avolio & Gardner, 2005). This leadership style prioritizes authenticity and integrity in interpersonal relationships, facilitating trust and mutual respect between leaders and followers. Kernis (2003) highlights the importance of deep self-awareness and acceptance among authentic leaders who demonstrate trust in their principles, ideas, and feelings. This allows them to lead with integrity and unity, as highlighted by Walumbwa et al. (2008), who emphasize the need for an internal moral compass in driving ethical decision-making processes within authentic leadership frameworks.

Shamir and Eilam (2005) contribute to this understanding by emphasizing the importance of leader-follower relationships and open communication in authentic leadership. They suggest authentic leaders build trusting and transparent relationships with their followers by openly sharing their inner thoughts, feelings, and vulnerabilities (Shamir & Eilam, 2005).

Differences and similarities arise when comparing authentic leadership to transformational and ethical leadership. Transformational leadership, characterized by inspiring a vision and serving as a role model to garner employees' trust and admiration, shares traits with authentic leadership in self-confidence, hopefulness, resilience, and moral standards (Yavuz, 2020). However, while transformational leadership emphasizes intellectual stimulation and individualized consideration (Ugochukwu, 2024), authentic leadership prioritizes personal integrity and authenticity (Ahmed, 2023). In contrast, ethical leadership centers on moral principles and decision-making, aiming to foster ethical organizational cultures (Kapur, 2018; Rahimnia & Sharifirad, 2014). Authentic leadership, emphasizing personal authenticity and self-awareness, contrasts with ethical leadership's focus on fairness, justice, and accountability in all actions (Davidoff, 2023; Kapur, 2018). The advantages of authentic leadership in diverse organizational contexts emphasize its selection for this study.

The leadership style of a supervisor influences employee's well-being (Lundqvist et al., 2022; Nyberg et al., 2009; Skakon et al., 2010; Arnold, 2017). Specifically, these studies mention that "leadership styles such as supportive, relationship-oriented, and transformational leadership seem to be important for employees to feel satisfied with their jobs and experience well-being" (Lundqvist et al., 2022, p.2). Authentic leaders pursue trusting and transparent relationships with their followers and want to form supportive relationships (Shamir & Eilam, 2005; Kim, 2018).

Authenticity impacts the leader's well-being and influences their followers' well-being and self-concept positively (Ilies et al., 2005). Hsieh and Wang (2015) and Rahimnia and Sharifirad (2014) suggest that authentic leadership fosters psychological safety and develops a positive organizational culture, enhancing satisfaction and commitment among employees. Abidin (2017) and Sharma and

Sharma (2015) emphasize the link between authentic leadership and employee engagement, noting the importance of fair decision-making and equal treatment in boosting work engagement and well-being.

Moreover, “authentic leaders form supportive relationships that increase employee satisfaction and lower negative effects. These effects positively influence hedonic well-being, enabling team members to experience pleasure and avoid negative experiences.” (Kim, 2018, p. 196; Sparks et al., 2001). Hedonic well-being focuses on subjective well-being and happiness, emphasizing the pursuit of pleasure or enjoyment and avoidance of pain (Nelson-Coffey & Schmitt, 2023).

In addition, Alilyyani et al. (2018) argue that authentic leadership plays a critical role in enhancing the psychological well-being (PWB) of nursing professionals, fostering a healthy work environment beneficial for both staff and patients. Nelson et al. (2014) stress the role of authentic leadership in building trust and confidence, leading to higher PWB when employees feel valued and respected. Gardner et al. (2004, 2005) and Ilies et al. (2005) propose complex models of authentic leadership behavior, explaining how it promotes autonomy and psychological engagement, positively influencing employee attitudes and behaviors, including well-being.

The positive association between authentic leadership and employee well-being is supported by its association with psychological safety, greater satisfaction, and commitment (Azila-Gbettor et al., 2024; Liu, 2012). Psychological safety describes the shared beliefs among employees that taking interpersonal risks is safe (Edmondson, 1999). According to Walumba and Schaubroeck (2009), psychological safety reaches more than just perceiving and experiencing high levels of interpersonal trust; it also describes respectful, cooperative work, in which people feel free to express their differences. Rahimnia and Sharifirad (2015) argue that authentic leadership can improve well-being and better work engagement.

Therefore, the positive connection between authentic leadership and employee well-being, supported by Social Role Theory and various studies, highlights its significance in organizational contexts. Combining these findings has resulted in the formulation of the following hypothesis:

Hypothesis 1: Employees' perceptions of their supervisors' authentic leadership behaviors positively relate to employee well-being.

2.3 The role of gender in the relationship between authentic leadership and employee well-being

Gender differences are widely acknowledged across various aspects of life, including the workplace (Eagly & Wood, 2013; Hyde, 2014; Eagly & Heilman, 2016). Social Role Theory categorizes gender roles into male agentic characters, who show toughness, strength, superiority, and confidence, and female communal characters, who show emotional, helpfulness, kindness, compassion,

interpersonal sensitivity, and gentleness (Eagly & Archer, 1996; Eagly & Wood, 2016). Leadership has historically been dominated by men, posing challenges for women aspiring to leadership roles (Dwiri & Okatan, 2021; Eagly & Karau, 2002). Communal attributes associated with female leaders are positively linked to perceptions of authentic leadership (Lord et al., 1984; Scott & Brown, 2006), yet challenges to gender-neutral interpretations of authentic leadership exist (Ladkin & Taylor, 2010; Liu et al., 2015).

In employee well-being, female managers are linked to enhanced outcomes such as reduced stress and increased job satisfaction (Xie et al., 2022). Conversely, the support offered by men is more linked to specific aspects of professional development, possibly due to larger networks and sector knowledge (Moreno et al., 2021). Building upon Social Role Theory, authentic leadership behaviors, aligned with feminine social roles, challenge traditional gender norms, promoting gender equality within organizations (Eagly & Wood, 2016; Pendell, 2023).

Cenkci and Özçelik (2015) found a positive impact of benevolent leadership on employee engagement, highlighting the potential benefits of such leadership styles in enhancing employee dedication. This is particularly relevant when considering authentic leadership, which shares similar qualities of sincerity and ethical behavior. Benevolent leadership's emphasis on care and support aligns with authentic leadership's focus on genuine and transparent interactions, suggesting that authentic leadership can also positively influence employee well-being across different genders.

Despite assuming gender neutrality, authentic leadership behaviors may be perceived and valued differently based on leaders' gender and differentiate on follower outcomes (Caza et al., 2010; Walumbwa et al., 2010; Ladkin & Taylor, 2010; Liu et al., 2015). Authentic leadership behaviors displayed by female leaders will be perceived as more compatible with feminine social roles and attributes (e.g., encouraging communal participation and showing consideration) (Eagly et al., 1995). In contrast, the same authentic leadership behaviors will be perceived as less compatible with male social roles and attributes because men are traditionally expected to display control of others and show strength, superiority, and confidence (Eagly et al., 1995). As a consequence, female leaders exhibiting authentic leadership traits may align more closely with expected social roles, enhancing employee well-being compared to male leaders. (e.g., more creativity, work motivation, and performance; Wang et al., 2013; Niu et al., 2009).

Following the same logic, other research that builds on Social Role Theory also demonstrated that employees are more empowered by transformational leadership displayed by male leaders, compared to female leaders (Cenkci & Ozelik, 2015). Furthermore, a meta-analysis showed that collaborative and empowering leadership was related to leader effectiveness and more positive employee outcomes when the leader is a female leader because these leadership behaviors draw upon characteristics that women are encouraged to uphold as part of their femininity, while men are more

expected to display behaviors that draw upon supervisor-subordinate hierarchy (Paustian-Underdahl et al., 2014).

Another research shows that changing demographics and increased contact with female leaders may be shifting employees' expectations from traditionally masculine leadership styles to more gender-neutral or communal styles. "Changing and diverse demographics in the work environment have been found to influence the type of leadership desired by subordinates. (...) The increasing emergence of female leaders and consequently greater contact with female leaders facilitates this changing view of leadership roles from one that is conventionally stereotyped to a more flexible and androgynous view of leadership" (Kim & Shin, 2017, p. 281).

Based on these insights, understanding the role of gender is crucial in examining the relationship between authentic leadership behavior and employee well-being. Therefore, this research proposes the following hypothesis to explore the moderating effect of gender:

Hypothesis 2: Gender moderates the relationship between authentic leadership behavior and employee well-being, with female leaders expected to have a stronger positive effect on employee well-being compared to male leaders.

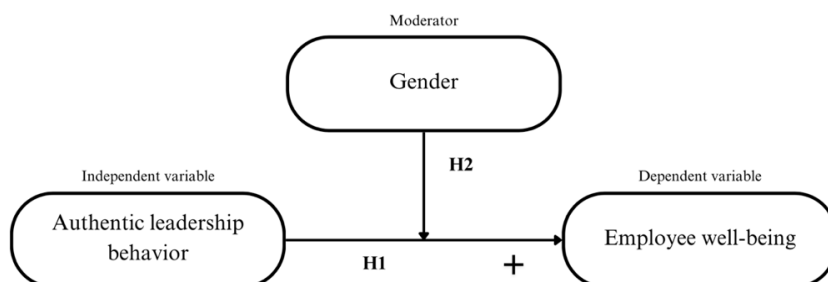
The hypothesis is based on the perceptions of communal attributes associated with authentic leadership (Lord et al., 1984; Scott & Brown, 2006).

2.4 Conceptual model

Following the hypotheses, figure 1 shows the conceptual model of this study.

Figure 1

Conceptual model



3. Methodology

This chapter describes how the research method has been approached. This methodology chapter elaborates on various aspects to clarify how the research goal of this study is achieved. First, the design, the data collection, and the procedure are presented. Then a description of the sample, the measures, and the analysis will be illustrated, followed by an ethics paragraph.

3.1 Research design, data collection, and procedure

This study uses a quantitative research design, specifically a correlational and cross-sectional approach, to address the research question within a limited timeframe and reach as many people as possible to increase reliability. Quantitative methods are suitable for establishing cause-and-effect relationships, testing hypotheses, and discovering large groups of people's opinions, attitudes, and practices (Verhoef & Casebeer, 1997). Furthermore, the research builds on a positivistic research philosophy and uses a deductive approach to formulate the study hypotheses from the existing theory and empirical evidence. Namely, "positivistic research takes as its premise that there is an objective reality that can be accurately mirrored and explained by neutral researchers" (Vosselman, 2012, p.394). Using quantitative research will give a comparable result, as the data analysis is standardized, and the collection can be repeated in a different setting (Bhandari, 2022). Moreover, the involvement of a group of master students in data collection confirms neutrality as they remain detached observers, minimizing any potential influence on the variables being studied.

This research has collected data using an online survey administrated via Qualtrics, from the 22nd of April to the 7th of May 2024, facilitating a cross-sectional snapshot of information. As the data was obtained together with four other master's students, sample diversity was increased (Field, 2018). The questionnaire makes use of primarily Likert-scale questions, aligning directly with the variables discussed in chapter two and safeguarding participant anonymity. A survey allows data from a large sample to be collected and examined, which improves the study's reliability (Saunders et al., 2019). In particular, the study focused on leader-follower dyads to provide a comprehensive perspective on authentic leadership, gathering data from both employees and leaders. This multi-source approach enhances the objectivity of the authentic leadership construct (Maguire, 1999).

Due to practical constraints, a convenience sampling approach has been adopted, allowing for the convenient selection of participants. Recruitment for the survey will be primarily conducted through voluntary advertising and snowball sampling techniques. However, this methodological choice imposes constraints on the generalizability of findings, as not all subgroups of workers are equally represented. Moreover, the voluntary nature of participation and potential biases in respondents' willingness to engage, influenced by their relationships with supervisors, may introduce nuances into the results. The

online survey format may further bias the sample towards individuals comfortable with digital platforms, potentially affecting demographic representation. Additionally, the correlational and cross-sectional research design reduces the opportunity to evaluate causal correlations (Field, 2018). Thus, carefully considering sampling methods is essential to acknowledge and address potential biases in research outcomes.

3.3 Sample

The required sample size for quantitative studies can be estimated in a variety of methods (Hair et al, 2014). According to the rules of thumb, each variable should have at least four or five respondents, while the desired ratio is usually 15 to 20 respondents per variable. A sample size of at least 50, but preferably 100 is required (Hair et al., 2014). In this research, participants have been selected using non-probability sampling methods, targeting employees from various industries in the Netherlands and Germany. Because the study focused on the impact of leadership on employee well-being, each respondent needed to have a direct supervisor. The survey targeted 166 respondents, of which 130 completed the questionnaire, resulting in a high response rate of 78,3%.

There is also another survey that was conducted previously for the start of this study. With the overlapping variables and items of both surveys, it was decided with the group of master students and supervisor to use this dataset also. This gave a total of 255 respondents, which makes the dataset more reliable. However, the final sample size has been analyzed for the main variables as this was created specifically for this study. Table 1 gives an overview of the demographic statistics of the samples, regarding age, gender, educational level, and the sector they are working in, to get more familiar with the data.

Among the 255 respondents, the majority were female (65,1%), with an average age of 35 years ($SD = 14,63$). Most reported working with their supervisor for one to three years (34,9%) and having weekly contact with them (39,2%). The most represented industries were Trades and Services (14,9%), Healthcare and Welfare (12,5%), and IT (12,2%). Regarding the supervisor's gender, responses were evenly distributed; slightly favoring males (53,7%). The average age of supervisors is 47 years ($SD = 11,31$) and had over five years of supervisory experience (78,1%).

Table 1*Demographic statistics of the samples*

<i>Total sample</i>	
<i>N = 255</i>	
<i>Age (years)</i>	35,9 (SD = 14,63)
<i>Gender</i>	
Female	65,1%
Male	34,1%
Other	0,8%
<i>Educational level</i>	
High school	7,5%
Education (MBO)	25,5%
University of Applied Sciences	33,7%
University (Bachelor)	15,3%
University (Master)	16,5%
PhD	1,6%
<i>Time spent working together</i>	
Less than 6 months	16,5%
6 months - 1 year	20,0%
1 year - 3 years	34,9%
3 years - 5 years	11,0%
Longer than 5 years	17,6%
<i>Frequency of contact</i>	
Never	0,8%
Monthly	7,8%
Every two weeks	9,4%
Weekly	39,2%
Daily	26,3%
Multiple times a day	16,5%
<i>Sector</i>	
Health and welfare	12,5%
Trade and service	14,9%
IT	12,2%
Teaching, culture and science	7,8%
Transport and logistics	5,9%
Justice, security, and public administration	4,3%
Media and communication	3,5%
Technology, production, and construction	7,1%
Tourism, leisure, and hospitality	3,1%
Other sectors	28,7%

3.4 Measures

This study examined authentic leadership behavior, employee well-being, and gender using adapted scales specific to each variable. Authentic leadership ratings were collected from both supervisors and employees, while employee well-being and gender were assessed solely by employees. Measurement selection criteria included validation from previous studies, peer-reviewed availability,

and suitability for interval-level application. Questionnaire items were translated into Dutch, German, and English to accommodate the Dutch and German employee demographics sampled. Control variables were established at the survey's outset and will be further discussed in this section.

Authentic leadership behavior. To measure authentic leadership involves assessing various dimensions that are characteristic of this leadership style. In this study, authentic leadership behavior is operationalized by the following variables: self-awareness, moral perspective, relational transparency, autonomy, and unbiased processing. These variables are inspired by the Authenticity Inventory (AI) from Kernis and Goldman (2004) and the Authentic Leadership Questionnaire (ALQ) by Walumbwa et al. (2008). However, as this study used two samples of data, one was already conducted in a previous set of time, without authentic leadership. As explained in the previous chapters, there is a lot of overlap in four other leadership styles (transformational, inclusive, ethical, and empowering) that were measured. So, by combining different items from those variables that match the items of the ALQ and AI, authentic leadership will be measured in the same way, both by leaders and employees. To generate a measure of authentic leadership, the employee- and supervisor-rated scores that matched with specific items from transformational-, inclusive-, ethical-, and empowering leadership were averaged per item, which resulted in 10 items for this construct. All items were measured on a 5-point Likert scale ranging from 'strongly disagree' (1) to 'strongly agree' (5). An example item is: "My supervisor is clear about his/her values and puts into practice what he/she proclaims." The scale demonstrates a good reliability (Cronbach's $\alpha = 0,825$). These were in turn averaged into two variables authentic leadership, employee rated, and supervisor rated. Assuming that the influence of authentic leadership on employee well-being is dependent not only on the behaviors a supervisor displays but also on employees' perceptions of such behaviors, the effects of the supervisor and employee scores were considered equal in this study.

Employee well-being. To measure employee well-being, the items of job satisfaction will be used, as this was already measured in the previously conducted survey. This will indicate the well-being in the job domain. The scale demonstrates a good reliability (Cronbach's $\alpha = 0,822$). In addition to this, the hedonic subscale is measured for a more general perspective, in the most recent survey using 9 items from a modified version of Ryff's (1989) Scales of Psychological Well-Being. The hedonic approach to well-being focuses on the idea that experiencing pleasure and avoiding pain leads to happiness. The questions relate to self-acceptance, (positive attitude towards oneself); autonomy (sense of self-determination and independence); and environmental mastery (ability to manage life) (Ryff, 1989). All items were measured on a 7-point Likert scale ranging from 'strongly disagree' (1) to 'strongly agree' (7). An example item is: "I judge myself by what I think is important, not by the values of others." The scale demonstrates an acceptable reliability (Cronbach's $\alpha = 0,754$). To create a scale applicable to data analyses, employee-rated values that correspond with specific items from job satisfaction and hedonic well-being were averaged per item, which resulted in 10 items for this construct. These were then averaged to calculate the variable employee well-being.

Gender. “Measures of gender include questions about a person’s gender identity, which reflects their internal understanding of their gender, as well as questions about gender expression, which is how a person expresses their gender to others” (Becker et al., 2022, p. 103). But to limit the scope, this study focuses on sex, “used as a classification, generally as male or female, according to the reproductive organs and functions that derive from the chromosomal complement.” (Mazure, 2021). To use gender in a scale applicable for data analysis, gender will become a dichotomous variable.

Control variables. At the beginning of the survey, a few generic questions were asked about the demographics of the respondents. These questions are used as control variables to control for potential influences of the demographic variables and assess the study’s generalizability (Field, 2018). This method accounts for any false associations when analyzing the hypotheses, increasing the research’s internal validity. The following control variables can influence the perception and expectations of authentic leadership behavior and well-being of the employee: age, education level, and contact hours. Correcting for those variables allows for solid conclusions regarding the model’s correlations (Hair et al., 2014), since varied employee perspectives may be considered, and groups are more similar after controlling for the various control variables.

3.5 Data analysis

In this study, data analysis was conducted using SPSS software after downloading from Qualtrics. The variables selected for analysis included employees' perceptions of authentic leadership behavior, employee well-being, and gender, maximizing validity through higher respondent numbers. Before data cleaning, survey consistency was verified between recent and previous collections and the identical datasets were merged. Initial steps involved cleaning data, addressing missing values, outliers, and reviewing attention check questions. Thirty-five incomplete surveys were excluded, ensuring all remaining surveys were fully completed.

Reverse coding was applied to positively scored items following Hair et al. (2014). Gender data were also recoded to match the dataset, despite six respondents not providing their leader’s gender, resulting in a sample size of 249 participants. The final dataset ($N = 249$) of respondents was examined by analyzing the descriptive statistics of the variables (frequencies, means, and standard deviations), shown in Table 2 in section 4.1, to profile the dataset. Scale means were calculated, followed by correlation analysis to explore relationships, including control variables.

Assumption testing should be conducted for any violation of the assumptions of multiple regression analysis and include checking for linearity, normality, homoscedasticity, independence of error items, and multicollinearity. Homoscedasticity is ‘the variance of the outcome variable should be stable at all levels of the predictor variable’ (Field, 2018, p. 333), independence of observations looks for any two observations if the residual terms are uncorrelated (Field, 2018), and multicollinearity ‘exists

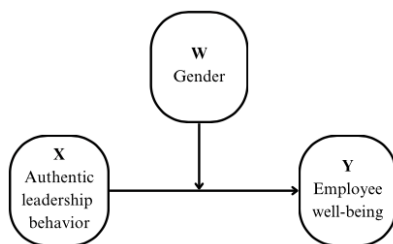
when there is a strong correlation between two or more predictors' (Field, 2018, p. 533). In Chapter 4, the violation of the assumptions is further elaborated.

Hypotheses were tested using multiple regression analysis with moderation analysis through the PROCESS tool for SPSS. Hypotheses were tested using multiple regression with moderation analysis through the PROCESS tool for SPSS, employing model 1 to assess direct and moderating effects of authentic leadership on employee well-being, moderated by gender (Hayes, 2022). A minimum of $p < .05$ was used to determine the relationship's significance. In addition, a reliability analysis was executed to evaluate whether the measured items reflect its construct and to check their internal consistency (Hair et al., 2014).

Lastly, additional analyses, such as Analysis of Variance (ANOVA), were planned to further validate the findings. Particularly comparing employee and supervisor ratings of authentic leadership across gender groups for a more comprehensive understanding (see Chapter 4, section 4.4.4).

Figure 2

Statistical diagram



3.6 Ethics

In this research, ethical considerations were prioritized. Firstly, participant anonymity was ensured, and survey data were handled confidentially without collecting identifiable information such as names, company affiliations, or departments. Participants were given the freedom to choose whether to participate and were explicitly asked for permission to use their data for research purposes, ensuring voluntary participation (Saunders et al., 2019). Data were treated responsibly, undergoing necessary cleaning for reliable analysis, and access was restricted to the research team only.

Additionally, the researcher's reflexivity played a crucial role in maintaining ethical standards throughout data collection. Being mindful of her role as a young female student, the researcher acknowledged potential influences on participant selection and responses (Symon & Cassel, 2012). These measures were implemented to safeguard participant privacy and ensure the ethical conduct of the study.

4. Results

The statistical processes used, and data analyses carried out will be discussed in this chapter to come to the results of this research. It will first present the preliminary analyses to become familiar with the dataset, ensure reliability, and make certain that the regression analysis can be performed successfully. After that, hypotheses testing will be used to illustrate the final results with a regression analysis, followed by some further studies.

4.1 Descriptives and reliability

Table 2 contains descriptives for the various variables used in this study. The mean values for both the dependent variable employee well-being ($M = 5.70$, $SD = 0.82$), and the independent variable authentic leadership ($M = 4.90$, $SD = 0.73$) were rather high. The mean value for the variable leader gender ($M = 0.55$, $SD = 0.50$) is closer to the median. Furthermore, as most of the sample size is 255, six of the respondents didn't fill in their leader gender, which is why this is at 249.

Looking at the control variables, the age of employees ($M = 35,91$) appeared to be highly distributed over the range of 18 to 75 ($SD = 14,63$), indicating that there is age variety among the employees and the ages are spread out across a broad spectrum, rather than being concentrated around a certain age. The mean education score ($M = 3,13$) was slightly left-centered from the middle score (3,5). The mean of time spent working together ($M = 2,93$) was also slightly left-centered from the middle score (3), as well as the mean of frequency of contact ($M = 2,32$) from the middle score (3,5).

Table 2

Descriptive statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	Skewness SE	Kurtosis	Kurtosis SE
<i>Dependent variable</i>									
Employee well-being	255	2,33	7,00	5,70	0,82	-1,03	0,15	2,02	0,30
<i>Independent variable</i>									
Authentic leadership behavior	255	1,88	6,38	4,90	0,73	-0,83	0,15	1,35	0,30
<i>Moderating variable</i>									
Leader gender	249	0	1	0,55	0,50	-0,20	0,15	-1,97	0,31
<i>Control variables</i>									
Age	255	18	75	35,91	14,63	0,71	0,15	-0,94	0,30
Level of education	255	1	6	3,13	1,22	0,27	0,15	-0,68	0,30
Time spent working together	255	1	5	2,93	1,29	0,16	0,15	-0,91	0,30
Frequency of contact	255	0	5	3,32	1,14	-0,42	0,15	-0,09	0,30

The descriptives also show the normality of the variables measured by the skewness and kurtosis. Normality refers to a normal distribution and can be determined by looking at the skewness and kurtosis of the variables used. The skewness score must be between -1 and +1 to indicate a significantly skewed distribution, while kurtosis measures the flatness or peakiness of a normal distribution (Field, 2018). Table 2 indicates that there are no serious issues with normality, as most of the variables fall within the range for skewness and kurtosis. The skewness of the variables of *employee well-being* and *authentic leadership behavior* is highly negative, which means that there is a left-skewed distribution (Field, 2018). The kurtosis of the variables *employee well-being*, *authentic leadership behavior*, and *leader gender* are highly positive, this indicates a peaked distribution with a thick tail, where more numbers are located in the tail of the distribution instead of around the mean (Field, 2018). The kurtosis of the variable *leader gender* is highly negative, and the variables *age*, *level of education*, *time spent working together*, and *frequency of contact* are also negative, which means that this is likely to be a platykurtic distribution.

To ensure reliability in the data analysis process, a reliability analysis was performed. Both analyses showed acceptable values for employee well-being (Cronbach's α of .759) and authentic leadership behavior (Cronbach's α of .825). These scores could not be improved if any item was deleted. In Table 3 (section 4.2), Cronbach's alpha will be mentioned for these two variables, as the rest of the variables don't have multiple items.

4.2 Correlations

The correlations between the variables of employee well-being, authentic leadership, leader gender, and the control variables: age, level of education, time spent working together, and frequency of contact are summarized in Table 3. The correlation coefficient presents the effect sizes, which are represented as a small effect with a value of $\pm 0,1$, $\pm 0,3$ as a medium effect, and $\pm 0,5$ as a large effect (Field, 2018).

One significant correlation was found between the dependent variable and an independent variable. Authentic leadership behavior ($R = 0.19$, $p = 0.02$) has a small positive correlation with employee well-being. This correlation indicates that if authentic leadership were to increase, a small higher value of employee well-being could be expected or the other way around. One variable had a small negative correlation with authentic leadership; leader gender ($R = -0.18$, $p = 0.005$) and one control variable had a medium positive correlation; frequency of contact ($R = 0.21$, $p = <0.001$). In addition, two other control variables were found to have a small positive correlation with employee well-being; age ($R = 0.21$, $p = <0.001$), and time spent working together ($R = 0,148$, $p = 0.018$). Also, age has a small positive correlation with the leader's gender ($R = 0.16$, $p = 0.009$). and the time spent working together has a medium positive correlation with leader gender ($R = -0.22$, $p = <0.001$).

Table 3*Pearson's correlations between variables*

<i>Variables</i>	1	2	3	4	5	6	7
1. Employee well-being	(0,759)						
2. Authentic leadership behavior	0,19**	(0,825)					
3. Leader gender	-0,01	-0,18**	--				
4. Age	0,21**	-0,10	0,16**	--			
5. Level of education	0,01	0,12	-0,08	-0,19**	--		
6. Time spent working together	0,15*	0,03	0,22**	0,45**	-0,07	--	
7. Frequency of contact	0,03	0,21**	0,14*	-0,04	0,01	0,12*	--

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Note. $N = 249$

As shown in Table 3, not all variables are significantly correlated with one another. Overall, only a few significant correlations were discovered, which might have had implications for the regression analysis used during hypothesis testing.

4.3 Assumptions testing

“An assumption is a condition that ensures that what you’re attempting to do works (Field, 2018, p. 323 & 324). For this study, several assumptions are checked before performing a moderation analysis and testing the hypothesis. The five assumptions are linearity, normality, homoscedasticity, independence of errors, and the absence of multicollinearity, and should be met as this will help validate the results and improve the reliability of this study. SPSS output for testing these assumptions can be found in Appendix 1.

Linearity. The model in this study should be linear, which can be assessed using the scatterplot. Linearity means that the relationship between each pair of variables follows a straight line, allowing the correlation coefficient to accurately represent how they are connected (Hair et al., 2014). The Partial Regression plots revealed that the data points were widely spread around a center line, indicating that the variables were linearly connected, and this assumption is met.

Normality. A normal distribution should be confirmed, which can be determined by looking at the skewness and kurtosis of the variables used. The descriptive statistics (Table 2, section 4.1) indicate that employee well-being has a higher value of -1 and +1 and authentic leadership has a higher value of kurtosis. A Normal P-P Plot was examined on top of the descriptive statistics. The assumption of

normality refers to the residuals of the model being normally distributed. The P-P Plot in Appendix 1.2 shows that there is evidence of skew as the dots snake a little bit around the diagonal line. However, the residuals align closely with the diagonal line of normal distribution, and therefore this assumption is met.

Homoscedasticity. The assumption of homoscedasticity proposes an even spread of the residuals across the range of predictors (Field, 2018). By investigating the scatterplot in Appendix 1.3, there was no obvious pattern to be found among its data points, implying that they were distributed randomly. Therefore, the data is found to be homoscedastic, and this assumption is also met.

The independence of errors. This assumption can be tested with the Durbin–Watson test, ‘which tests for serial correlations between errors’ (Field, 2018, p. 514). Looking at the Model Summary in Appendix 1.4, the Durbin-Watson statistic shows this independence. The value of 1.776 indicates a positive correlation, but is not a cause for concern, as this value is not less than 1 or greater than 3 (Field, 2018). So, this assumption is also met.

The absence of multicollinearity. The absence of multicollinearity is checked for, meaning that there should not be high correlations present between the independent variables (Hair et al., 2014). Studying the tolerance and VIF values in Appendix 1.5, the collinearity statistics show that the tolerance values of all variables are $> .1$ and the VIF values are < 10 . This means that this assumption was not violated.

4.4 Hypothesis testing

After all the assumptions are met, this section will test the conceptual model and its proposed hypotheses. A multiple regression-based moderation analysis was carried out using the SPSS module PROCESS. Model 1, which allows for direct effect and moderation analysis, was used to investigate the relationships between all predictor and outcome variables. Employee well-being was coded as Y, authentic leadership behavior as X, and gender as W. In addition, the variables age, level of education of employees, time spent working together, and frequency of contact were included as covariates. A significant effect was defined when the p-value was $< .05$. A summary of the regression analysis is shown in Table 3, found after section 4.4.3.

4.4.1 Direct effect of authentic leadership behavior on employee well-being

Hypothesis 1 stated that authentic leadership behavior is positively related to employee well-being. This test was performed on the full sample size ($N = 249$). The direct effect of authentic leadership behavior on employee well-being was statistically significant. The results, shown in Table 4, indicated

that the direct effect between authentic leadership behavior and employee well-being is positive and significant ($\beta = .195, p = .031$). This suggests that a one-unit increase in authentic leadership is associated with an increase of 0.195 units in employee well-being. Therefore, hypothesis 1 is supported.

4.4.2 Moderating effect of gender

Hypothesis 2 mentioned a moderation influence of gender on the relationship between authentic leadership behavior and employee well-being. This model test was performed on the full sample size ($N = 249$). The interaction between authentic leadership behavior and leader gender was not statistically significant. The results, shown in Table 4, indicate that the moderation effect of gender on authentic leadership behavior and employee well-being is negative and insignificant ($\beta = -0.49, SE = 0.11, t = -0.44, p > .05$). This suggests that the relationship between authentic leadership behavior and employee well-being does not significantly differ by leader gender. Therefore, hypothesis 2 is rejected.

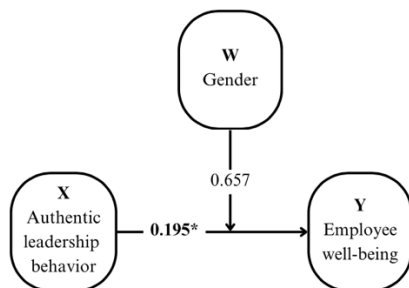
The regression analysis holds some more statistics, shown in Table 4. Focusing on the conditional effects of leader gender, it is found that when the supervisor is a woman, there is statistically a positive, significant effect ($\beta = .266, p = .031$). When the supervisor is a man, there is also a statistically positive, significant effect, but its effect is only a bit smaller compared to female supervisors ($\beta = .199, p = .026$). Additionally, looking back at Table 1, the group is not evenly distributed. From the total sample size ($N = 255$) 166 are women (65,1%), only 87 are men (34,1), and two persons described themselves as 'other'.

4.4.3 Control variables

Among the control variables, age ($\beta = .012, p = .002$) was a statistically significant predictor of employee well-being. However, the rest of the control variables were not statistically significant. The analysis demonstrates that authentic leadership directly affects employee well-being, regardless of the leader's gender. This underscores the importance of authentic leadership in enhancing employee well-being across different genders of leaders, while also highlighting the significant roles of age, education, time spent working together, and frequency of contact in this context.

Table 4*Regression analysis summary for predicting employee well-being (Y)*

<i>Model</i>	β	SE	t	p	LLCI	ULCI
Constant	3.818	.642	5.947	.000**	2.553	5.083
Authentic leadership behavior (X)	.265	.122	2.176	.031*	0.25	0.506
Leader gender (W)	.307	.750	.409	.683	-1.171	1.785
Authentic leadership behavior * leader gender (X * W)	-.066	.149	-.444	.657	-.362	.228
Age	.012	.004	3.109	.002**	.004	.020
Level of education	.033	.042	.775	.439	-.051	.116
Time spent working together	.028	.044	.627	.531	-.059	.115
Frequency of contact	-.008	.046	-.183	.855	-.099	.083
<i>Conditional effects leader gender</i>						
0.000 (women)	.266	.122	2.176	.031*	.025	.506
1.000 (men)	.199	.089	2.245	.026*	0.24	.374

Note. $N = 249$; * $p < 0.05$; ** $p < 0.01$ **Figure 4***Results in a statistical diagram**Note.* $N = 249$; * $p < 0.05$; ** $p < 0.01$

4.4.4 Additional analysis

As employee well-being is measured on two fronts, a more general perspective (hedonic well-being) and a more job-related perspective (job satisfaction), the regression analysis is also executed on both different dependent variables. The results are displayed in Appendix 2.

First, we performed a moderated regression analysis with only hedonic well-being as the dependent variable (Y). It should be noted that in this analysis the sample size was reduced to 124, as only the respondents in the most recently conducted survey filled in this scale. Results show that authentic leadership behavior no longer has a statistically significant impact on employee well-being ($\beta = .174$, $p = .129$). There are no other effects that are statistically significant, including the control variables.

Second, we performed a moderated regression analysis with only job satisfaction as the dependent variable (Y). This model test was performed on the full sample size ($N = 249$). The results show that the direct effect of authentic leadership behavior on job satisfaction was statistically significant. The results indicated that the direct effect between authentic leadership behavior and job satisfaction is positive and significant ($\beta = .354, p = .000$). This suggests that a one-unit increase in authentic leadership is associated with an increase of 0.354 units in job satisfaction. However, the interaction effect is still not statistically significant ($\beta = -/.038, p = .758$). In addition, looking at the leader gender, it is found that when the supervisor is a woman, there is statistically a positive, significant effect ($\beta = .354, p = .000$). When the supervisor is a man, there is also a statistically positive, significant effect, but its effect is only a bit smaller compared to female supervisors ($\beta = .316, p = .000$).

Finally, there is some dyadic data available ($N = 125$). Because the dyadic data was not available for the full sample ($N = 249$) we chose to perform some exploratory analyses with supervisory-rated variables instead of using the supervisory-rated information in the main model test. These additional exploratory analyses aim to give more insights into perceived leadership effectiveness. Specifically, we investigated gender differences in leadership ratings as that can reveal if men and women perceive and rate leadership differently, which could influence potential biases. To this end, a one-way ANOVA test was executed to analyze the differences in authentic leadership ratings, considering both the role of the rater (employee vs. supervisor) and gender (man vs. woman). This way, two specific comparisons have been examined, the results are shown in Figure 5. Looking at the means of both groups, men rate themselves as a supervisor as more authentic than women ($M = 4.85$ women, $M = 5.01$ men). However, there are a bit more men in the group of supervisors (*female* $N = 55$, *male* $N = 70$). Focusing on the employee-rated statistics, women are rated more authentic than men ($M = 5.04$ women, $M = 4.77$ men). But here also, the group is not evenly distributed (*female* $N = 112$, *male* $N = 137$).

Figure 5

One-way ANOVA

		<i>Descriptives</i>							
		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for		Minimum	Maximum
S_AuthL	0 Vrouw	55	4,85	0,26	0,03	4,78	4,92	4,38	5,63
	1 Man	70	5,01	0,37	0,04	4,92	5,10	4,25	5,63
	Total	125	4,94	0,33	0,03	4,88	5,00	4,25	5,63
E_AuthL2	0 Vrouw	112	5,04	0,62	0,06	4,92	5,15	3,14	6,38
	1 Man	137	4,77	0,80	0,07	4,64	4,91	1,88	6,38
	Total	249	4,89	0,73	0,05	4,80	4,99	1,88	6,38

		<i>ANOVA</i>				
		Sum of Squares	df	Mean Square	F	Sig.
S_AuthL	Between Groups	0,81	1	0,81	7,70	0,006
	Within Groups	12,99	123	0,11		
	Total	13,80	124			
E_AuthL2	Between Groups	4,30	1	4,30	8,19	0,005
	Within Groups	129,56	247	0,52		
	Total	133,86	248			

5. Discussion

The findings of this research have provided insight into the relationship between authentic leadership, employee well-being, and leader gender. However, given the current study's limitations, the findings should be interpreted cautiously. This chapter reflects the research process. The design's limitations and potential consequences are discussed, as are the implications for interpreting the results. The chapter concludes with several recommendations for future research and the conclusion.

5.1 Discussion of the findings

The study explores the relationship between employee well-being, authentic leadership, leader gender, and control variables like age, education level, time spent working together, and frequency of contact. Two hypotheses are formulated based on relevant literature for this study. The proposed model includes one direct hypothesis and one hypothesis that addresses the moderating impact. Those hypotheses were developed to address the research question:

“How does the gender of leaders influence the impact of authentic leadership behavior on employee well-being?”

To summarize the findings, this study examines the relationship between employee well-being, authentic leadership, leader gender, and control variables such as age, level of education, time spent working together, and frequency of contact. The data shows high mean values for these variables, with high negative values for employee well-being and positive values for leader gender when measuring normality using skewness and kurtosis. The correlation coefficients show small, medium, and large effect sizes, with one significant correlation found between the dependent and independent variables. Authentic leadership has a small positive effect on employee well-being, while leader gender has a small negative correlation. Age and time spent working together also have small positive effects.

The conceptual model, tested through multiple regression-based moderation analysis, found a positive and significant direct effect of authentic leadership behavior on employee well-being. A one-unit increase in authentic leadership is associated with a 0.195-unit increase in employee well-being. The study found that authentic leadership positively impacts employee well-being, regardless of leader gender, with age being a significant predictor. Age, education, and time spent working together also play significant roles in this relationship. The study examines the impact of authentic leadership behavior on employee hedonic well-being and job satisfaction. Results show that authentic leadership behavior has no significant impact on hedonic well-being. However, a one-unit increase in authentic leadership is associated with a 0.354-unit increase in job satisfaction. The study also examines gender differences in leadership ratings, finding that men rate themselves as more authentic than women.

These results support hypothesis 1, as they align with the claims of Rahimnia and Sharifirad (2015) that authentic leadership can result in improved well-being and better work engagement. Moreover, in line with hypothesis 1, the results support the argument that leaders play a crucial role in organizations. Their actions greatly influence their employee's work behavior, performance, and general well-being at work, which is based on similar studies by Inceoglu et al. (2018, p. 1), Avolio et al. (2009), Fisher et al. (2023), and Kuoppala et al. (2008). The results contradict the claims of Ladkin & Taylor (2010) and Liu et al. (2015) that gender biases and societal expectations may influence followers' perceptions of authenticity, leading to variations in how authentic leadership behaviors are interpreted and valued.

Hypothesis 2 proposed that gender moderates the relationship between authentic leadership behavior and employee well-being, with female leaders expected to have a stronger positive correlation compared to male leaders. However, the results did not support this hypothesis, as the interaction between authentic leadership behavior and leader gender was not statistically significant. The significant positive effects of authentic leadership behavior on employee well-being for both genders suggest that authentic leadership principles are universally effective, regardless of the leader's gender, offering an alternative explanation for the non-significant moderation results.

Another possible explanation for this could be sample imbalance, as we had more female leaders than male leaders. This could potentially affect the analysis and lead to non-significant results. In addition, there could be variations in how employees perceive male and female leaders, masking the moderating effect of gender. However, as mentioned before, the connectionist model of leadership perceptions suggests that communal attributes, more readily associated with female leaders, positively impact perceptions of authentic leadership (Lord et al., 1984; Scott & Brown, 2006). This is supported by the additional analysis that was done on employee ratings for authentic leadership (section 4.4.4).

5.2 Theoretical and practical implications

These results build on existing evidence of the positive relationship between authentic leadership and employee well-being, supporting Kim (2018) while distinguishing between hedonic well-being and job satisfaction in the context of authentic leadership. This study offers new insights into how different aspects of well-being are influenced by leadership styles. It reinforces the idea that self-aware, transparent, and ethical leaders can enhance their employees' experiences at work (Avolio et al., 2004; Hsieh & Wang, 2015). The finding that authentic leadership significantly enhances job satisfaction, but not hedonic well-being suggests a need to differentiate types of employee well-being in leadership and well-being models. Age, education, and tenure were identified as significant factors influencing this relationship, following Koon and Ho's (2020) highlight and expanding on Avolio et al. (2004) to deepen the understanding of contextual factors in leadership effectiveness.

The findings on gender differences in self-ratings of authenticity contribute to ongoing discussions about gender dynamics in leadership, challenging Social Role Theory. The study does not fully align with Social Role Theory, which posits that gender differences in behavior are influenced by societal expectations and roles (Eagly & Karau, 2002). Men rating themselves higher in authenticity reflects traditional gender roles that encourage assertiveness and self-confidence in men. At the same time, women may be socialized to be more modest and self-critical. This finding enriches Eagly and Karau's (2002) work on gender roles in leadership, suggesting that authentic leadership behavior principles may have a universal impact on employee well-being, exceeding traditional gender expectations.

Understanding these relationships is valuable for HR training programs focused on authentic leadership to boost employee well-being and job satisfaction, as supported by the work of Abidin (2017) and Sharma and Sharma (2015). Organizations could consider strategies to boost the pleasure-related aspects of hedonic well-being, such as stress reduction or recreational activities. Also, promoting longer-term working relationships and pairings could further support employee well-being, given the positive impact of time spent working together on employee well-being. Lastly, raising awareness of the impact of social role expectations on self-perception and leadership behaviors, initiated by Eagly and Wood (2016), could help to reduce the influence of gender stereotypes and promote a more balanced and inclusive approach to leadership.

5.3 Limitations & recommendations for future research

In conducting research, it is essential to recognize limitations that may impact the interpretation of findings. One factor is the use of subjective measures of well-being, which can introduce potential biases. Additionally, using a cross-sectional design restricts the study to identifying associations rather than causal relationships. Longitudinal studies are needed to establish causation between authentic leadership and employee well-being, as recommended by Nyberg (2009).

While leader information may not be directly used in this analysis, the dyadic survey format suggests the potential for integrating such data in future research to test hypotheses or control for specific leadership responses. However, the collaborative effort involved in data collection, facilitated by master students administering questionnaires, introduces another layer of limitation. This collaborative approach could influence data interpretation and lead to varying conclusions over time.

Furthermore, the study's generalizability is limited by the homogeneity of the sample, lacking diversity across demographics like ethnicity and cultural background, which means the findings might not be generalizable to all populations. In addition, reliance on self-reported data may introduce biases such as social desirability bias, where participants respond in ways they perceive as favorable rather than truthful. While the study controls for several variables (age, education, time spent working together,

frequency of contact), unmeasured variables (e.g., organizational culture, personality traits) could still influence outcomes. Moreover, the study does not explore other potential moderators and/or mediators that could influence the relationship between authentic leadership behavior and employee well-being, such as job autonomy, or cultural contexts. Addressing these limitations is essential for maintaining research integrity and accuracy.

Moving forward, employing longitudinal designs can illuminate the causal relationships between authentic leadership and employee well-being over time. To enhance the generalizability, future research should include larger and more diverse samples, considering cross-cultural studies to understand how authentic leadership impacts well-being across different cultural settings. Further research is needed to establish how authentic leadership affects different dimensions of well-being to understand its comprehensive impact on employees.

5.4 Conclusion

This research offers insights into the relationship between authentic leadership behavior, employee well-being, and leader gender. It confirms that authentic leadership positively influences employee well-being, particularly job satisfaction, but does not find evidence supporting leader gender as a significant moderator. The study considers contextual factors such as age, education, tenure, and frequency of interaction in assessing leadership effectiveness.

Employee well-being was assessed from two perspectives: general (hedonic well-being) and job-related (job satisfaction). Results show that authentic leadership significantly enhances job satisfaction but does not impact hedonic well-being. Additionally, there were no significant interaction effects between leader gender and authentic leadership on employee well-being. Both male and female supervisors positively influenced job satisfaction, with slightly stronger correlations observed for female supervisors.

Further analysis reveals gender differences in self-rated authenticity, with male leaders rating themselves higher than women. However, employees perceive female leaders as more authentic than their male colleagues. These findings contribute to discussions on gender dynamics in leadership, highlighting the role of authentic leadership in improving employee well-being and job satisfaction.

Future research should employ longitudinal designs to establish causality and explore additional moderators and mediators to deepen our understanding of these relationships.

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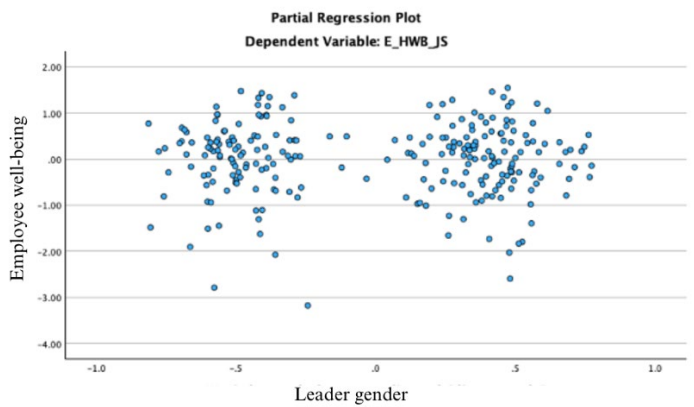
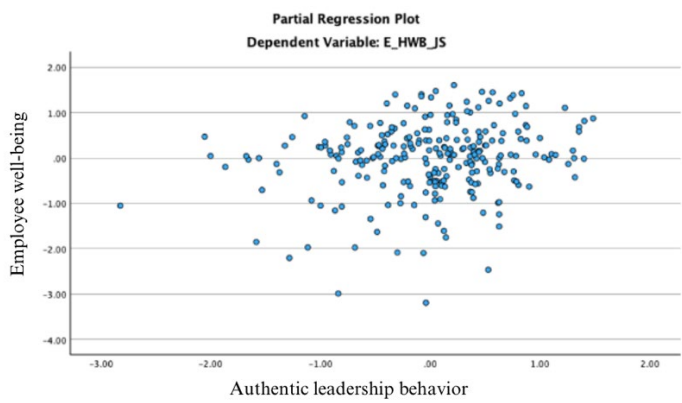
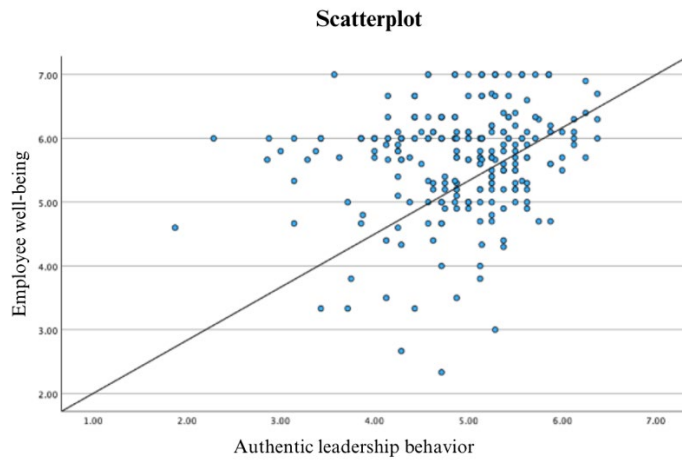
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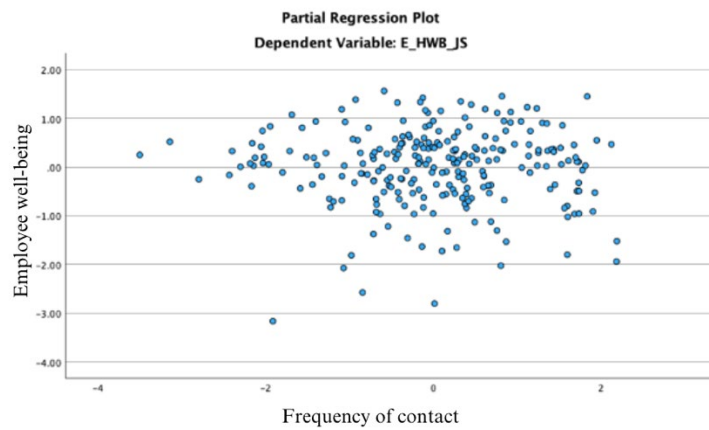
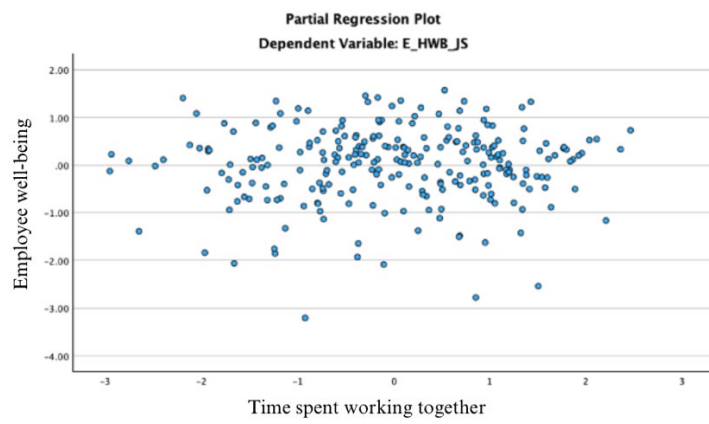
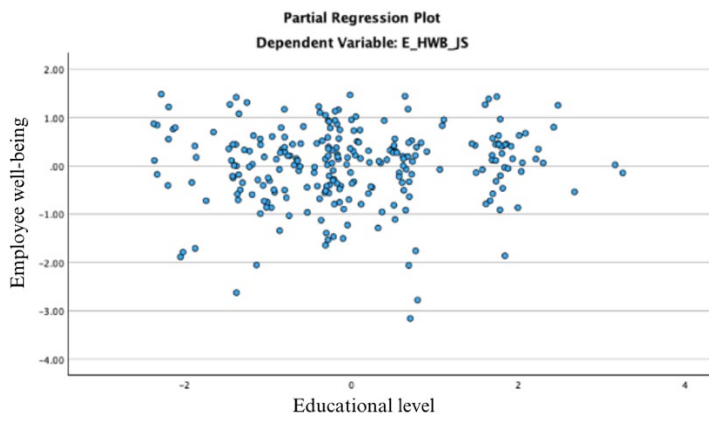
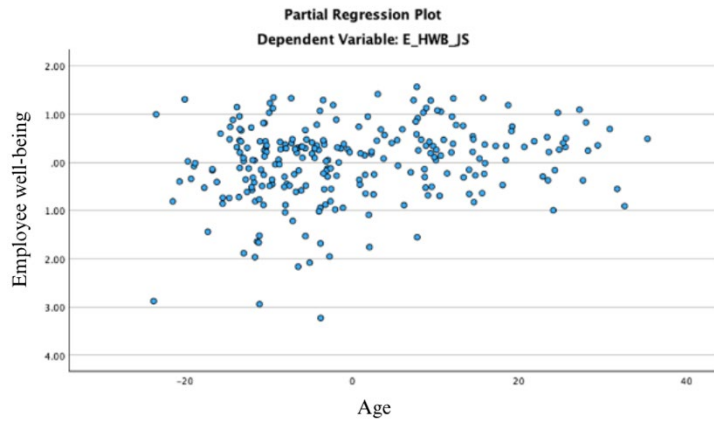
Appendices

Appendix 1 | Assumptions testing

1.1 Linearity

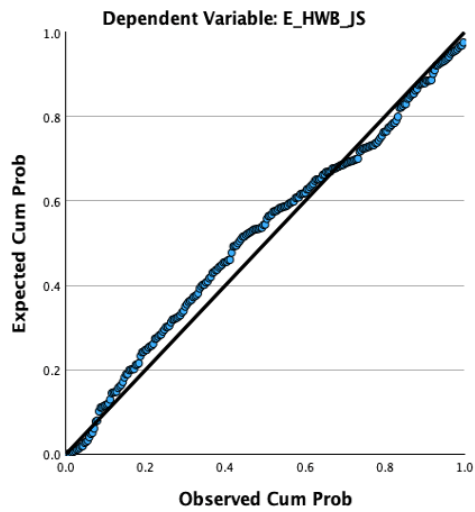
Scatterplot and partial regression plots



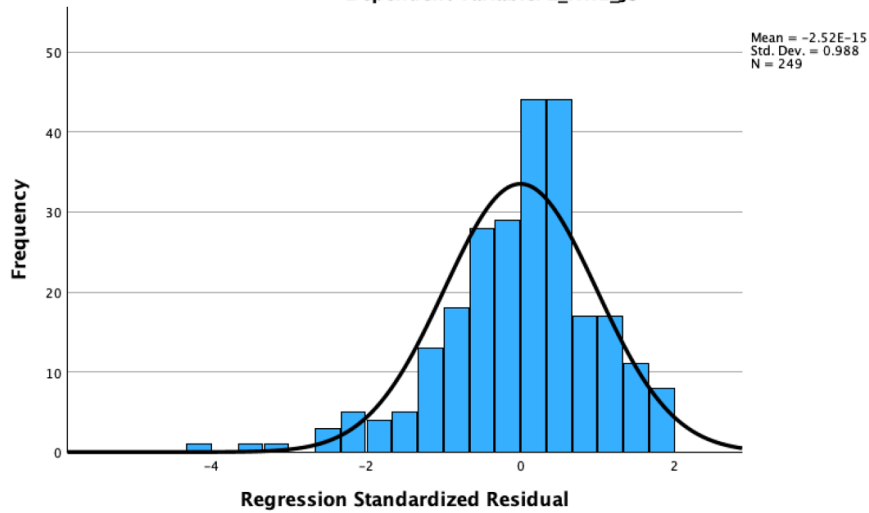


1.2 Normality

Normal P-P Plot of Regression Standardized Residual

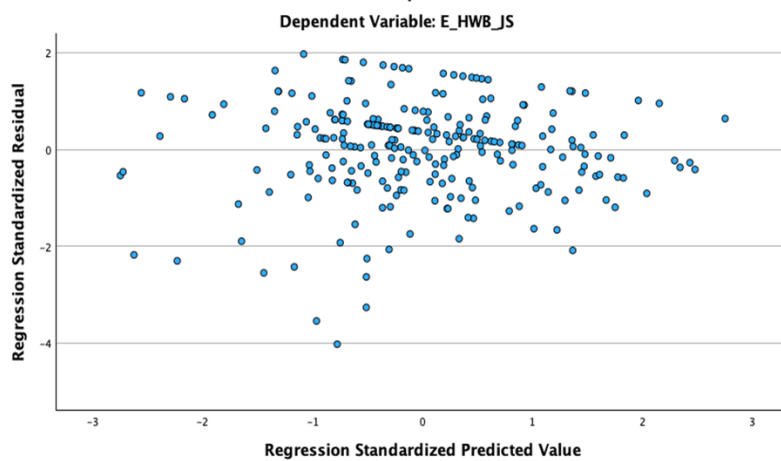


Histogram
Dependent Variable: E_HWB_JS



1.3 Homoscedasticity

Scatterplot



1.4 Independence of error items

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics			Durbin-Watson		
					R Square Change	F Change	Sig. F Change			
1	.304 ^a	0,092	0,070	0,79065	0,092	4,102	6	242	0,001	1,776

a. Predictors: (Constant), E_AuthL2, E_CNT1 Hoe lang werkt u al samen met uw huidige leidinggevende?, E_EDU Wat is uw hoogst

b. Dependent Variable: E_HWB_JS

1.5 The absence of multicollinearity

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	4,038	0,407		9,925	0,000		
	Age	0,012	0,004	0,224	3,191	0,002	0,763	1,311
	Level of education	0,032	0,042	0,047	0,755	0,451	0,953	1,049
	Time spent together	0,027	0,044	0,044	0,621	0,535	0,759	1,318
	Frequency of contact	-0,010	0,046	-0,013	-0,207	0,836	0,915	1,093
	Leader gender	-0,023	0,107	-0,014	-0,215	0,830	0,890	1,124
	Authentic leadership behavior	0,222	0,072	0,199	3,077	0,002	0,898	1,113

a. Dependent Variable: E_HWB_JS

Appendix 2 | Results additional analysis

2.1 Hedonic well-being as a dependent variable

Run MATRIX procedure:

***** PROCESS Procedure for SPSS Version 4.2 *****

Written by Andrew F. Hayes, Ph.D. www.afhayes.com
Documentation available in Hayes (2022). www.guilford.com/p/hayes3

Model : 1
Y : E_HedWB
X : ZE_AL2
W : LDRGNDR

Covariates:
E_AGE E_EDU E_CNT1 E_CNT2_

Sample
Size: 124

OUTCOME VARIABLE:
E_HedWB

Model Summary	R	R-sq	MSE	F	df1	df2	p
	.282	.079	.523	1.428	7.000	116.000	.200

Model	coeff	se	t	p	LLCI	ULCI
constant	4.820	.401	12.031	.000	4.026	5.613
ZE_AL2	.174	.114	1.529	.129	-.051	.399
LDRGNDR	.108	.147	.736	.463	-.183	.398
Int_1	-.110	.144	-.768	.444	-.395	.174
E_AGE	.003	.005	.577	.565	-.007	.013
E_EDU	.082	.064	1.277	.204	-.045	.210
E_CNT1	.117	.062	1.880	.063	-.006	.241
E_CNT2_	-.078	.055	-1.414	.160	-.188	.031

Product terms key:
Int_1 : ZE_AL2 x LDRGNDR

Test(s) of highest order unconditional interaction(s):	R2-chng	F	df1	df2	p
X*W	.005	.590	1.000	116.000	.444

Focal predict: ZE_AL2 (X)
Mod var: LDRGNDR (W)

Conditional effects of the focal predictor at values of the moderator(s):

LDRGNDR	Effect	se	t	p	LLCI	ULCI
.000	.174	.114	1.529	.129	-.051	.399
1.000	.063	.084	.752	.454	-.104	.230

***** ANALYSIS NOTES AND ERRORS *****

Level of confidence for all confidence intervals in output:
95.0000

----- END MATRIX -----

2.2 Job satisfaction as a dependent variable

```

***** PROCESS Procedure for SPSS Version 4.2 *****
          Written by Andrew F. Hayes, Ph.D.      www.afhayes.com
          Documentation available in Hayes (2022). www.guilford.com/p/hayes3

*****
Model   : 1
  Y     : E_JobS
  X     : ZE_AL2
  W     : LDRGNDR

Covariates:
  E_AGE  E_EDU  E_CNT1  E_CNT2_

Sample
Size: 249

*****
OUTCOME VARIABLE:
  E_JobS

Model Summary
      R      R-sq      MSE      F      df1      df2      p
      .411      .169      .781      6.981      7.000      241.000      .000

Model
      coeff      se      t      p      LLCI      ULCI
constant      5.505      .288      19.117      .000      4.938      6.072
ZE_AL2         .354      .100      3.542      .000      .157      .550
LDRGNDR        .013      .120      .112      .911      -.223      .249
Int_1          -.038      .123      -.308      .758      -.279      .204
E_AGE          .016      .004      3.616      .000      .007      .025
E_EDU          .003      .047      .054      .957      -.091      .096
E_CNT1         .018      .049      .371      .711      -.079      .116
E_CNT2_        -.087      .052     -1.676      .095      -.189      .015

Product terms key:
  Int_1      :      ZE_AL2  x      LDRGNDR

Test(s) of highest order unconditional interaction(s):
      R2-chng      F      df1      df2      p
X*W      .000      .095      1.000      241.000      .758
-----
      Focal predict: ZE_AL2  (X)
      Mod var: LDRGNDR  (W)

Conditional effects of the focal predictor at values of the moderator(s):

      LDRGNDR      Effect      se      t      p      LLCI      ULCI
      .000         .354      .100      3.542      .000      .157      .550
      1.000         .316      .073      4.354      .000      .173      .459

***** ANALYSIS NOTES AND ERRORS *****

Level of confidence for all confidence intervals in output:
95.0000

----- END MATRIX -----

```