



UNIVERSIDADE
CATÓLICA
PORTUGUESA

**MINDFULNESS, COMPASSIONATE GOALS AND TIME
AFFLUENCE AMONG GERMAN UNIVERSITY STUDENTS**

Dissertation presented to Universidade Católica Portuguesa
to obtain a Master's Degree in Psychology in Business and
Economics

By

Lavinia Hils

Faculty of Human Sciences

September 2025



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Abstract

This study investigates the relationships between mindfulness, compassionate goals, and the experience of time affluence among German university students, a population affected by time pressure and mental health challenges. Drawing on Self-Determination Theory and Hartmut Rosa's concept of social acceleration, the research examines whether compassionate goals mediate the relationship between mindfulness and time affluence. A cross-sectional online survey was conducted with 194 German students, who completed validated measures of mindfulness (MAAS), compassionate and self-image goals (CSIGS), time affluence (TA) and positive/negative Affect (PANAS). Contrary to the initial hypotheses, mindfulness was not significantly associated with time affluence or compassionate goals. Instead, compassionate goals were positively associated with time affluence, suggesting that interpersonal goals, rather than mindfulness alone, play a central role in shaping how young adults perceive their available time. Compassionate goals were also positively associated with positive affect, indicating that interpersonal goals not only enhance perceptions of time affluence but contribute to greater emotional well-being. Furthermore, students living in urban areas reported higher levels of time affluence, suggesting that contextual factors such as living environment can influence temporal experiences. These findings highlight the importance of compassionate goals in fostering non-zero-sum perceptions of time, in which shared time is experienced as mutually enriching. The study contributes to research on well-being and time perception by examining how compassionate goals influence both, offering theoretical implications for understanding the dynamics between the constructs. From a practical perspective, interventions could combine mindfulness practice with the promotion of compassionate goals. Workshops or peer-support networks may help students reframe time as a shared resource and improve well-being. At an institutional level, integrating compassionate practices into campus culture could further enhance perceptions of time affluence and positive affect. Limitations and directions for future research, particularly the need for longitudinal, cross-cultural, and experimental designs, are discussed.

Keywords: mindfulness, compassionate goals, time affluence, interpersonal goals, German students, mental health, well-being

Resumo

Este estudo investiga as relações entre mindfulness, objetivos compassivos e a experiência de abundância temporal entre estudantes universitários alemães, uma população afetada pela pressão do tempo e por desafios de saúde mental. Com base na Teoria da Autodeterminação e no conceito de aceleração social de Hartmut Rosa, a pesquisa examina se os objetivos compassivos mediam a relação entre mindfulness e abundância temporal. Foi conduzida uma pesquisa online transversal com 194 estudantes alemães, que completaram medidas validadas de mindfulness (MAAS), objetivos compassivos e de autoimagem (CSIGS), abundância temporal (TA) e afeto positivo/negativo (PANAS). Contrariamente às hipóteses iniciais, o mindfulness não se associou significativamente com a abundância temporal nem com os objetivos compassivos. Em vez disso, os objetivos compassivos mostraram-se positivamente associados à abundância temporal, sugerindo que metas interpessoais, mais do que o mindfulness sozinho, desempenham um papel central na forma como os jovens adultos percebem o tempo disponível. Os objetivos compassivos também se associaram positivamente ao afeto positivo, indicando que metas interpessoais não apenas aumentam a percepção de abundância temporal, mas contribuem para maior bem-estar emocional. Além disso, estudantes que vivem em áreas urbanas relataram níveis mais elevados de abundância temporal, sugerindo que fatores contextuais, como o ambiente de vida, podem influenciar as experiências temporais. Estes achados destacam a importância dos objetivos compassivos na promoção de percepções de tempo não zero-sum, nas quais o tempo partilhado é experienciado como mutuamente enriquecedor. O estudo contribui para a pesquisa sobre bem-estar e percepção temporal, examinando como os objetivos compassivos influenciam ambos, oferecendo implicações teóricas para compreender as dinâmicas entre estes constructos. Do ponto de vista prático, intervenções poderiam combinar a prática de mindfulness com a promoção de objetivos compassivos. Workshops ou redes de apoio entre pares podem ajudar os estudantes a reconfigurar o tempo como recurso partilhado e melhorar o bem-estar. Ao nível institucional, integrar práticas compassivas na cultura do campus poderia reforçar ainda mais as percepções de abundância temporal e afeto positivo. Limitações do estudo e direções para pesquisas futuras, especialmente a necessidade de designs longitudinais, interculturais e experimentais, são discutidas.

Palavras-chave: mindfulness, objetivos compassivos, abundância de tempo, objetivos interpessoais, estudantes alemães, saúde mental, bem-estar

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Introduction

The average working hours have continuously decreased since the Industrial Revolution (Absenger et al., 2014; Messenger, 2018) and surveys conducted between 2009 and 2010 show that fewer people reported feeling "constantly rushed" compared to previous years (Robinson, 2012). Although empirical data indicate an increase in leisure time and a fall in subjective time pressure, public discourse remains inconsistent, and many people report feeling overwhelmed by having more tasks than available time (Epstein & Kalleberg, 2004; Hunnicutt, 1998; Perrucci, 2007; Rosa, 2005; Rudd, 2019; Schor, 1992). Mogilner et al. (2012) argue that having more free time does not automatically increase the feeling of time affluence. Instead, spending time in a prosocial manner appears to be a more effective strategy for reducing time pressure than spending time alone. This finding is particularly relevant given that, among adolescents and young adults, opportunities for meaningful, non-digital social interaction have significantly declined in recent years (Twenge et al., 2020; Vilhelmson et al., 2018). For example, in 2017, individuals aged 15 to 25 spent approximately 140 fewer hours per year in face-to-face social interaction compared to 2003 (Twenge et al., 2020). While research on the experience of subjective time constraints is ambiguous, literature agrees on another point: time perception has a significant impact on both physical and mental health. Constant time pressure can be linked to a variety of negative consequences for physical health, including insomnia, fatigue, obesity, high blood pressure, hypertension, and a poorer self-assessment of one's overall health (Banwell et al., 2005; Höge, 2009; Lehto, 1998; Strazdins et al., 2011; Yan, 2003). People who felt less rushed consistently reported higher subjective well-being and greater happiness (Kasser et al., 2009; Robinson, 2012). In contrast, individuals who reported being under time pressure were more affected by negative psychological consequences, showing higher rates of depression and emotional exhaustion, as well as lower subjective well-being, reduced happiness, decreased life and job satisfaction, and diminished mindfulness (Gärling et al., 2016; Kahneman et al., 2004; Kasser et al., 2009; Strazdins et al., 2015; Teuchmann et al., 1999; Roxburgh, 2004; Zuzanek, 2004).

In Germany, mental health issues have been rising sharply, with work absences due to mental illness increasing by 48% between 2013 and 2023 (DAK, 2024), and nearly twice as many individuals reporting depressive symptoms in 2023 compared to 2019 (RKI, 2023). These developments reflect a global trend, with one in eight individuals living with a mental disorder in 2019, most commonly depression or anxiety (WHO, 2021). The economic losses

associated with mental health conditions are substantial, with estimated global costs of \$16.3 trillion between 2011 and 2030 (WHO, 2021). Given the close link between perceived time pressure and mental health (Roxburgh, 2004; Gärling et al., 2016), understanding the mechanisms of time affluence is crucial for promoting well-being and developing effective interventions.

Mindfulness has emerged as a promising approach to address time-related stress. It is associated with a greater sense of time affluence (Rudd, 2019; Schaupp et al., 2021), yet the mechanisms underlying this relationship remain underexplored (Morin, 2024). Additionally, mindfulness is linked to prosocial behavior (Donald et al., 2019; Furnell et al., 2024), and prosocial actions such as giving time to others have been shown to enhance subjective time affluence (Mogilner, 2012). Compassionate goals may foster a non-zero-sum perception of time (Niiya & Suyama, 2024).

Young adults represent a particularly relevant population for this research. Opportunities for meaningful, non-digital social interaction have declined significantly among this age group (Twenge et al., 2020; Vilhelmson et al., 2018), while they simultaneously report higher rates of mental health disorders compared to older adults (RKI, 2023). Evidence suggests that younger adults benefit more consistently from mindfulness interventions, especially in coping with anticipatory stressors, independent of socioeconomic status (Cobler, 2022). University students are especially suitable for studying these dynamics, as they face high stress related to time management, academic pressures, and reduced opportunities for leisure and social interaction (Filho et al., 2020; Panda, 2015). Furthermore, students are generally more familiar with mindfulness concepts due to their educational background (Olano et al., 2015), increasing the likelihood of engagement and self-reflection. Literature emphasizes the importance of implementing university-based interventions to support student well-being, such as mindfulness training and stress management programs (Hamaideh, 2010).

Built on these theoretical and empirical foundations, this thesis investigates the following research questions: “Are mindfulness, compassionate goals, and time affluence significantly associated constructs?” and “Do compassionate goals mediate the relationship between mindfulness and time affluence?” By exploring these questions, the study aims to shed light on how psychological resources can help individuals regain a more relaxed and meaningful experience of time.

The structure of this thesis is as follows: Chapter 2 presents the theoretical framework and outlines the proposed conceptual model. Chapter 3 provides a review of the relevant

literature focusing on empirical research on the association among mindfulness, compassionate goals, and time affluence. Chapter 4 introduces the research model and the specific hypotheses that will be tested. Chapter 5 describes the methodology, including study design, sample, instruments, and data analysis strategy. Chapter 6 reports the results, followed by a discussion of findings and their contribution to theory and practice in Chapter 7.

Conceptual Clarifications and Relevant Theories

First, the central concepts are delineated and defined to clarify what will be discussed in the further course of the paper. On this basis, the theoretical framework is then presented. The starting point and overarching framework is Hartmut Rosa's theory of social acceleration, particularly his concepts of alienation and resonance (Rosa, 2013). Complementary to this, reflections on internalized capitalism by other authors are also considered. This is followed by an explanation of the Self-Determination Theory (SDT) and is extended by how the constructs of mindfulness and time affluence, according to various authors, may contribute to fulfilling the basic psychological needs postulated by SDT (Deci et al. 2008; Brown et al. 2003; Kasser et al. 2009). Finally, the concept of zero-sum time perception, as introduced by Niiyan et al. (2019), is discussed, which sheds light on the subjective experience of time in the context of social goal orientation.

Central Concepts

Time perception refers to the human ability to perceive the duration, sequence, and speed of events (Detel, 2021). A distinction can be made between objective and subjective perspectives. The objective perspective on time views it as an external, measurable entity that exists independently of individual perceptions. The chronometric perspective, quantified through physical clocks, calendars, or standardized time units, emphasizes the linear and uniform nature of time (Roe, 2008). In economics, time is considered an objective good, and within the economic model of time utilization, time is a scarce resource that must be used efficiently, much like money, to achieve maximum benefit (Klein, 2007). In contrast, the subjective perspective on time understands it as a construct influenced by psychological factors such as attention, emotions, and cultural and social influences (Grondin, 2010). Subjective time perception is heavily dependent on neural mechanisms in the brain and is

susceptible to distortions. This perspective emphasizes that time is not merely linear and physical but is significantly modulated by mental processes and social contexts (Eagleman, 2008).

Perceived Time Constraints is a comprehensive construct. Based on the analysis of heterogeneous terminology in the literature, this thesis combines several concepts like chronic time pressure, time shortage and time scarcity into one superordinate concept. While the individual constructs differ slightly in their definitions, they share a common core of the subjective experience of time as a limited resource. Chronic time pressure (CTP) refers to the ongoing experience of insufficient time, combining two main aspects: time shortage and feeling rushed. Time shortage is the subjective perception of not having enough time for specific activities, such as work, relationships, or leisure, often linked to time allocation challenges. In contrast, feeling rushed is the subjective, emotional experience of a hectic pace of life, characterized by stress, anxiety, and frustration (Szollos, 2009). Time Scarcity refers to the perception or experience of not having enough time to meet all demands and obligations. This construct involves both objective constraints, such as limited available time for activities and subjective experiences, including feelings of being rushed or overwhelmed (Strazdins et al., 2011; Kaufman-Scarborough et al., 2003). By treating these concepts as part of a single construct, perceived time constraints, this study aims to investigate their collective impact. Although perceived time constraints are not empirically examined or further investigated in the present study, it is still useful to define the concept theoretically. It is also essential for preparing the analysis of society by Rosa (2005), which will follow in the next section. While this concept is not part of the research model, it functions as a theoretical counterpart to time affluence and is intended to contribute to a better understanding.

Time affluence, as defined by Geiger et al. (2021), refers to a state of having sufficient discretionary time that supports well-being and allows individuals to engage in activities at an unhurried pace. It extends beyond merely having free time by incorporating qualitative dimensions, such as the ability to plan reliably (plannability), exercise self-determination over time use (sovereignty), and synchronize effectively with others' time requirements (synchronization). This holistic perspective positions time affluence as a crucial factor for life satisfaction and sustainable lifestyles (Geiger et al., 2021).

Mindfulness is described as a process that directs a particular quality of attention to the experience of the present moment (Kabat-Zinn, 2009). The ability to cultivate mindfulness is primarily enhanced through various meditation techniques, which originate from Buddhist spiritual practices (Hanh, 1991). In Buddhist traditions, mindfulness plays a

central role in a system designed as a path to overcome personal suffering (Thera, 1962). In modern psychology, mindfulness has been adopted as a method to enhance awareness and address mental processes that address emotional stress and dysfunctional behavior in a constructive way. The widespread interest in the clinical applications of mindfulness was significantly influenced by the introduction of the "Mindfulness-Based Stress Reduction" (MBSR) program (Kabat-Zinn, 1982; Kabat-Zinn et al., 1985). Mindfulness is considered both an individual, relatively stable disposition (trait, measured by the Mindful Attention Awareness Scale, MAAS) and a trainable skill, referred to as state (Brown et al., 2003). Bishop et al. (2004) operationalizes mindfulness as a two-component process. The self-regulation of attention involves consciously directing and sustaining attention on the present moment, allowing for the perception of mental events as they occur. This practice is intended to reduce excessive rumination or automatic reactions. The second component, orientation to experience, describes a mindful approach to present-moment events characterized by curiosity, openness, and acceptance. Every sensation or feeling that arises is observed without judgment or attempts to alter it, fostering an accepting attitude toward the here and now. Mindfulness is understood as a state that can be cultivated through intentional practices such as meditation (Bishop et al. 2004).

Compassionate goals are interpersonal objectives driven by a sincere motivation to support others and avoid causing harm. They are rooted in an ecosystem perspective, which views social relationships as mutually supportive, connected, and cooperative. In this framework, the well-being of others is considered just as important as one's own. Individuals with compassionate goals believe that the well-being of all parties is interconnected and that helping others does not represent a personal sacrifice but rather a shared benefit (Canevello et al., 2020). Compassionate goals differ from general prosocial tendencies because they are grounded in consciously chosen values rather than obligation or emotionally driven reactions and showed behavior. Compassionate goals are the general attitude, how you embrace relationships to others and they reflect a nonzero-sum understanding of relationships. Helping others is seen as an opportunity to strengthen one's own sense of meaning and belonging (Niiya et al., 2019). Empirical findings show that compassionate goals are associated with greater prosocial behavior, higher relationship satisfaction, and improved psychological well-being (Canevello et al., 2020; Niiya, 2019). In contrast, self-image goals aim to maintain or enhance how one is perceived by others. They are based on an egosystem perspective, characterized by self-centeredness, competitiveness, and a zero-sum logic meaning that one person's success is seen as another's loss (Crocker & Canevello, 2008). Compassionate goals

and self-image goals therefore represent two fundamental and contrasting forms of interpersonal goal orientation, reflecting different motivational approaches to social relationships.

Positive affect (PA) and *negative affect (NA)* are two dominant, relatively independent dimensions of mood that consistently emerge in studies of affect structure (Watson & Tellegen, 1985). Positive and negative affect are key dimensions of well-being. Over longer periods, PA and NA appear more independent, but show stronger negative correlations during intense emotional experiences (Diener & Emmons, 1984). PA is associated with better academic achievement, mental health, and life satisfaction, while NA correlates negatively with these outcomes (Pinedo González et al., 2017). The balance between positive and negative affect plays a crucial role in subjective well-being and mental health. A higher ratio of positive to negative emotions is associated with greater psychological flourishing, resilience, and life satisfaction, whereas a lower ratio is linked to increased stress and reduced well-being (Diehl et al., 2011). Understanding PA and NA is crucial for healthcare professionals in diagnosing and addressing mental health issues, particularly in light of the World Health Organization's focus on depression awareness (Mariette & Majid, 2017).

Societal Theories

The central theoretical foundation of this thesis is the theory of social acceleration developed by sociologist Hartmut Rosa. This theory describes fundamental changes in modern societies caused by acceleration, which strongly shape modern life. Rosa focuses particularly on how acceleration affects people's experience of time, relationships, and the sense of control over one's own life (Rosa, 2013). In his theory of social acceleration, Rosa identifies three key forms in which this acceleration becomes visible. First, there is technological acceleration, meaning the ongoing improvement of transport, communication, and production processes. Second, the acceleration of social change, meaning the increasing pace at which social norms, roles, and institutions evolve. And third, the acceleration of the pace of life is the expectation that more activities must be completed in less time. Rosa further explains that although technological advancements are intended to save time, they often have the opposite effect. Instead of "having more time," increased efficiency leads to higher expectations and demands, for example in work, private life, and communication. Rosa refers to this paradoxical state as a "frenetic standstill" (Rosa, 2013). Rosa continues by showing how this societal logic of constant innovation and optimization causes the present

moment to shrink. Due to multitasking, the compression of time (e.g., through time management), and the lack of real pauses, people experience a permanent feeling of time pressure and inner stress. Even though time is objectively saved, subjectively there is a constant sense of never having enough of it. A key problem that Rosa identifies in connection with acceleration is the feeling of alienation. Acceleration causes people to lose their sense of connection to the world, to others, to their work, and even to themselves. This alienation can be seen in superficial relationships, feelings of meaninglessness, or inner emptiness. Rosa describes alienation as a state in which people experience the world only in a functional and instrumental way, rather than in a meaningful or emotionally resonant way. Rosa states that this is a major cause of dissatisfaction in modern society (Rosa, 2013). As a counterpart to alienation, Rosa introduces the concept of resonance. Resonance refers to a way of relating to the world in which mutual responsiveness, emotional depth, and genuine connection are possible. It can arise in many contexts for example in human relationships, in nature, in art, or in meaningful activities. However, resonance cannot be forced or manufactured; it only emerges under certain conditions, especially when time, openness, and attention are present. Rosa argues that modern societies tend to create structures that hinder the development of resonance like pressure to perform, the pursuit of efficiency, and constant self-optimization often stand in the way of a resonant relationship to the world. In this sense, resonance can be seen as a critical countermodel to the logic of late-modern acceleration and as a possible path toward greater satisfaction and connection in life (Rosa, 2013).

Internalized capitalism and its consequences are the subject of many sociological theories. It means that people adopt the demands of the economic market into their own thinking and behavior. One's self-worth is measured by how productive, busy, or efficient one is. Leisure time is no longer seen as a space for recovery but as potential "unused time." As a result, the pursuit of performance and success becomes the dominant standard not only in work life but also in private life. Even in moments of rest or social interaction, there is a subtle pressure to use this time in a meaningful, efficient, or "profitable" way (Tomlinson, 2007). Southerton (2020) describes this phenomenon as a culturally rooted dynamic in which time scarcity is not only seen as a problem but increasingly as a sign of importance and social status. Those who are constantly busy, always reachable, and rarely at rest are seen as in demand, successful and committed. In modern society, the image of the constantly busy person is developed into a new ideal type. Being "busy" becomes a status symbol, signaling that one is important. This form of self-presentation can be observed in the workplace as well as on social media or in everyday conversations. This phenomenon can be understood as an

expression of internalized capitalism. The result is a lifestyle in which time becomes increasingly scarce and not because it is objectively lacking, but because it is expected to be used as efficiently as possible (Southerton, 2020). Following this line of thought, the understanding of time changes. In a societal context where economic principles are translated into shared patterns of thinking, time becomes a resource that must be strategically managed, optimized, and used efficiently. Even leisure time is subject to this logic, as it is expected to be used meaningfully and productively. This fundamentally shifts the perception of time from an open, experiential moment to an economically managed asset. This view reinforces the feeling of subjective time scarcity, even when there is objectively enough time available (Adam, 2006; Wajcman, 2015). The development described here is closely linked to Rosa's theory, as structural acceleration in society is reinforced and sustained by individual mindsets and actions. Internalized capitalism contributes to this by embedding acceleration not only in external structures, but also deeply into people's self-concept and everyday routines. As a result, the focus shifts more toward the quantity rather than the quality of experiences, fundamentally altering the subjective perception of time (Rosa, 2013).

Mindfulness and Time Affluence in the Light of Self-Determination Theory

Psychological models and socio-psychological findings can be integrated into the theory of social acceleration and internalized capitalism, offering an additional perspective on the experience of time. The following section explores Self-Determination Theory (SDT) in more detail and explains how mindfulness and time affluence can contribute to the development of well-being. These concepts help to shed light on individual processes that are closely linked to the societal conditions described earlier.

Self-Determination Theory (SDT) was developed by Deci and Ryan (2008) and is considered one of the most influential theories in motivational psychology. At its core is the assumption that humans have an innate drive for personal growth, psychological well-being, and intrinsic motivation. The fulfillment of certain psychological conditions is essential for this. SDT identifies three basic psychological needs that are essential for a healthy and self-determined life. The first is autonomy. Autonomy refers to the feeling of being able to shape one's life and actions freely and voluntarily. The second need is competence, which means the experience of effectiveness and the ability to meet challenges successfully. The third basic need is relatedness. It describes the need for belonging, acceptance, and emotional connection with others. The theory also distinguishes between intrinsic and extrinsic

motivation. While intrinsic motivation arises from interest in the activity itself, extrinsic motivation is influenced by external factors such as rewards or social pressure. The better these three basic needs are fulfilled, the more likely it is that extrinsic motivation will be transformed into a stable, self-determined form and thereby contribute to long-term well-being (Deci & Ryan, 2008). A key aspect of this thesis is the close connection between mindfulness and Self-Determination Theory. Brown et al. (2003) showed that mindful individuals perceive their own needs, values, and emotions more clearly and are therefore more likely to make self-determined decisions. Mindfulness thus contributes to the fulfillment of the three basic psychological needs. It supports autonomy by encouraging conscious, self-reflective decisions. Furthermore, mindfulness promotes competence by enabling realistic self-perception and appropriate responses to challenges. It also contributes to social relatedness by fostering empathy and presence in interpersonal relationships. Considering this, this work is interpreting mindfulness as a counterweight to societal acceleration, as it allows individuals to withdraw from constant external stimulation and engage more consciously with their own time, attention, and relationship to the world. This ultimately creates the conditions for resonance, as described by Rosa.

Another central construct to be discussed in connection with SDT is time affluence. In their study, Kasser and Sheldon (2009) demonstrated that time affluence supports the fulfillment of the three basic psychological needs outlined by SDT. Those who have sufficient time are more likely to act autonomously, engage in activities in which they experience competence, and maintain social relationships (relatedness). Time affluence can thus be understood as a form of psychological wealth. It is a state in which time is not only available, but also experienced as meaningful, fulfilling, and shareable with others.

The Social Psychology of Time: Zero-Sum and Nonzero-Sum Perspectives

The empirically based model of zero-sum vs. nonzero-sum time perception by Niiya et al. (2019) provides insights into how individuals perceive time in social contexts.

Zero-sum time perception assumes that individuals see time as a limited resource that must be divided. From this perspective, spending time on someone else means "losing" time that could have been used for one's own tasks, needs, or recovery. This understanding of time encourages competition and can put social interactions under pressure. Time is viewed functionally here and as something that is "used up" or "sacrificed." Zero-sum time

perception closely resembles the logic of internalized capitalism, where time must be used efficiently and should not be "wasted."

In contrast, *nonzero-sum time perception* is based on the idea that time is particularly created and experienced together in social relationships. Time spent with others is not seen as a loss, but as a gain for both sides. Shared activities provide meaning, strengthen bonds, and create positive emotions. This understanding of time is cooperative and focused on connection. It strongly reflects Rosa's concept of resonance, where the quality of the relationship takes priority over the quantity of "used" time.

Whether people experience time more as zero-sum or nonzero-sum depends, according to Niiya et al. (2019), largely on their internalized interpersonal goals. Individuals with compassionate goals, meaning empathetic, community-oriented aims, are more likely to adopt a nonzero-sum perception of time. For them, time spent with or for others is not a limitation, but an opportunity for connection and shared experience. This mindset supports deeper relationships, greater empathy, and a stronger sense of belonging. Moreover, people with a nonzero-sum perspective tend to report higher subjective time affluence, even if they do not objectively have more free time. They feel more "time-rich" and report less stress, greater well-being, and stronger satisfaction of psychological needs, especially in social relatedness (Niiya et al., 2019). Zero-sum time perception, by contrast, is often associated with self-image goals. These are goals that focus on one's own self-presentation. People with such goals often experience time spent on others as a burden or loss. This is linked not only to lower need satisfaction but also to higher stress and lower subjective time affluence. The model by Niiya et al. (2019) thus offers an important addition to the previously discussed theories. It makes clear that not only external structures and objective time are decisive, but also the subjective evaluation and social embedding of time. Particularly relevant is the role of compassionate goals as a key factor. They not only support a more positive perception of time but also create conditions under which resonance, in Rosa's sense, can emerge.

Integration of Theories: Pathways to Well-Being through Social Connectedness

Following the insights of the central theoretical foundations, the different approaches will now be linked to derive how mindfulness, compassionate goals, and time affluence might be related. A graphical representation of the integrative conceptual framework is provided in Appendix D.

Mindfulness and time affluence can be understood as psychological prerequisites for resonance since they foster social connectedness and create the openness and receptivity to the environment that Rosa (2003) describes as essential for a resonant relationship with the world. Moreover, resonance is associated with greater well-being, whereas its absence (alienation) reduces quality of life. This is closely related to Self-Determination Theory (SDT), as both mindfulness and time affluence contribute to the fulfillment of the three basic psychological needs, thereby promoting well-being. In particular, these constructs foster conditions that strengthen social bonds, highlighting their important role in shaping how individuals experience social relationships.

Another key aspect of this thesis is the consideration of the subjective experience of time depending on the types of interpersonal goals people pursue in social relationships. Individuals who pursue compassionate goals report higher levels of time affluence. It can be assumed that such compassionate goals are more likely to arise in more mindful individuals, because they are more able to perceive, support, and appreciate others. As mindfulness supports autonomy and competence, it can be assumed that more mindful individuals experience greater time affluence than those who are less mindful. This, again, includes mindfulness in this theoretical perspective of compassionate goals and time affluence. Based on these theoretical considerations, it can be concluded that mindfulness, time affluence, compassionate goals and well-being are closely interrelated.

Empirical Insights into the Associations between Constructs

To examine the direction of these connections more precisely, the next chapter presents the state-of-the-art literature on the associations between mindfulness, compassionate goals, time affluence and well-being.

Mindfulness and Its Empirical Links to Compassionate Goals and Time Affluence

Mindfulness is associated with several positive psychological and social effects, including emotional well-being, social goal orientation, time perception, and prosocial behavior (Brown et al., 2003; Donald et al., 2019; Morin et al., 2024). Also, it can be deliberately trained and developed through targeted interventions (Zang et al., 2021). In this work it is assumed that mindfulness can serve as a concrete lever to influence the underlying mechanism and ultimately promote students' sense of time affluence in a positive way. The

following section summarizes and compares key studies that have empirically examined this associations. The aim is to present findings and to identify existing research gaps that this thesis aims to address.

The foundational study by Brown and Ryan (2003) was one of the first to conceptualize mindfulness as a dispositional trait and to systematically examine its relationship with psychological well-being. They also developed and validated the MAAS scale, which will be used in this thesis to measure this construct. Across a series of methodologically robust studies involving various samples, the authors conducted cross-sectional studies with students, longitudinal diary studies and experimental designs involving mindfulness interventions. For example, they employed experience-sampling methods to assess mindfulness in natural contexts and used structured questionnaires to measure well-being, autonomy and stress. In one study, a standardized MBSR program was implemented to examine the effects of formal mindfulness practice. The results showed that higher MAAS scores were significantly correlated with lower levels of neuroticism, depression, anxiety, and rumination and with higher levels of self-esteem, life satisfaction, vitality, autonomy, perceived competence and social connectedness (Brown & Ryan, 2003). This work is particularly relevant as it provides empirical support for the link between mindfulness and the basic psychological needs defined by Self-Determination Theory (SDT) (Deci & Ryan, 2008). It thus forms a theoretical bridge to the present study, which investigates mindfulness as a factor influencing need satisfaction, social goal orientation, and time affluence (Brown & Ryan, 2003).

A theory-based approach to understanding the relationship between compassion and mindfulness is provided by Tirth (2010). In his interdisciplinary analysis, he argues that mindfulness forms the emotional and neural foundation for the development of compassion. Drawing on evolutionary psychology and neuroscience, he demonstrates how mindfulness supports emotional distancing and emotion regulation. Tirth (2010) explains, that mindfulness creates an inner state that allows emotional distance from distressing content, which serves as the basis for adopting compassionate perspectives. Furthermore, he states that compassion is rooted in an evolutionarily shaped neurophysiological system (e.g., the ventral vagal system) that supports social bonding and caregiving. From a neuroscientific perspective, mindfulness is said to strengthen brain regions associated with empathy, self-regulation, and prosocial behavior (e.g., the ACC, insula, and prefrontal cortex). He further describes how self-compassion and compassion for others emerge from the experience of being part of an interconnected social whole. Tirth (2010) refers to this as a

“neuropsychological platform” on which compassion can flourish, with mindfulness serving as the stabilizing foundation.

This assumption is further supported by Condon (2016), who, in a review chapter, brings together numerous studies and argues that mindfulness contributes not only to momentary states of compassion but also to the development of longer-term compassionate goal orientations. Mindfulness increases attentiveness to others and reduces automatic response patterns, thereby supporting the formation of stable social intentions (Condon, 2016). An empirical finding building on the theoretical considerations of Tirsch (2010) and Condon (2016) was provided by Stewart et al. (2018) in a three-part study series. Through two cross-sectional studies and a two-week diary study with students, the authors systematically examined whether mindfulness, measured by the Five Facet Mindfulness Questionnaire, was related to compassionate goals. The results show that individuals with higher levels of mindfulness consistently reported more compassionate goals and fewer self-image goals. In particular, the facets “Acting with Awareness” and “Observing” significantly predicted compassionate goal orientation (Stewart et al., 2018). These findings support the core assumption of the present thesis, that mindfulness and compassionate goals are correlated and are therefore central to the research question.

The practice-oriented study by Orellana-Rios et al. (2018) demonstrates that mindfulness- and compassion-based interventions can lead to a shift in internal attitudes. In a ten-day intervention with palliative care professionals, including practices such as mindfulness, loving-kindness, and Tonglen, the participants reported significantly lower stress levels, greater self-care, and a deeper sense of connection with patients (Orellana-Rios et al., 2018). These changes suggest a perceived shift toward a compassionate goal orientation, even though compassionate goals were not directly measured. This study is particularly shows that mindfulness training in real relational contexts can lead to measurable social and motivational changes.

Schaupp and Geiger (2021) provided empirical evidence for the relationship between mindfulness, time affluence and well-being in the first longitudinal study to test this connection using an active control group. In a controlled intervention study, they examined the effects of a standardized eight-week MBSR program (Mindfulness-Based Stress Reduction) compared to an active control group that participated in a physical activity program. The sample included 96 participants who completed standardized questionnaires on mindfulness, time affluence and well-being before and after the intervention. The results showed that the MBSR group reported significant increases in all three variables compared to

the control group. The intervention led to significant improvements in dispositional mindfulness ($t(34) = 8.93, p < .001, d = 1.51$), time affluence ($t(34) = 6.27, p < .001, d = 1.06$), and well-being ($t(34) = 6.91, p < .001, d = 1.17$) in the treatment group, indicating strong effects of the intervention across all three outcomes. Their mediation model showed a significant indirect effect of mindfulness on well-being via time affluence ($a \times b = .213, 95\% \text{ CI } [.091, .364]$), accounting for 35.7% of the total effect ($c = .595$) and indicating partial mediation. These results provide statistical support for the construct validity and explanatory relevance of time affluence in the relationship between mindfulness and well-being (Schaupp et al. 2021).

That mindfulness can influence time perception is also shown by Morin and Grondin (2024). Their systematic review analyzed 47 empirical studies that used various methodological approaches to examine time perception in connection with mindfulness. These included experimental paradigms such as time production, prospective and retrospective time estimation, as well as questionnaire-based assessments in daily life. The studies involved both meditating and non-meditating samples across different cultures and age groups. Morin and Grondin (2024) found consistent evidence that, under certain conditions, mindfulness leads to a slowed sense of time, greater present-moment awareness, and an increased feeling of autonomy, key components of time affluence. Interventions that explicitly aimed to cultivate mindful presence were particularly effective (Morin & Grodin, 2024). Their review shows that mindfulness can foster a decelerated, more self-determined experience of time, thus positively affecting the feeling of time affluence. In concluding their study, Morin and Grodin (2024) emphasize that while theoretical models linking mindfulness and time perception exist, there is still a lack of studies specifically investigating the underlying mechanisms. They recommend further research to deepen the understanding of both phenomena (Morin et al., 2024). These results highlight the relevance of mindfulness as a resource for subjective time affluence and provide insights into how mindfulness can influence cognitive processes related to time perception.

The study by Chen et al. (2017) examined the relationship between mindfulness, the subjective feeling of time affluence and subjective well-being. The aim was to determine whether time affluence functions as a mediating mechanism between mindfulness and well-being. To this end, 205 Chinese university students completed standardized questionnaires: the Mindful Attention Awareness Scale (MAAS), the Time Affluence Scale, and a scale measuring subjective well-being. Statistical analyses included correlation and mediation analyses. The results showed that mindfulness was significantly positively correlated with

both time affluence and subjective well-being. Likewise, a significant positive relationship was found between time affluence and well-being. Notably, time affluence was identified as a significant mediator in the relationship between mindfulness and well-being. This means that individuals with higher levels of mindfulness experience their time as less rushed and more abundant, which in turn contributes to increased subjective well-being. An alternative model that tested mindfulness as a mediator between time affluence and well-being was also significant but showed lower explanatory power. Overall, the study supports the assumption that mindfulness can positively influence well-being indirectly through the experience of time affluence (Chen et al., 2017).

Compassionate Goals: Empirical Foundations and relation to Time Experience

Canevello et al. (2020) examined in three studies with about 1,100 U.S. college students whether compassionate goals are distinct from related constructs and explain unique variance in prosocial behavior. Their findings show that, despite correlations with other constructs, compassionate goals are empirically independent and significantly predict prosocial behavior even when controlling for variables such as social desirability, gender, or self-focused motives. Importantly, compassionate behavior (e.g., helping others) often leads to receiving something positive in return, such as expressions of gratitude. This highlights the relational benefits of such goals (Canevello et al., 2020).

Niiya et al. (2013) examined whether compassionate and self-image goals also exist as separate motivational constructs in non-Western cultures and how they affect relationship experience. In doing so, they tested the cross-cultural validity of compassionate goals. The authors combined quantitative cross-sectional data from the USA and Japan, which showed that the two-factor structure of the goals was confirmed in both cultures and that the differences between compassionate and self-image goals could also be clearly identified in Japan. The study thus provides evidence-based indications that compassionate goals, independent of cultural norms such as the widespread expectation in Japan to “be harmonious”, are associated with positive psychosocial effects. They thus promote self-compassion, cooperation, growth orientation, and constructive conflict resolution across cultures (Niiya, 2013). This is particularly relevant for this thesis, as it becomes clear that compassionate goals do not measure culturally shaped conformity, but rather a psychological motivation that is relevant across cultures.

The study by Canevello and Crocker (2017) aimed to investigate why people experience social situations differently and to what extent compassionate goals contribute to positive emotional experiences in social interactions. In four empirical studies, the authors explored whether and how compassionate goals promote feelings such as social connectedness, clarity, and inner peace. They combined various methodological approaches, including laboratory and field studies as well as longitudinal and diary designs to capture both short-term and enduring effects. The central finding of the study series is that compassionate goals are consistently associated with positive social affect, even in stressful or conflict-laden situations. This connection was confirmed across different contexts, such as interactions with romantic partners or roommates. A cooperative mindset was identified as the mediating mechanism. Individuals who focused on collaboration and mutual well-being in social situations reported stronger feelings of calm and connectedness. These effects could not be explained by general positive mood or the behavior of the interaction partner. Rather, a temporally ordered dynamic emerged. Compassionate goals first led to a cooperative mindset, which in turn fostered positive social affect. These temporally stable patterns point to causal and self-reinforcing processes that sustainably influence social experience (Canevello et al., 2017).

Yue and Yang (2022) examined two representative U.S. samples and found that compassionate goals lead to prosocial behavior through specific emotions (sympathy, solidarity). In doing so, they investigated the motivational and emotional foundations of prosocial behavior during the COVID-19 pandemic. The study also showed that social embeddedness plays a role. Specifically, it was examined whether the emotional mediation was influenced by whether the target was part of the ingroup or outgroup. This highlights that compassionate goals operate in a socially context-sensitive manner and that their emotional mediation mechanisms adapt to the social situation. This is important because it emphasizes context dependency. People act differently depending on their relationship to the person in need. Compassionate goals therefore do not work in a generalized way but unfold their effects within a network of social relationships that must be carefully considered (Yue & Yang, 2022). This is particularly relevant for the present thesis, as it suggests that if compassionate goals function differently depending on context, their effects on time perception should likewise be examined in a differentiated manner.

Particularly noteworthy for this work is the study by Niiya and Suyama (2024), as it empirically examines a previously underexplored connection between compassionate goals and subjective time experience. In an experience-sampling study, 142 Japanese adults were

surveyed five times per day over seven days, resulting in more than 4,000 micro-observations. Participants recorded their social goals, interactions, time perception, and well-being. The results show that compassionate goals are significantly associated with a *non-zero-sum* perception of time. This means that when people pursue compassionate goals, they do not experience shared time as a burden but as mutual enrichment. This effect, in turn, promotes higher well-being and reduces feelings of time pressure (Niiya & Suyama, 2024). Thus, the study not only provides key empirical evidence for the link between compassionate goals and time affluence but also forms the theoretical core of the present thesis. The internalized belief that compassion, that doing something good for others, does not harm or take away from oneself appears to extend to the subjective experience of time. Spending time for others does not necessarily mean having less time for oneself. The authors also recommend that future studies focus on whether holding compassionate goals as a motivational mindset is sufficient to perceive time as non-zero-sum, or whether actual compassionate behavior is necessary to generate this effect (Niiya & Suyama, 2024). The model developed in this work builds on these findings and integrates them into a broader perspective, in which mindfulness, through compassionate goals, leads to a more fulfilling experience of time.

Perceived Time Constrains: Health Outcomes and Social Inequalities

Time pressure is more strongly associated with poor mental health, well-being (Strazdins et al., 2011; Roxburgh, 2004) and poor self-rated health (Strazdins, 2015). Time pressure and stress are positively correlated with symptoms such as headaches, muscle pain, and anxiety. Stress-related symptoms are intensified when people are unable to manage goal conflicts or cope with time pressure (Gärling et al., 2016). The negative effects of time pressure on well-being are fully mediated by goal obstructions (e.g., the feeling of not making progress) and time-related stress. Goal obstructions have a stronger negative impact on well-being than stress (Gärling et al., 2016).

Certain social groups report experiencing time pressure more frequently than others. Social status, gender, as well as monetary and social resources, influence an individual's perceived time scarcity (Strazdins et al., 2015). Interactions between these factors make some groups particularly vulnerable to time pressure. In the study of men and women, differences in the negative effects of time pressure on the genders were identified. Women consistently report experiencing greater time pressure than men, regardless of professional status or the

number of daily activities (Sullivan, 2017). This can be explained by gender-specific role models and societal expectations. Women who perform both paid and unpaid work more frequently experience time conflicts (Strazdins et al, 2015). Women are particularly affected due to gender-specific demands in roles such as housework, parenting, and employment. Time pressure accounts for a significant portion of the higher levels of depression among working women compared to men (Roxburgh, 2004). Roxburgh (2004) also demonstrated that time pressure mediates the relationship between housework and depression in women. Women who spend more than 10 hours per week on housework report greater time pressure, which, in turn, is associated with higher rates of depression. Thus, time pressure explains a significant portion of the higher levels of depression among working women compared to men. Partner support reduces depression but does not have a direct moderating effect on time pressure (Roxburgh, 2004). Single parents and individuals with caregiving responsibilities are also more frequently affected by time pressure. While a higher income reduces the likelihood of time pressure, it simultaneously increases the likelihood of time poverty (Strazdins et al, 2015). Divorced men report about a 45% higher level of depression compared to married men, which can be partly explained by time pressure (Roxburgh, 2004). Cooperation support (e.g., from colleagues) is also an important moderating factor for the impact of time pressure on depression, but only for men (Roxburgh, 2004). Low-income families are more affected by time pressure because they have fewer opportunities to "buy" time through external help (e.g., childcare). These constraints exacerbate social inequalities (Strazdins et al., 2011). At the same time, another study showed that highly educated and professionally high-ranking individuals are also more frequently affected by time pressure, which could indicate a status symbolism such as "busyness as a badge of honor." (Sullivan, 2017). Time scarcity is worsened by long commutes and poor local infrastructure in low-income neighborhoods. Individuals with lower incomes and extended working hours are more likely to experience poor health due to limited time for rest and self-care (Strazdins et al., 2011). A complementary approach is offered by Zheng et al. (2022), who conducted five separate studies with over 1,000 participants from various cultures. Using both exploratory and confirmatory factor analyses, as well as correlations and regression analyses, they developed the Perceived Time Poverty Scale (PTPS), a validated measurement tool for subjective time poverty, which is considered in this thesis as the conceptual opposite of time affluence. Their findings show that time poverty is not only associated with external factors such as work and family pressures, but also with psychological dispositions (e.g., neuroticism, rumination). They also found clear associations between perceived time poverty and negative outcomes

such as emotional exhaustion and reduced work engagement. Once again, it becomes evident that subjective time perception is a psychologically relevant construct, closely linked to individual resources and social goals. Zheng et al. (2022) further argue that it is not the objective amount of time available, but rather the experience of having free and self-determined time that is decisive for psychological health and motivation.

Additionally, recent research highlights clear differences in stress experiences between urban and rural populations. Cui et al. (2022) analyzed over 65,000 Weibo posts from 329 counties in China, examining language, themes, and psycho-linguistic markers related to stress. Controlling for socioeconomic and gender differences, they found that rural residents express stress in personal and emotional domains, such as relationships, health, and opportunities, while urban residents focus more on work, politics, and economic concerns. These differences persisted even after accounting for GDP and urbanization, suggesting distinct lifestyles and stress sources. Complementary Gallup data indicate that urbanization is also associated with changes in physical, financial, and social well-being, underscoring the importance of contextual factors in understanding daily experiences and time use.

Time Affluence and Well-Being

In an analysis of four empirical studies with over 500 participants, Kasser and Sheldon (2009) show that time affluence is significantly positively associated with subjective well-being. Mindfulness and psychological need satisfaction (autonomy, competence, relatedness) partially mediated the positive effect of time affluence on subjective well-being. The authors also point out that time affluence consistently has a positive effect, regardless of income, personality traits, or time preferences (Kassler & Sheldon, 2009).

The study by Mogilner et al. (2012) examined how prosocial behavior, specifically, giving time, affects the subjective experience of time. In four experimental studies, the authors showed that spending time with or for others leads to a stronger feeling of time affluence, even though no objective additional time is gained. Compared to other conditions such as wasting time, using time for oneself, or receiving free time as a gift, participants who spent their time on others perceived their available time as more abundant and less scarce. This effect could be explained by an increased sense of self-efficacy. Those who gave their time to others experienced themselves as effective and capable, which in turn positively influenced their experience of time. Neither joy, social connectedness, nor perceived meaningfulness predicted this effect as strongly as the feeling of self-efficacy. These findings

are especially relevant in social contexts characterized by high time pressure, as they suggest that giving time instead of saving it can lead to a greater sense of control and inner calm (Mogilner et al., 2012).

Synthesis of Key Findings

The existing literature demonstrates the role of mindfulness as a key psychological and social resource, influencing both intrapersonal processes (such as well-being and emotion regulation) and interpersonal dynamics (such as compassionate goals). Foundational work by Brown and Ryan (2003) established the measurement of trait mindfulness and showed its connection to psychological well-being, linking it to Self-Determination Theory. Building on this, Tirsch (2010) and Condon (2016) theoretically identified mindfulness as the emotional foundation for the development of compassionate goal orientations, an idea that was empirically supported by Stewart et al. (2018). Donald et al. (2019) and Furnell et al. (2024) confirmed that mindfulness is associated with prosocial behavior, particularly when compassion or ethical components are emphasized within the mindfulness intervention. Liu et al. (2024) expanded on these findings by introducing a model in which moral goal orientations mediate the relationship between mindfulness and prosocial behavior. With regard to time affluence, studies such as those by Schaupp and Geiger (2021) and the systematic review by Morin and Grondin (2024) show that mindfulness not only alters subjective time perception but also serves as a resource for an enhanced sense of autonomy and present-moment awareness. Taken together, the literature illustrates that mindfulness is associated with compassionate goals, time affluence, and well-being. At the same time, the authors emphasize the need for further research to investigate the underlying mechanisms more deeply (Schaupp et al., 2021; Morin et al., 2024).

Crocker et al. (2008) identified compassionate goals as a central form of interpersonal goal orientation, associated with positive effects such as greater emotional clarity, connectedness, cooperation, and reduced psychological distress. At the same time, a dyadic effect was observed, as compassionate goals not only enhance one's own well-being but also that of the interaction partner. In contrast, self-image goals, pursued from an egocentric perspective, are linked to anxiety, competitiveness, and lower relationship quality. Canevello et al. (2020) empirically confirmed that compassionate goals are a distinct construct that, independent of other variables (e.g., social desirability) and Niiya et al. (2013) validated the relevance of compassionate goals in non-Western cultures. Canevello and Crocker (2017)

demonstrated that compassionate goals, even in stressful situations, lead to positive affective. This supports the assumption that compassionate goals may play a mediating role in the relationship between mindfulness and time affluence, as the described affective states, such as calm, clarity, and connectedness, closely match the characteristics described in the literature as expressions of time affluence (e.g., Geiger et al., 2021).

Yue and Yang (2022) added that compassionate goals lead to prosocial behavior through emotions such as compassion and solidarity and highlight the context sensitivity of such goals. The study by Niiya and Suyama (2024), empirically demonstrates a link between compassionate goals and subjective time experience. Compassionate goals led to a non-zero-sum perception of time, in which shared time was experienced as mutually enriching, an effect associated with increased well-being and reduced time pressure. This study offers a key conceptual bridge between mindfulness, social motivation, and time perception.

It becomes evident that perceived time constraints are significantly associated with poorer psychological and physical well-being (Strazdins et al., 2011; Roxburgh, 2004). Socioeconomically disadvantaged groups are particularly affected, whereby the interaction of gender, income, social status, and role expectations proves to be decisive for the experience of time (Strazdins et al., 2015; Sullivan, 2017). Women consistently report higher levels of time pressure, which can be traced back to multiple burdens from paid work and caregiving responsibilities (Roxburgh, 2004). Single parents, family caregivers, and low-income households are also disproportionately affected by time poverty, as they often lack the means to organize time relief through external support (Roxburgh, 2004). At the same time, studies show that time constraints are not only determined by objective amounts of time, but are strongly influenced by subjective perception and psychological dispositions such as neuroticism or rumination (Zheng et al., 2022). They further point out that subjective time poverty is closely linked to emotional exhaustion, reduced work motivation, and limited self-determination. Therefore, what is crucial for psychological well-being is not only how much time people objectively have, but how much of it they perceive as freely available and self-determined (Zheng et al., 2022).

Kasser and Sheldon (2009) demonstrate that time affluence is significantly positively associated with subjective well-being. This relationship is partially mediated by mindfulness and psychological need satisfaction, specifically autonomy, competence, and relatedness. The authors emphasize that the positive impact of time affluence persists regardless of income, personality traits, or time preferences. In addition, Mogilner et al. (2012) found that giving

time to others improves the subjective experience of time. Although no actual time is gained, participants who spent time on others perceived themselves as having more of it.

Gaps in Research related to Mindfulness, Compassionate Goals, and Time Affluence

Despite the large number of studies examining mindfulness, compassionate goals, and time affluence, several research gaps emerge from the literature. The following outlines several notable research gaps:

Lack of integration of constructs in a mediation model. While empirical evidence exists for the relationship between mindfulness and compassionate goals (e.g., Stewart et al., 2018), between compassionate goals and time affluence (e.g., Niiya et al., 2024), and between mindfulness and time affluence (e.g., Schaupp et al., 2021), an integrated examination of all three constructs within a coherent mediation model is still missing. The underlying mechanisms in the development of time affluence remain to be captured and investigated.

Compassionate goals as a mediating mechanism have rarely been considered. Although there are theoretical indications that mindfulness may foster the development of compassionate goal orientations (Tirch, 2010; Condon, 2016), compassionate goals have not been examined as a mediator between mindfulness and positive outcomes such as time affluence or well-being. Existing studies primarily focus on direct associations or treat compassionate goals as a predictor of behavior, rather than as a motivational-cognitive bridge between internal states (mindfulness) and externally experienced resources (time affluence).

Lack of experimental and longitudinal design. Most of the existing research is based on cross-sectional data, which limits the ability to infer causal relationships and dynamic processes. While studies such as Schaupp and Geiger (2021) demonstrate the potential of longitudinal designs, there is a lack of studies that analyze compassionate goals as an intervening variable over time.

Insufficient differentiation of causal pathways affecting time experience. Mindfulness interventions have been shown to affect subjective time perception (Morin & Grondin, 2024), but it remains unclear which psychological mechanisms mediate this effect. Compassionate goals could serve as such a mechanism, as demonstrated by Niiya and Suyama (2024), who found that they positively influence subjective time perception. However, this causal chain has not yet been formally tested.

Lack of cross-cultural perspective in mediation models. Although compassionate goals are considered culturally valid (Niiya et al., 2013), there is a lack of models that empirically test this generalizability across cultures. Especially considering global mental health crises (WHO, 2021), a deeper understanding of cross-culturally applicable psychological resources would be highly desirable.

To sum up, this study addresses three important gaps in the current research. First, it brings together mindfulness, compassionate goals, and time affluence in one mediation model. This helps to better understand how these concepts are connected (Gap 1). Second, it looks at compassionate goals as a possible link between mindfulness and time affluence. Instead of only seeing compassionate goals as a result or outcome, this study views them as a key part of the process (Gap 2). Third, it explores whether compassionate goals explain how mindfulness can change the way people experience time. This helps to understand the psychological path behind this effect (Gap 4). By filling these gaps, the study adds to the knowledge in this field and supports the development of better ways to improve time affluence and well-being.

Development of a Mediation Model

Based on the theoretical considerations presented, the current state of research, and the identified research gaps, this thesis builds upon the existing literature. A mediation model is proposed that represents the relationship between mindfulness, compassionate goals, and subjective time experience (time affluence). The central hypothesis is that compassionate goals mediate the relationship between mindfulness and time affluence. The construction of this model is grounded in both theoretical reasoning and empirical evidence.

Why Time Affluence Was Chosen as the Outcome Variable: The aim of this study is to contribute to a better understanding of the factors that can strengthen subjective well-being in an increasingly accelerated world. Although previous research has demonstrated relationships between all three constructs mindfulness, compassionate goals, and time affluence and subjective well-being, time affluence is deliberately chosen as the outcome variable. Several reasons support this choice:

Empirically demonstrated impact on well-being. The studies by Kasser and Sheldon (2009) compellingly show that time affluence is strongly associated with well-being, independent of material resources or personality traits.

Social relevance. In public discourse, a constant lack of time is often complained about (Epstein & Kalleberg, 2004; Hunnicutt, 1998; Perrucci, 2007; Rosa, 2005; Rudd, 2019; Schor, 1992). As defined as having sufficient discretionary time that supports well-being and allows individuals to engage in activities at an unhurried pace (Geiger et al., 2021), the construct Time Affluence theoretically represents the opposite of this experience and addresses the widespread desire for a decelerated, self-determined use of time.

Theoretical connection to Rosa. According to Rosa (2013), acceleration is a central driver of modern alienation and dissatisfaction. Time affluence, by contrast, reflects the qualities that Rosa describes as prerequisites for resonance and life satisfaction.

Empirical evidence for the causal chain. The study by Chen et al. (2017) demonstrates that mindfulness indirectly enhances subjective well-being through the experience of time affluence, while an alternative model, testing mindfulness as a mediator between time affluence and well-being, was also significant but less explanatory. This indirect effect supports choosing time affluence as the dependent variable and mindfulness as the starting point of the mediation chain.

Why Mindfulness Was Chosen as the Independent Variable: Mindfulness is a well-researched and trainable resource that can be strengthened through both formal meditation and everyday practices (Zhang, 2021). In contrast to relatively fixed personality traits, mindfulness offers a practical and effective entry point for preventive and therapeutic interventions. Moreover, its effects on psychosocial processes such as empathic behavior or time perception have been documented in numerous studies (e.g., Brown & Ryan, 2003; Donald et al., 2019).

Why Compassionate Goals Were Included as a Mediator: Recent research, particularly by Niiya and Suyama (2024), clearly demonstrates that compassionate goals are positively associated with a non-zero-sum perception of time. Thus, compassionate goals offer a plausible psychological mechanism through which mindfulness could contribute to a transformed quality of time experience. In addition, several authors (e.g., Schaupp et al., 2021; Morin & Grondin, 2024) emphasize the need for research that systematically investigates such mediating mechanisms.

Mindfulness → Compassionate Goals → Time Affluence is the investigated model of this study. This model not only proposes a mediating role for interpersonal goals (compassionate goals), which have thus far received little attention in research on mindfulness and time perception, but also offers an alternative perspective on time, not as a fixed resource, but as a co-constructed social experience shaped by interpersonal goal

orientations. The proposed mediation model is closely linked to Hartmut Rosa's theory of resonance. It implies that mindful individuals are more likely to develop compassionate goal orientations and to experience social relationships not as a burden on their time, but as a source of mutual enrichment, a core element of resonant world relations, according to Rosa (2013).

At the same time, the model raises societal questions: To what extent does the modern paradigm of individual self-optimization driven by efficiency and performance pressure, contribute to the perception of time as scarce, contested, and zero-sum?

What cultural changes would be necessary to foster an understanding of time grounded in connection, care, and resonance?

Thus, the present thesis aims not only to make an empirical contribution to basic psychological research, but also to offer an impulse for a cultural reevaluation of how time is used in a fragmented and accelerated society.

Research Question and Hypotheses

Building upon the theoretical foundations, previous empirical evidence, and the identified research gaps, this thesis investigates the following central research questions: "Are mindfulness, compassionate goals, and time affluence significantly associated constructs?" and "Do compassionate goals mediate the relationship between mindfulness and time affluence?". This aims to explore how internal dispositions and interpersonal goals influence individuals' subjective time experience. The mediational approach allows for a deeper understanding of the psychological mechanisms through which mindfulness may contribute to a richer, more self-determined sense of time. Based on the theoretical framework and prior empirical evidence, the following hypotheses are derived:

H1: Mindfulness is positively associated with time affluence. Rationale: Individuals with higher mindfulness levels are more likely to experience a greater sense of control, presence, and sovereignty in their use of time (Schaupp et al., 2021; Morin et al., 2024).

H2: Mindfulness is positively associated with compassionate goals. Rationale: Mindfulness fosters awareness, empathy, and openness, which support the development of prosocial, compassionate goal orientations (Stewart et al., 2018; Tirsch, 2010).

H3: Compassionate goals are positively associated with time affluence.

Rationale: Individuals who pursue compassionate goals are more likely to perceive social

time as enriching rather than depleting, fostering a nonzero-sum time perception (Niiya & Suyama, 2024).

H4: The relationship between mindfulness and time affluence is mediated by compassionate goals. Rationale: Mindfulness promotes compassionate goals, which in turn lead to an enhanced sense of time affluence. This indirect pathway reflects the proposed psychological mechanism of the model.

H5: Mindfulness, Compassionate Goals and Time Affluence are positively associated with positive affect and negative associated with negative affect. Rationale: Both mindfulness and time affluence contribute to the fulfillment of the basic psychological needs (autonomy, competence, and connectedness) as outlined in Self-Determination Theory (Deci & Ryan, 2008; Kassler & Sheldon, 2008). The satisfaction of these needs, in turn, leads to increased positive affect, and reduced negative affect.

To provide a more comprehensive understanding and to gain new insights into these relationships, the explanatory analysis of the present study investigates potential factors that may influence the variables under consideration. Previous research has shown that women, in particular, experience greater time constraints due to the “double burden” of combining multiple responsibilities for example care and giving paid work (Strazdins et al, 2015; Roxburgh, 2004). Furthermore, studies suggest that mindfulness practices can improve individuals’ subjective experience of time (Morin & Grodin, 2024; Schaupp & Geiger, 2021). Trends in adolescents indicate an increase in screen time accompanied by a decrease in social interactions (Twenge et al., 2020; Vilhelmson et al., 2018). Moreover, findings suggest that urban and rural populations experience and express stress differently, indicating that contextual factors such as living environment may influence daily time use and related behaviors (Cui et al., 2022). Based on this, the variables care and social activities (caring for children, caring for elderly individuals or others in need of assistance, spending time with family and friends), leisure and relaxation (spending time in nature, leisure-related screen use, engaging in relaxation techniques), work and study (studying, paid work), health and well-being (sleep, physical exercise) are considered in the explanatory analysis.

Methodology

To examine the hypothesis, an online questionnaire survey was conducted as an associative cross-sectional study, based on theoretical foundations and empirical research. This approach allows for a systematic investigation of the proposed relationships.

Participants and Procedure

The sample included university students from any field of study and with any professional or scientific background. Originally, the study was conducted using an English-language questionnaire to reach an international sample. However, after data collection, it became apparent that almost all participants were German. Therefore, only the German participants were included in the analysis to ensure clearer interpretation, reduce cultural variability, and increase internal validity. Consequently, to be eligible for participation, individuals had to be at least 18 years old and of German nationality. Anyone who did not meet these criteria was excluded from the final dataset.

The group included 194 participants between the ages of 18 and 42 years ($M = 26.6$, $SD = 5.27$, $Mdn = 25$). Gender distribution is as follows: 86 (50.6%) male, 80 (47.1%) female, and 4 (2.4%) other. 93% of participants were living in Germany, 3% in Austria, 2.5% in Portugal, and the remainder in other countries. Regarding residential setting, 21.4% lived in a rural area, 35.1% in a suburban area, and 43.5% in an urban area. In terms of study program year, 25.9% were in their first year, 54.4% in their second year, 10% in their third year, and 8% in their fourth year or higher. For highest level of education, 36.7% reported a high school diploma, 8.9% a job training diploma, 37.9% a bachelor's degree, and 13.6% a master's degree or advanced job training; the remainder reported middle school, non-formal education, or a PhD. At the time of the study, 46.6% were pursuing a bachelor's degree, 42.3% a master's degree, 6.7% a PhD, and 4.3% another type of degree. Fields of study included social sciences (18.5%), natural sciences (16.7%), business (13%), and engineering and technology (12%). Among these students, 74.6% were not employed, 7.7% were working part-time, 7.7% full-time, and 6.5% were self-employed.

For this online study, a snowball sampling method was used, where initial participants were asked to share the survey through their own social media channels. This helped expand the reach and allowing more people to participate. Although the snowball sampling method was used, the initial participants were still recruited from a personal network. While the distribution of the survey through multiple individuals helped to reduce potential sampling bias, it must be acknowledged that social and cultural biases may still be present.

The survey was shared through the initial participants private social media accounts on the platforms LinkedIn, Instagram, and WhatsApp. Self-selection by participants played a central role in this study. The exact number of participants who chose not to participate on

their own could not be determined, as recruitment was anonymous and no specific tracking was used. The study was designed for university students in Germany. Eligible participants included individuals who were over 18 years old, enrolled at a university at the time of the survey and of German nationality. All responses from individuals who did not meet these criteria were excluded from the final sample.

Data collection took place entirely online using the Qualtrics platform. The survey was available from July 27, 2025, to August 7, 2025. The survey was designed as a one-time data collection. The survey began with an informed consent form (see Appendix A), which outlined the purpose of the study, participant rights and voluntary participation. Upon consent, participants proceeded through several questionnaire blocks that assessed mindfulness, compassionate goals, time affluence, positive and negative affect, demographic characteristics, and time use data (see Appendix B). The total estimated time to complete the survey was approximately 10 minutes.

To determine the intended sample size, a power analysis was conducted using G*Power. The bivariate correlation model was applied. Based on an *a priori* test with a correlation coefficient of $r=0.3$, a significance level of $\alpha=0.05$ and a power of 0.95, the required sample size was calculated to be $n=138$. With $n=194$ included in the final sample the intended sample size was reached. Although the literature indicates a specific direction for the association between the variables, a two-tailed test was chosen for the alpha error due to the novelty of this research area involving compassionate goals. Furthermore, a medium effect size was assumed in accordance with Cohen's (1992) guidelines.

Measures and Instruments

To assess the main variables of interest, three validated instruments were used. The three instruments were the Mindful Attention Awareness Scale, the Compassionate Goals Scale and the Time Affluence Scale. In addition, demographic questions and daily time use data were collected to examine the characteristics of participants and to examine how they allocate their time across various activities.

Mindfulness was measured using the 15-item version of the Mindful Attention Awareness Scale (MAAS; Brown & Ryan, 2003), which is widely recognized as a standard tool for assessing dispositional mindfulness. The MAAS assesses individuals' dispositional awareness and attention to present experiences, capturing everyday lapses in attention and awareness and reflecting the extent to which individuals experience mindlessness in daily

life. Respondents indicated how frequently they experience various states of mindfulness on a 6-point Likert scale ranging from "almost never" to "almost always." One example item is: "I find it difficult to stay focused on what's happening in the present." In its original validation study, the MAAS showed excellent psychometric qualities, including high internal consistency (Cronbach's $\alpha = .87$) and test-retest reliability ($r = .81, p < .01$). Factor analyses supported a unidimensional structure, and the scale demonstrated significant positive correlations with measures of self-awareness and emotional well-being, providing evidence of construct validity. In a psychometric evaluation involving 711 university students, MacKillop and Anderson (2007) found that the MAAS demonstrated excellent internal consistency (Cronbach's $\alpha = .89$) and confirmed a unidimensional factor structure through confirmatory factor analysis (CFI = .914, RMSEA = .071). The scale also showed consistent reliability across gender groups, with $\alpha = .89$ for women and $\alpha = .87$ for men (MacKillop & Anderson, 2007).

Compassionate and Self-Image Goals were assessed using the 13-item Compassionate and Self-Image Goals (CSIGS) scale (7 items for compassionate goals, 6 items for self-image goals) developed by Crocker and Canevello (2008). Participants were asked how much they wanted or tried to pursue supportive, constructive, and non-selfish goals in their friendships during the past week, responding on a 5-point Likert scale from "none at all" to "always." All items began with the phrase, "In the past week, in the area of friendships, how much did you want to or try to...". An example item is: "*Be supportive of others.*" To examine the internal structure of the scale, Crocker and Canevello (2008) conducted exploratory factor analyses using principal factor extraction with oblimin rotation, allowing for correlated factors. Results indicated a clear two-factor solution corresponding to compassionate and self-image goals. Item loadings were consistently strong ($\geq .66$ for compassionate goals and $\geq .52$ for self-image goals), and cross-loadings were minimal ($< .20$), with only one exception. The intended factors were clearly distinguishable, with items loading at least twice as strongly on their respective factor compared to the other. Both scales demonstrated high internal consistency across all ten weeks of the original study (self-image goals: $\alpha = .77-.89, M = .83$; compassionate goals: $\alpha = .83-.93, M = .90$). Construct validity was supported by theoretically consistent correlations: Compassionate goals were positively associated with spirituality, self-compassion, extraversion, and agreeableness, and negatively associated with psychological entitlement and avoidant attachment. In contrast, self-image goals showed positive correlations with social anxiety, public self-consciousness, and attachment insecurity, and negative correlations with self-compassion. These findings support the conclusion that the

scales accurately differentiate between the intended types of social goal orientations (Crocker & Canevello, 2008). Wayment et al. (2016) found that the Compassionate Goals Scale demonstrated good internal consistency (Cronbach's $\alpha = .72$ in Sample 1 and $.80$ in Sample 2) and showed consistent reliability across gender groups. No factor analysis was reported in this study. The study was conducted with two samples of first-year college students from a mid-sized university in the southwestern United States (Sample 1: $N = 372$, 79% female, M age = 18.00; Sample 2: $N = 239$, 69% female, M age = 18.49).

Time Affluence was measured using 8 items adapted from the Material and Time Affluence Scale (MATAS) (16 Items, the 8 additional items measuring Material Wealth) developed by Kasser and Sheldon (2009). These items assess the extent to which individuals feel they have sufficient time for important and meaningful activities (e.g., "My life has been too rushed." [reverse coded]). Responses were recorded on a 5-point Likert scale ranging from 1 = "strongly disagree" to 5 = "strongly agree". Kasser and Sheldon (2009) demonstrated that time affluence was positively associated with subjective well-being, even after controlling for material wealth, and negatively correlated with the number of hours worked. Across three studies, the time affluence subscale showed high internal consistency (Cronbach's $\alpha = .89$ to $.90$). A factor analysis consistently revealed a two-factor structure, distinguishing between time affluence and material affluence, thereby supporting the construct validity of the scale. The time affluence scale (MATAS; Kasser & Sheldon, 2009) showed high internal consistency in the sample of Schaupp and Geiger (2021), with $\omega = .90$ at both pre- and post-measurement.

Positive and Negative Affect were assessed using the 20-item Positive and Negative Affect Schedule (PANAS; Watson et al., 1988), a widely used instrument designed to measure two primary dimensions of mood: Positive Affect (PA) and Negative Affect (NA). The PANAS consists of two 10-item subscales, each assessing the extent to which individuals have experienced specific affective states within a given time frame. Respondents rated each item (e.g., "Enthusiastic" for PA, "Scared" for NA) on a 5-point Likert scale ranging from "very slightly or not at all" to "extremely," indicating how they had felt during the past week. The PANAS demonstrated strong psychometric properties in its original validation, including high internal consistency (Cronbach's α ranging from $.86$ to $.90$ for PA and from $.84$ to $.87$ for NA) and acceptable test-retest reliability over an eight-week period ($r = .68$ for PA, $r = .71$ for NA). Factor analyses confirmed a clear two-factor structure with minimal cross-loadings, supporting its factorial validity. Moreover, the PA and NA scales were largely uncorrelated, reinforcing their independence as separate affective dimensions. The PANAS

has shown robust construct validity, with PA correlating positively with social activity and diurnal variation, and NA being strongly associated with perceived stress and general psychological distress. Crawford and Henry (2004) administered the PANAS to a non-clinical sample broadly representative of the general adult UK population ($N = 1,003$). They found that the PANAS demonstrated a Cronbach's α of .89 (95% CI = .88-.90) for the Positive Affect (PA) scale and .85 (95% CI = .84-.87) for the Negative Affect (NA) scale (Crawford et al., 2004).

Daily Time-use were accessed using a standardized table in which participants indicated how many hours per week or per day they spent on specific activities. The recorded activities included: care and social activities (caring for children, caring for elderly individuals or others in need of assistance, spending time with family and friends), Leisure and Relaxation (spending time in nature, leisure-related screen use, engaging in relaxation techniques), work and study (studying, paid work), health and well-being (Sleep, physical exercise). Sleep and screen time were assessed daily, as these are typically daily activities and are therefore more intuitively reported on a daily scale. All other activities were assessed on a weekly basis. The scale ranged from 0 to a maximum of 168 hours, corresponding to the total number of hours in a week. For daily reporting, the maximum was 24 hours. At the end of the table, participants were also provided with an open-ended text field to answer the following question: "Besides the listed activities above, is there something else that you perceive as very time-consuming?".

Demographic data provided information on participants' demographic background, including age, gender, nationality, education level, marital and housing status, and employment status. Additionally, data on their field of study, university course, and year of study were also collected.

Data Collection and Data Diagnostic

Data were collected using an anonymous online questionnaire administered via the Qualtrics platform. The survey consisted entirely of self-report measures and was completed by participants at their own pace. All participants received the same set of questions in the same order. All materials were presented in English, and the structure of the survey was designed to separate different constructs into distinct sections to reduce response bias. To evaluate clarity and comprehension, the survey underwent a pilot test with 5 individuals who matched the target demographic but were not included in the final sample. Feedback from

this pretest informed minor adjustments in item wording and layout to optimize clarity and usability.

The questionnaire included four standardized and validated instruments. All instruments were administered in their original English versions.

This study used a cross-sectional correlational design. Participants were not exposed to any experimental manipulation nor assigned to specific conditions. Instead, data were collected via a single online questionnaire assessing naturally occurring individual differences in the variables and measures of interest. All variables were measured at the same point of time in the same online survey. The study was conducted in participants' natural environment, using a self-administered online survey.

After data collection, all datasets underwent a thorough inspection to ensure suitability for analysis. First, the data were screened for completeness, and cases with excessive missing responses were excluded from further analyses.

Thus, out of the original 194 collected participants, 17 were excluded due to more than 20% missing values. This threshold was chosen based on common recommendations in methodological literature (e.g., Tabachnick & Fidell, 2019), which suggest that datasets with substantial missingness can bias results and reduce statistical power. No imputation methods were applied for variables with small amounts of missing data; such cases were retained to preserve statistical power, as the level of missingness was negligible (<5% per variable) (Tabachnick & Fidell, 2019).

The treatment of extreme values is a debated topic in the methodological literature. In the present study case-wise deletion was chosen to preserve the representativeness of the sample, avoid artificial narrowing of the distribution, and maintain the assumptions for multivariate analyses, even if this slightly reduces variance at the extremes.

Prior to hypothesis testing, the variables Mindfulness, Time Affluence, Compassionate Goals, Self-Image Goals, Positive Affect, and Negative Affect were inspected for univariate outliers. All data points with a Z-value exceeding ± 3.29 were excluded from the analysis, because these are statistically extreme cases that lie far outside the expected range of the normal distribution, ensuring that the remaining data more accurately reflect the true population characteristics. This resulted in the exclusion of five cases from the dataset. In addition to univariate outliers, the data were checked for multivariate outliers. The Mahalanobis distance was calculated to measure how much each case deviates from the mean across all relevant variables (Mindfulness, Compassionate Goals, Time Affluence). A critical value of $\chi^2 = 13.82$ ($df = 3$) was used as the threshold at the $\alpha = 0.001$ level. Three cases

exceeded this value, indicating that they are multivariate outliers and could potentially distort the results. Therefore, these three cases were excluded from the final dataset.

In contrast to the psychological constructs, the time values were checked for implausibility (e.g., sleeping time = 24 hours, total hours calculated exceeding the hours in a week, or 70 hours spent on relaxation techniques per week). Since these data were not plausible, three cases were removed from the analysis. This resulted in a final dataset of $n = 166$.

The skewness of all study variables was examined to assess asymmetry in their distributions. Skewness values ranged from -0.968 to 0.547: Mindfulness (-0.968), Compassionate Goals (0.547), Self-Image Goals (0.395), Time Affluence (0.059), Positive Affect (0.145), and Negative Affect (-0.154). Kurtosis values ranged from -0.401 to 0.879, indicating distributions that are mostly normal or slightly peaked: Mindfulness (0.879), Compassionate Goals (-0.108), Self-Image Goals (0.344), Time Affluence (-0.401), Positive Affect (0.011), and Negative Affect (0.218). Although Mindfulness exhibited the highest absolute skewness (-0.968), this value is still within the commonly accepted threshold. Overall, skewness and kurtosis values were within acceptable ranges, indicating no severe deviation from symmetry, according to common guidelines (Kline, 2023; Tabachnick & Fidell, 2019).

Psychometrics

Internal consistency of the multi-item scales was assessed using Cronbach's α , which provides an estimate of the reliability of the measures. Following common guidelines (Boateng et al., 2019), values of $\alpha \geq .70$ are generally considered acceptable. In the present study, the observed reliabilities were as follows: Mindfulness ($\alpha = .660$), Time Affluence ($\alpha = .641$), Compassionate Goals ($\alpha = .611$), and Negative Affect ($\alpha = .612$) did not reach the conventional .70 threshold but can still be considered acceptable as they exceed .60. In contrast, Positive Affect ($\alpha = .486$) and Self-Image Goals ($\alpha = .376$) clearly fell below the acceptable range. Self-Image Goals were removed from the study. This decision was made for two reasons. First, removing individual items would not have improved the reliability of the Self-Image Goals scale, which had a Cronbach's Alpha. Second, these items were not central to the hypotheses under investigation and were considered less relevant for the present study. Positive Affect ($\alpha = .486$) also is noticeable low, but it was retained due to its theoretical relevance, but the interpretation of its effects is carried out with particular caution,

taking into account the potentially increased measurement error. An inspection of the item-total statistics revealed that the item *alert* showed a negative corrected item-total correlation ($r = -.048$). Furthermore, Cronbach's Alpha increased from .486 to .541 when this item was excluded. Inspection of the remaining items revealed that removing any additional item would not further improve internal consistency. Therefore, the final scale was used without further modifications. From a content-related perspective, it is likely that the poor fit of the item "alert" is due to linguistic and cultural differences. While *alert* in the original English version is positively connoted (in the sense of "awake, attentive"), its similarity to the German word "*alarmiert*" may lead native German speakers to interpret it negatively (as "alarmed, distressed, in danger"). This semantic difference may explain why the item did not align with the other positively connoted items of the scale. Based on these statistical and conceptual considerations, the item *alert* was excluded from further analyses.

All scales with values falling below .70 demonstrate restricted reliability, which requires cautious interpretation of the results and suggests that the findings might have been more solid with a stronger sample.

Analytical Strategy

The analysis of the primary hypotheses is carried out in several steps, considering the distribution of the variables. Inspection of skewness values indicated that all study variables fell within the commonly accepted range for approximate normality (absolute skewness < 1). Therefore, Pearson's correlation is used as the primary method to examine the relationships between variables, as it assumes normally distributed data. Both Pearson and Spearman correlations were calculated for all variables to ensure robust results. Pearson correlations were used to assess linear relationships assuming normality, while Spearman correlations were included as a non-parametric alternative, which is more appropriate when the assumptions for parametric analysis may not be fully met or when distributions are skewed. In addition, linear regression analyses are performed to model directed effects and control for other variables.

H1: The positive association between mindfulness and time affluence is first tested with a Pearson correlation. Then, a linear regression is run with mindfulness as a predictor of time affluence to estimate the direct effect.

H2: Similarly, the relationship between mindfulness and compassionate goals is tested using Pearson correlation and then linear regression, where mindfulness predicts compassionate goals. This regression represents the “a-path” in the mediation model.

H3: To test the effect of compassionate goals on time affluence, we first calculate a Pearson correlation. Then, a enter multiple linear regression is run with time affluence as the outcome and both compassionate goals and mindfulness as predictors. This models the “b-path” of the mediation while controlling for mindfulness.

H4: The mediation of compassionate goals between mindfulness and time affluence is tested using a mediation analysis with Andrew Hayes’ PROCESS macro (Model 4). We use bootstrapping with 5000 samples and a 95% bias-corrected confidence interval, which does not require normality assumptions and is robust. All paths (a, b, c') and the indirect effect are estimated simultaneously. Before interpreting the results, we will check the direct effect (c'-path) for multicollinearity, as high correlations between mindfulness and compassionate goals could affect the estimates. We will also determine whether the mediation is full or partial by examining the significance of the direct effect when the mediator is included.

Secondary Hypothesis: The relationships between mindfulness, compassionate goals, and time affluence with positive and negative affect are tested using multiple linear regression. Two separate models are calculated, one for positive affect and one for negative affect. Bootstrapping can be used optionally to check the stability of the effects.

In addition, exploratory analyses will be conducted to identify factors associated with low or high Time Affluence, providing a broader context for understanding how daily behaviors and environmental factors may influence individuals’ perceptions of time availability. Demographic variables and detailed daily time use data will be examined together in multiple regression models to assess their combined effects and to control for possible confounding variables. This approach reduces the risk of inflated Type I error rates from multiple individual tests and allows for a more comprehensive understanding of how these variables jointly influence perceptions of Time Affluence. The demographic variables include gender, marital status, education level, employment status, living area and study-related factors. Daily time use variables include care work, physical activity, time in nature, relaxation, social time, screen time, and sleep. Where relevant, supplementary group comparisons will be performed. For example, if Time Affluence is normally distributed within the gender groups, independent t-tests will be used. For variables with more than two groups and a normal distribution of Time Affluence within each group (e.g., marital status, highest level of education, current level of study, living area, employment status), one-way

ANOVAs will be applied. Where normality assumptions are violated (e.g., for year of program and field of study), Kruskal-Wallis tests will be used instead. Associations between continuous predictors and Time Affluence may also be explored descriptively with Spearman correlations, but the primary focus will be on the multiple regression analyses as the main method for exploratory investigation.

All analyses will be conducted using IBM SPSS Statistics (Version 172). Effect sizes were reported for all relevant tests to provide information about the strength of relationships. Specifically, Pearson's r was used for correlations (where applicable), standardized regression coefficients (β) for regression analyses, and indirect effect sizes for mediation models. Alongside these effect sizes, 95% confidence intervals (CIs) were calculated to indicate the precision of the estimates.

Statistical significance was set at $p < .05$ (two-tailed) for all primary hypothesis tests. For exploratory analyses involving multiple comparisons, significance levels were adjusted using methods such as the Bonferroni or Holm correction to reduce the risk of Type I errors. Effect sizes were reported and interpreted according to Cohen's (1988) guidelines, with values of $r = .10$ considered small, $r = .30$ medium, and $r = .50$ large; standardized regression coefficients (β) are interpreted analogously to r . This approach ensures that findings are not only statistically significant but also meaningful and reliable.

Results

The dataset contained some missing values across both demographic and daily time use variables. For the demographic variables, the proportion of missing data was generally low with $> 6\%$. For the daily time use variables, the amount of missing data was slightly higher for some items: care work for children and care work for elders were both missing in 9% of cases, relaxation techniques in 11.4%, time with family and friends in 5.4%, screen time in 7.8%, and sleep in 6% of cases. For the scales used in this study the proportion of missing data per item were below 5% (for more detail see Appendix C). Overall, the proportion of missing data was relatively low to moderate. These missing values were considered in subsequent analyses. An inspection of the missing data patterns did not reveal any systematic irregularities, suggesting that the missing values are likely missing completely at random (MCAR).

Primary Hypothesis

H1: The correlation between Mindfulness and Time Affluence was very weak (Pearson $r = 0.097$, $p = 0.214$; Spearman $\rho = 0.13$, $p = 0.095$) and did not reach statistical significance. However, as some authors consider p -values of .05 and .10 to be marginally significant, this should be noted (Field, 2024). This indicates that, in this sample, there is no evidence of a meaningful association between the two variables. A linear regression was conducted to examine whether Mindfulness predicts Time Affluence. The model was not statistically significant, explaining only 0.3% of the variance in Time Affluence ($R^2 = 0.003$). Mindfulness did not significantly predict Time Affluence ($B = 0.074$, $\beta = 0.097$, $t = 1.25$, $p = 0.214$), indicating that higher mindfulness scores were not associated with greater perceptions of time affluence in this sample.

H2: The correlation between Mindfulness and Compassionate Goals was very weak and negative (Pearson $r = -0.028$, $p = 0.725$; Spearman $\rho = -0.37$, $p = 0.636$) and not statistically significant, suggesting that no clear association exists between these variables in this sample. Linear regression analysis, with Mindfulness as a predictor of Compassionate Goals, confirmed this result. The model explained very little variance in Compassionate Goals ($R^2 = 0.001$). The unstandardized regression coefficient was $B = -0.025$ (Beta = -0.028), $t = -0.353$, $p = 0.725$, indicating that Mindfulness did not significantly predict Compassionate Goals in this sample.

H3: The correlation between Compassionate Goals and Time Affluence was positive and moderate (Pearson $r = 0.318$, $p < 0.001$; Spearman $\rho = 0.327$, $p < 0.001$), indicating a statistically significant association in this sample. Higher levels of Compassionate Goals were associated with higher Time Affluence. A multiple regression was conducted to examine the effect of Compassionate Goals on Time Affluence while controlling for Mindfulness. The model explained 11.9% of the variance in Time Affluence ($R^2 = 0.119$, VIFs ≤ 1.001). Compassionate Goals significantly predicted Time Affluence ($B = 0.283$, $\beta = 0.063$, $t = 4.498$, $p < 0.001$), whereas Mindfulness did not reach significance ($B = 0.080$, $\beta = 0.106$, $t = 1.442$, $p = 0.151$).

H4: A mediation analysis using Hayes' PROCESS macro (Model 4) with 5000 bootstrap samples examined whether compassionate goals mediate the effect of mindfulness on time affluence. The analysis revealed that mindfulness did not significantly predict compassionate goals (a-path: $B = -0.0245$, $SE = 0.0695$, $t = -0.353$, $p = 0.725$), although compassionate goals were a significant predictor of time affluence when controlling for

mindfulness (b-path: $B = 0.2830$, $SE = 0.0629$, $t = 4.498$, $p < 0.001$). The direct effect of mindfulness on time affluence (c'-path) was not significant ($B = 0.0805$, $SE = 0.0558$, $t = 1.442$, $p = 0.151$), nor was the total effect (c-path) without the mediator included ($B = 0.0735$, $SE = 0.0590$, $t = 1.247$, $p = 0.214$). The indirect effect through compassionate goals was also non-significant (Effect = -0.0069 , BootSE = 0.0195 , 95% CI [-0.0486 , 0.0284]). Collinearity diagnostics indicated no issues, with Tolerance values of 0.999 and VIFs of 1.001 for both independent variables, suggesting negligible multicollinearity. Overall, these results indicate no evidence for mediation, as neither the indirect effect nor the a-path was significant. Moreover, the direct effect of mindfulness on time affluence (c'-path) was non-significant, suggesting that there is no partial mediation in this sample.

To test the robustness of the previous findings, a multiple linear regression, using the Enter, method was conducted with Compassionate Goals predicting Time Affluence, while controlling for several socio-demographic and lifestyle variables (Gender, Marital Status, Level of Education, Living Area, Level of Study, Study Program, Care work for Children and Elders, Studying, Time Spent in Nature, Physical Exercise, Relaxation Techniques, Time with Family & Friends, Hours Working in a Paid Job, Screen time, and Sleep). The overall model was not statistically significant ($F(18, 111) = 1.344$, $p = 0.175$), explaining 17.9% of the variance in Time Affluence ($R^2 = 0.179$; Adjusted $R^2 = 0.046$), with a standard error of the estimate of 0.536 . This indicates that, collectively, the control variables contributed only minimally to the prediction of Time Affluence. Looking at individual predictors: Compassionate Goals was a significant positive predictor of Time Affluence ($B = 0.235$, $\beta = 0.255$, $t = 2.627$, $p = 0.010$), suggesting that higher compassionate goals are associated with greater perceptions of time affluence. Living Area also reached significance ($B = -0.153$, $\beta = -0.210$, $t = -2.262$, $p = 0.026$), with the negative direction depending on the coding of the variable (Rural 1, Suburban 2, Urban 3). All other variables, including Gender, Marital Status, Level of Education, Level of Study, Study Program, Care work, Studying, Time Spent in Nature, Physical Exercise, Relaxation Techniques, Time with Family & Friends, Hours Working in a Paid Job, Screen time, and Sleep, were not significant ($p > 0.05$). Overall, these results indicate that the effect of Compassionate Goals on Time Affluence remains robust even when controlling for demographic and lifestyle factors, whereas most control variables do not significantly contribute to the prediction of Time Affluence.

Secondary Hypothesis

A multiple linear regression was conducted to examine the associations of mindfulness, compassionate goals, and time affluence with positive affect. The overall model was statistically significant, explaining 21.6% of the variance in positive affect, $R^2 = 0.216$, Adjusted $R^2 = 0.201$, $F(3, 161) = 14.776$, $p < 0.001$.

Examining the individual predictors, compassionate goals significantly predicted positive affect in the regression model ($B = 0.344$, $\beta = 0.438$, $t = 5.918$, $p < 0.001$) and also showed a strong positive correlation in the raw data, $r(166) = 0.455$, $p < 0.001$, indicating that higher levels of compassionate goals were associated with higher positive affect.

In contrast, mindfulness did not significantly predict positive affect in the regression model ($B = 0.055$, $\beta = 0.079$, $t = 1.130$, $p = 0.260$) and showed a negligible, non-significant correlation in the raw data, $r(165) = -0.028$, $p = 0.725$, indicating that mindfulness was not meaningfully associated with positive affect.

Time affluence did not significantly predict positive affect in the regression model ($B = 0.050$, $\beta = 0.054$, $t = 0.731$, $p = 0.466$), but showed a moderate, positive correlation in the raw data, $r(166) = 0.318$, $p < 0.001$, suggesting that higher time affluence was associated with higher positive affect when examined without controlling for other variables.

Overall, these results indicate that among the three predictors, only compassionate goals showed a meaningful, unique association with positive affect, whereas mindfulness and time affluence did not contribute significantly when considered simultaneously in the regression model.

A multiple linear regression was conducted to examine the associations of mindfulness, compassionate goals, and time affluence with negative affect. The overall model was not statistically significant, explaining only 0.4% of the variance in negative affect, $R^2 = 0.004$, Adjusted $R^2 = -0.015$, $F(3, 161) = 0.211$, $p = 0.888$. Examining the individual predictors, compassionate goals did not significantly predict negative affect in the regression model ($B = -0.048$, $\beta = -0.058$, $t = -0.691$, $p = 0.491$) and showed a negligible, non-significant correlation in the raw data, $r(166) = 0.025$, $p = 0.746$, indicating that compassionate goals were not meaningfully associated with negative affect. Mindfulness did not significantly predict negative affect in the regression model ($B = 0.018$, $\beta = 0.024$, $t = 0.298$, $p = 0.766$) and showed a small, non-significant correlation in the raw data, $r(165) = 0.104$, $p = 0.185$, suggesting that mindfulness was not associated with negative affect. Time affluence did not significantly predict negative affect in the regression model ($B = 0.032$, $\beta =$

0.032, $t = 0.384$, $p = 0.701$) and showed a negligible, non-significant correlation in the raw data, $r(166) = 0.030$, $p = 0.697$, indicating that time affluence was not associated with negative affect.

Overall, these results indicate that none of the three predictors mindfulness, compassionate goals, or time affluence, showed a meaningful association with negative affect, either in the regression model or in the raw correlations.

Nevertheless, it should be noted that all scales with values below .70 indicate limited reliability, which implies that the corresponding results need to be interpreted with caution and should be considered as findings that might have benefited from a more robust sample.

Explanatory Analysis

A multiple regression was conducted to examine whether demographic and time-use variables predict Time Affluence. The overall model was not statistically significant and explained only a small portion of the variance in Time Affluence ($R^2 = 0.131$, adjusted $R^2 = -0.019$, $SE = 0.554$), $F(19, 110) = 0.874$, $p = 0.616$. Among the predictors, only Living Area significantly predicted Time Affluence ($B = -0.155$, $\beta = -0.213$, $t = -2.223$, $p = 0.028$), indicating that individuals from certain living areas reported lower perceptions of Time Affluence. All other variables, including gender, marital status, education level, employment status, study-related factors, care work, physical activity, time in nature, relaxation, social time, screen time, and sleep, were not significant predictors ($p > 0.05$).

These findings suggest that, in this sample, most demographic and time-use factors are not meaningfully associated with Time Affluence, except for Living Area.

Descriptive statistics for Time Affluence by living area showed that mean scores were highest in the Rural group ($M = 3.189$, $SD = 0.572$, $N = 35$), followed by Suburban ($M = 2.949$, $SD = 0.548$, $N = 56$) and Urban participants ($M = 2.847$, $SD = 0.499$, $N = 72$). Levene's test indicated that the assumption of homogeneity of variances was met, $F(2, 160) = 0.521$, $p = 0.595$. A one-way ANOVA revealed a statistically significant effect of living area on Time Affluence, $F(2, 160) = 4.871$, $p = 0.009$, suggesting that perceptions of Time Affluence differed between the three groups. Post-hoc comparisons using the Tukey test showed that participants living in Rural areas reported significantly higher Time Affluence than those living in Urban areas (Mean Difference = 0.342, $SE = 0.110$, $p = 0.006$, 95% CI [0.083, 0.602]). Differences between Rural and Suburban participants (Mean Difference = 0.240, $SE = 0.115$, $p = 0.094$, 95% CI [-0.031, 0.512]) and between Urban and Suburban

participants (Mean Difference = -0.102, SE = 0.095, $p = 0.531$, 95% CI [-0.327, 0.123]) were not statistically significant. The full output of the analysis is available online at Figshare and can be accessed via the following DOI: 10.6084/m9.figshare.30220108

Discussion

This study examined the association between mindfulness, compassionate goals, and time affluence, as well as the possible mediation effect of compassionate goals in a student sample in Germany. The results show, that in this sample, mindfulness was not significantly related to either time affluence or compassionate goals. In contrast, there was a moderate positive relationship between compassionate goals and time affluence, as well as compassionate goals and positive affect. Therefore, the main research hypothesis of this thesis, whether compassionate goals mediate the relationship between mindfulness and time affluence, could not be confirmed.

Still, these findings are important. They suggest that mindfulness alone does not directly influence the perception of time affluence, while compassionate goals play an independent role. This highlights the dimension of interpersonal goals and the intentions lying behind behavior. In this context compassion representing a primary motivation, is a relevant factor influencing subjective experiences of time. Whether and how mindfulness might contribute to the development of compassionate goals remains unclear and cannot be concluded from this sample. Theoretically, the study shows that the assumed direct effect of mindfulness on time affluence and on compassionate goals is not universally valid and may depend on context, sample, or methodological factors. Practically, the findings suggest that interventions promoting compassionate goals may improve people's perception of time, regardless of their mindfulness. Such interventions could help university students in Germany increase their time affluence and in turn, contribute to higher overall well-being.

Assessment of the Hypotheses

All scales with values falling below .70 demonstrate restricted reliability, which requires cautious interpretation of the result. The primary, secondary and explanatory hypotheses can be confirmed or refuted as described in the following part. H1 proposed a positive relationship between mindfulness and time affluence. However, the analyses showed

that the association in this sample was very weak and not statistically significant. Therefore, H1 could not be confirmed. H2 assumed a positive relationship between mindfulness and compassionate goals. Again, the data showed no significant relationship. H2 is thus not supported. H3 proposed a positive relationship between compassionate goals and time affluence. This hypothesis was confirmed. The correlation was moderately positive and significant. In a multiple regression analysis controlling for mindfulness, compassionate goals remained a significant predictor of time affluence. H4 postulated a mediating effect of compassionate goals between mindfulness and time affluence. However, the mediation analysis showed that neither the a-path (Mindfulness → Compassionate Goals) nor the indirect effect was significant. The direct effect of mindfulness on time affluence was also not significant. Thus, the mediation hypothesis could not be confirmed.

The examination of the relationships between the main variables and positive affect revealed that only compassionate goals showed a significant predictive effect on positive affect. Neither mindfulness nor time affluence contributed significantly to explaining positive affect. Regarding negative affect, no significant associations were found with any of the variables studied.

Additional analyses on the influence of demographic and time-use data on time affluence showed that most variables had no significant effect. Only the area of living showed an influence. Participants from rural areas reported significantly higher time affluence compared to participants from urban areas. This finding highlights that environmental factor, such as living area, can shape the subjective perception of time resources more strongly than individual factors like mindfulness. The non-significant results regarding mindfulness could be due to methodological aspects, measurement aspects, sample size, or specific characteristics of the student population. The exploratory analyses also suggest that uncontrolled variables, such as living environment or lifestyle, potentially exert important influences on time affluence that should be more thoroughly considered in future studies.

Comparison to Previous Research

The findings of this study show both overlaps with and departures from previous research. The first hypothesis, expecting a positive link between mindfulness and time affluence, was not supported. This is surprising, since earlier studies often reported positive

connections between mindfulness and time perception. Schaupp and Geiger (2021), for example, found that participants in an eight-week MBSR program reported higher mindfulness and greater time affluence, with time affluence partly explaining gains in well-being. Several differences might explain why their findings diverge from the present study. They used an intervention, while here trait mindfulness was measured with the MAAS. In addition, they relied on the Freiburg Mindfulness Inventory (FMI; Walach et al., 2006), which captures both acceptance and presence, while the MAAS is narrower in scope. Their sample was also older (average age 37), largely female (over 85%), and assessed well-being more broadly, including life satisfaction and eudaimonic well-being, not just affect. Taken together, these differences suggest that it may not be trait mindfulness alone that matters, but the regular practice of mindfulness in daily life. Such practice may build habits that increase both time affluence and well-being, effects that are less visible when only dispositional mindfulness is measured.

This interpretation also fits with a systematic review by Morin and Grondin (2024), who analyzed 47 studies and concluded that both mindfulness interventions and trait mindfulness (often measured with the MAAS) tend to slow the perception of time and enhance present-moment awareness, two key components of feeling time-affluent. Against this backdrop, the absence of an effect in this study raises further questions. It is possible that sample size, cultural characteristics of this German student group, or the specific way mindfulness was measured played a role. Another possibility is that intervention effects seen in structured programs may not fully generalize to everyday trait mindfulness. Overall, these inconsistencies suggest that the link between mindfulness and subjective time experiences may be more complex than previously assumed and should be interpreted with care (Schaupp & Geiger, 2021; Chen et al., 2017; Morin & Grondin, 2024).

The second hypothesis, predicting a positive relationship between mindfulness and compassionate goals, was also not supported. This contrasts with theoretical arguments that mindfulness helps foster compassionate goal orientations. Tirsch (2010), for example, describes mindfulness as laying the emotional and neural groundwork for compassion by strengthening attention and emotion regulation. Condon (2016) likewise argues that mindfulness supports not just momentary compassion but also the development of longer-term compassionate goals. Empirical work supports these claims: Stewart et al. (2018), using the same compassionate/self-image goals scale as in the present study, found that mindfulness predicted stronger compassionate goals in students, especially through facets such as “Acting with Awareness” and “Observing.” Their research, however, used the Five-

Facet Mindfulness Questionnaire (FFMQ; Baer et al., 2006), which captures multiple aspects of mindfulness, compared to the MAAS used here. Their participants also came from a different context, a predominantly female group of psychology students at a U.S. university. These methodological and sample-related factors may help explain why the present study did not replicate their results. In addition, applied studies such as Orellana-Rios et al. (2018) show that mindfulness interventions can shift attitudes toward compassion in everyday relational settings, an effect that may not be captured in a cross-sectional design. Taken together, this suggests that the link between mindfulness and compassionate goals may be highly context dependent.

The third hypothesis was partially supported: compassionate goals were moderately, though weakly, associated with time affluence. This finding is consistent with Niiya and Suyama (2024), who showed that compassionate goals encourage a “non-zero-sum” view of time, in which shared activities feel enriching rather than draining. However, their study was conducted in Japan, where cultural values may shape this effect, and during the COVID-19 pandemic, right before the second wave, conditions that may have heightened the salience of compassion and time perception. The weaker effect in the current study suggests that compassionate goals alone may not strongly shape feelings of time affluence. Instead, other influences, such as cultural background, situational context, and concrete behavior, likely play an important role. This view is supported by Crocker and Canevello (2008), who showed that compassionate goals improve well-being and social connectedness, which may indirectly contribute to time affluence. Thus, while the present findings lend some support to the theoretical link, they also highlight the need to study the conditions under which compassionate goals reliably affect time perception.

The fourth hypothesis, testing whether compassionate goals mediate the link between mindfulness and time affluence, was not supported. Previous research has usually shown that mindfulness relates to both variables, creating the potential for mediation. In this study, however, mindfulness was not significantly linked to either compassionate goals or time affluence, making mediation unlikely. Again, this could be due to the way mindfulness was measured, characteristics of the German student sample, or contextual factors that weakened the expected effects. As such, the absence of mediation should be viewed cautiously, and future research should examine under what circumstances mindfulness might shape time affluence indirectly via compassionate goals.

Finally, the findings on affective outcomes partly matched earlier work. Consistent with Crocker and Canevello (2008), compassionate goals were associated with higher

positive affect, underlining their role in emotional well-being. However, unlike previous research (Brown & Ryan, 2003; Stewart et al., 2018; Donald et al., 2019; Furnell et al., 2024), neither mindfulness nor time affluence predicted positive affect, and none of the predictors were related to negative affect. These differences suggest that the links between mindfulness, well-being, prosocial orientation, and time perception may depend on contextual factors and methodological choices and may not always generalize across samples.

Interpretation of Results

The findings of this study provide a picture of how mindfulness, compassionate goals and time affluence relate to one another. Contrary to expectations, mindfulness did not significantly predict perceived time affluence in this sample. While previous intervention studies have consistently shown that mindfulness can enhance the subjective experience of having more time, these results suggest that mindfulness alone may not be sufficient. Active practice, social engagement, or specific situational conditions may be necessary to translate mindfulness into a richer perception of time. This suggests that mindfulness constitutes a necessary, yet not sufficient, condition for the emergence of time affluence. From a sociological perspective, Hartmut Rosa's theory of social acceleration may help explain this null finding: constant societal pressures and the internalized demand to optimize time create structural constraints that limit the effect of mindfulness on time perception. Within the framework of Self-Determination Theory (SDT), mindfulness can strengthen autonomy and relatedness. However, without further activation or supportive, resonant contexts, these psychological resources may not be sufficient to foster a stronger sense of time affluence.

Mindfulness also showed no significant association with compassionate goals, which contrasts with theoretical and empirical work suggesting that mindful individuals are more likely to adopt prosocial and community-oriented objectives. This discrepancy may be partly methodological: the MAAS captures global trait mindfulness but not specific facets most relevant to social motivation, such as observing and acting with awareness in relational contexts. Cultural and contextual characteristics of the German student sample may further have limited the activation of compassionate goals through mindfulness. These findings indicate that the link between mindfulness and social motivation is more context-dependent and dynamic than previously assumed, potentially emerging only when individuals engage actively in social or intervention settings.

In contrast, compassionate goals were associated with higher time affluence, although the effect was moderate. This aligns with previous findings showing that pursuing compassionate goals can foster a “non-zero-sum” perception of time, in which spending time with others is experienced as mutually enriching rather than depleting. From an SDT perspective, compassionate goals fulfill the need for relatedness, which can indirectly enhance well-being and contribute to positive affect. However, the relatively small effect size suggests that social motivation is only one of several interacting factors shaping subjective time experience. Contextual constraints, actual behavior, and societal pressures likely moderate this relationship. The hypothesized mediation of mindfulness on time affluence through compassionate goals was not supported. This absence should be interpreted cautiously, as the mediation pathway has rarely been tested empirically. Mindfulness may have potential as a resource, but its influence on time perception likely requires active engagement or supportive environmental conditions to activate compassionate goal orientations.

Finally, regarding affective outcomes, compassionate goals significantly predicted positive affect, while mindfulness and time affluence did not. This highlights that interpersonal motivation may be more critical for positive emotional experiences than individual mindfulness or the subjective perception of time alone. In line with Rosa, experiencing non-zero-sum time in social interactions can create resonance, fostering meaningful connections and well-being, whereas mindfulness alone may be insufficient to produce these affective benefits without engagement in social or relational contexts.

In sum, these results emphasize the robust role of compassionate goals in promoting both subjective time affluence and positive affect, while highlighting the limits of mindfulness in isolation. They suggest that interventions aiming to enhance time-related well-being should focus on cultivating prosocial motivation and creating opportunities for resonance, rather than relying solely on mindfulness practice. The findings extend the current literature by showing that the interplay between mindfulness, interpersonal goals and time perception is complex, context-dependent and shaped by both individual and societal factors.

Strengths and Limitations

This study demonstrates several methodological strengths. First, robust statistical analyses, including multiple regression, mediation analysis with bootstrapping, and exploratory analyses controlling for a wide range of socio-demographic and lifestyle

variables, ensured a thorough examination of the proposed relationships. The inclusion of instruments, that were validated in other samples, such as the MAAS, PANAS, TA and the Compassionate/Self Image Goals Scale, supports construct validity and reliability. Moreover, the design incorporated both primary hypotheses and secondary exploratory analyses, allowing a comprehensive view of the factors influencing time affluence and affective outcomes.

Despite these strengths, several limitations must be acknowledged. Scales with values under .70 point to insufficient reliability, implying that the corresponding findings should be treated carefully and regarded as results that could have profited from a more robust sample. The sample size, while sufficient for correlational analyses, may have limited the power to detect small effects, particularly regarding mindfulness and its potential indirect effects. While the distribution of the survey through multiple individuals helped reduce potential sampling bias, the exclusive focus on German participants limits the generalizability of the findings, as the results may reflect culture-specific patterns that cannot be readily transferred to international contexts. In addition, since participants were recruited primarily through personal networks, the sample is subject to convenience sampling bias, which may further reduce the representativeness of the data. Originally, the survey was designed in English to reach an international sample, but the final dataset included almost exclusively German participants. Although they were proficient in English, subtle misunderstandings of item wording could have influenced responses, and using a German-language questionnaire might have been more appropriate for accurately assessing this population. This limitation may reduce the generalizability of the findings to other cultural contexts. The use of a slider scale to measure time affluence may have also introduced measurement error. Participants could have misused or underutilized the slider, or completed the study without careful attention, potentially affecting data quality. Additionally, the study relied entirely on self-report measures, which are susceptible to social desirability, recall bias and common method variance. Ethical considerations were carefully addressed, including informed consent, voluntary participation, and data confidentiality. However, the online format limits control over participant engagement and environmental distractions, which could introduce variability in responses. Threats to internal validity include the cross-sectional design, which prevents causal inference and does not capture dynamic changes over time. Regarding generalizability and external validity, the findings are primarily applicable to young adult student populations in similar cultural contexts. Ecological validity may be limited due to the online survey format, English language measures, and lack of real-time behavioral

observation. While the observed effects of compassionate goals on time affluence appear robust within this sample, caution is advised when extending these results to non-student populations, older adults or culturally diverse settings.

Practical and Theoretical Implications and Future Research

The results of this study challenge some common assumptions about mindfulness and its direct influence on perceived time affluence. While previous research suggested a straightforward pathway from mindfulness to increased well-being and a richer sense of time (Brown & Ryan, 2003; Schaupp & Geiger, 2021), the present findings show that specifically compassionate goals play a more direct role. This implies that mindfulness alone may not automatically create a sense of time abundance, rather it may need to interact with socially oriented goals to produce meaningful psychological benefits. Conceptually, this points to a more relational and context-dependent understanding of mindfulness, linking intrapersonal awareness with social motivations. In this sense, the study extends Self-Determination Theory by highlighting that social goal orientation, like compassionate goals, can bridge internal traits and external experiences such as time affluence. From a practical perspective, these findings suggest several ways to support student well-being and time management. Interventions aiming to enhance perceived time abundance could benefit from explicitly promoting compassionate goals alongside mindfulness practice. For example, workshops or online exercises could guide students to explore ways to help others or contribute positively to their community without feeling personally drained. Evidence shows that prosocial actions can paradoxically increase the giver's sense of time and efficacy (Mogilner et al., 2012).

In counseling or coaching, practitioners could help individuals reframe their perception of time, encouraging them to see collaborative time as enriching rather than competitive or scarce. This shift could reduce stress and improve overall well-being. At an institutional level, universities and organizations could design programs that foster compassionate engagement, for example as peer-support networks, collaborative projects, or service-learning opportunities, emphasizing the relational benefits of altruistic behavior. Policies that combine flexible scheduling and autonomy with socially constructive activities could enhance both productivity and mental health. In high-pressure contexts, integrating compassionate practices into the culture, for example through mentorship programs, team-building exercises, or structured reflection on social contributions, may help shift the perception of time from a zero-sum resource to a shared, meaningful experience. Overall,

these results highlight the importance of focusing not just on individual traits like mindfulness, but also on interpersonal goals that allow people to experience time and relationships as abundant.

This study opens several directions for future research. First, longitudinal and experimental studies are needed to examine whether actively cultivating compassionate goals can causally increase perceived time affluence and reduce feelings of time scarcity. Such designs could clarify whether interpersonal goals drive time perception over time. Second, cross-cultural research could investigate whether these relationships hold in different societies, as the understanding and value of shared time may vary across cultural contexts. Third, including behavioral measures of prosocial activity, rather than relying solely on self-reports, could provide more ecologically valid insights into how compassionate goals influence both time perception and well-being. Fourth, future studies could explore additional mediators, such as self-efficacy, gratitude, or perceived control, to better understand the mechanisms linking mindfulness, interpersonal goals and subjective time experiences. Finally, examining how mindfulness interventions can be combined with exercises that promote compassionate goals may reveal practical ways to enhance resonance, well-being, and a sense of time abundance in everyday life. Overall, shifting the focus from individual traits to the interaction between social intentions and time perception could help uncover new strategies to personal flourishing.

Conclusion

This study set out to explore how mindfulness, compassionate goals, and perceived time affluence are interconnected, with a particular focus on whether compassionate goals mediate the relationship between mindfulness and time perception. The research was motivated by growing concerns about mental health, especially among young adults, and the recognition that feeling rushed or time-poor is linked to stress, reduced well-being, and negative psychological outcomes. As highlighted in the introduction, despite increased leisure time in modern societies, many individuals still report feeling overwhelmed, suggesting that the quality of daily time use, not just its quantity, matters for well-being.

The findings reveal several important insights. Mindfulness alone did not significantly predict time affluence or compassionate goals in this sample, challenging assumptions that dispositional mindfulness directly enhances the subjective experience of time. In contrast, compassionate goals consistently predicted higher time affluence and positive affect,

emphasizing the critical role of interpersonal goals in shaping how time is experienced. The hypothesized mediation of compassionate goals between mindfulness and time affluence was not supported, but the results suggest that social intention may be a effective pathway than mindfulness alone for fostering a sense of abundant, meaningful time.

These results carry both theoretical and practical implications. They suggest that interventions aiming to improve well-being should not focus solely on individual traits or personal efficiency, but also on fostering prosocial engagement and community-oriented goals. Encouraging collaborative activities, shared projects, or altruistic behaviors may help counteract the fragmentation of modern life, making time feel more meaningful and enhancing both personal and collective well-being.

In conclusion, this research emphasizes that humans are social beings, whose experience of time is deeply embedded in relationships and shared purposes. While mindfulness supports individual awareness, it is the compassionate goals that enriches the perception of time and counterbalances the isolating tendencies of modern life. By highlighting these dynamics, the study offers a pathway toward a more relational, resonant and time affluent experience of everyday life.

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Appendices A: Informed Consent

Research Survey for Master's Dissertation

Please Read the Following Information Carefully

Voluntary Participation: Your participation in this study is entirely voluntary. You may stop at any time without giving a reason and without any consequences.

What You Will Do: If you agree to participate, you will complete an anonymous online questionnaire that will take approximately 10- 15 minutes. It includes questions about: Mindfulness, Personal goals in social relationships, your experience of time, General demographic information (e.g., age, gender).

Anonymity and Data Protection: Your responses will be completely anonymous. No identifying information will be collected, and no IP address will be stored or reported. All data will be stored securely and used solely for academic research.

Risks and Benefits: There are no known risks, discomfort or benefits associated with participating in this study. While you will not receive any monetary compensation, your participation will contribute to the scientific understanding of well-being and time perception.

Contact Information

If you have any questions or would like to receive feedback on the study results, please contact:

Lavinia Hils, Master's Student
Universidade Católica Portuguesa
Email: s-lhils@ucp.pt

By continuing, you confirm that you have read all the information and agree to take part in the study.

Appendices B: Questionnaire

Start of Block: Introduction

Academic Survey: Mindfulness, Compassionate Goals and the subjective Experience of Time.

You are invited to take part in a research study conducted as part of a master's thesis at Universidade Católica Portuguesa.

Purpose of the Study

This study explores how *mindfulness*, *compassionate goals* and the *subjective experience of time* relate to one another. The goal is to better understand which psychological factors may help people experience time more positive and meaningful in their everyday lives. In a world increasingly shaped by time pressure and social demands, this research aims to contribute to the understanding of how inner resources like mindfulness and social motivation may enhance personal well-being and time satisfaction.

Please note: This study is intended exclusively for students.

By continuing you confirm that you are currently enrolled at a university or another institution of higher education.

End of Block: Introduction

Start of Block: Demographic Data

Q1 What is your age?

0 10 20 30 40 50 60 70 80 90 100

Indicate your age using the slider. ()



Q2 What is your gender?

- ☐ Male (1)
- ☐ Female (2)
- ☐ Other (3)

Q3 What is your marital status?

- ☐ Single (1)
- ☐ In a relationship (2)
- ☐ Married (4)
- ☐ Other (5)

Q4 What is your highest level of education?

- ☐ Non-formal education (1)
- ☐ Middle School (2)
- ☐ High School (3)
- ☐ Job Training Diploma (4)
- ☐ Bachelor Degree (5)
- ☐ Master Degree/Advanced Job Training (6)
- ☐ Doctorate/PhD (8)
- ☐ Other (9)

Q5 What type of area do you live in?

- ☐ Rural (e.g., small village, countryside) (1)
- ☐ Suburban (e.g., residential area near a city) (2)
- ☐ Urban (e.g., city or metropolitan area) (3)

Q6 What is your current employment status? (Indicate your main status)

- ☐ Part-time employed (1)
- ☐ Full-time employed (2)
- ☐ Self-employed/Freelancer (3)
- ☐ Unemployed (4)
- ☐ Student (School/Bachelor/Master/Gap Year) (5)
- ☐ Retired (6)
- ☐ Carework (for example parents, grantparents) (7)
- ☐ Others (8)

Q7 What is your current level of study? (Please select the highest level you are currently enrolled in)

- ☐ Bachelor's degree (1)
- ☐ Master's degree (2)
- ☐ PhD / Doctoral degree (4)
- ☐ Other (5)

Q8 What year of your current study program are you in?

- ☐ 1st year (1)

- ☐ 2nd year (2)
- ☐ 3rd year (3)
- ☐ 4th year or above (4)

Q9 What is your field of study? (Please choose the option that best describes your main area of study)

- ☐ Arts and Humanities (e.g., Literature, Philosophy, History, Languages) (1)
- ☐ Social Sciences (e.g., Psychology, Sociology, Political Science, Anthropology) (2)
- ☐ Natural Sciences (e.g., Biology, Chemistry, Physics, Environmental Science) (3)
- ☐ Engineering and Technology (4)
- ☐ Business and Economics (5)
- ☐ Law (9)
- ☐ Medicine and Health Sciences (10)
- ☐ Education and Pedagogy (11)
- ☐ Computer Science / Information Technology (12)
- ☐ Other (13)

Q10 What is your nationality?

▼ Afghanistan (1) ... Zimbabwe (196)

Q11 In which country do you currently live?

▼ Afghanistan (1) ... Zimbabwe (196)

End of Block: Demographic Data

Start of Block: Daily Time Use

Q12 Please indicate how you typically spend your time during a regular week.

For each activity listed below, use the slider to estimate the average number of hours you spend on it per week. If you don't engage in an activity at all, please move the slider to zero. You must click on the slider (even for zero hours) to confirm your response. You may leave any item blank if you prefer not to answer.

	0	17	34	50	67	84	101	118	134	151	168
Providing childcare ()											
Providing care for elderly individuals or others in need ()											
Studying (lectures, self-study, reading, etc.) ()											
Spending time in nature ()											
Doing physical exercise ()											
Engaging in relaxation techniques (e.g., body scan, MBSR, breathing exercises, progressive muscle relaxation, meditation, yoga, or similar) ()											
Spending time with family and friends ()											
Working in a paid job ()											

Q13 On average, how many hours of screen time do you have per day? In this study, screen time refers specifically to non-essential, leisure-related use of screens (e.g., social media, streaming, gaming). You must click on the slider (even for zero hours) to confirm your response. You may leave any item blank if you prefer not to answer.

	0	24
Indicate daily hours using the slider. ()		

Q14 On average, how many hours do you sleep per day? You must click on the slider (even for zero hours) to confirm your response. You may leave any item blank if you prefer not to answer.

	0	24
Indicate daily hours using the slider. ()		

Q15 Is there something you perceive very time consuming, that was not mentioned in the previous questions?

End of Block: Daily Time Use

Start of Block: MAAS

Q18 Below is a collection of statements about your everyday experience.

Using the 1-6 scale below, please indicate how frequently or infrequently you currently have each experience.

Please answer according to what really reflects your experience rather than what you think your experience should be. Please treat each item separately from every other item.

[illegible]

I do jobs or tasks automatically, without being aware of what I'm doing. (10)

☐☐☐☐☐☐

I drive places on 'automatic pilot' and then wonder why I went there.(11)

☐☐☐☐☐☐

I find myself preoccupied with the future or the past.(12)

☐☐☐☐☐☐

I find myself doing things without paying attention.. (13)

☐☐☐☐☐☐

I snack without being aware that I'm eating.. (14)

☐☐☐☐☐☐

I tend not to notice feelings of physical tension or discomfort until they really grab my attention. (15)

☐☐☐☐☐☐

End of Block: MAAS

Start of Block: Compassionate Goals

Q19 In the past week, in the area of friendships, how much did you want or try to:

	None at all	A little)	Somewhat	A lot	Extremly
avoid the possibility of being wrong (1)	☐	☐	☐	☐	☐
avoid doing things that aren't helpful to me or others (2)	☐	☐	☐	☐	☐
get others to recognize or acknowledge your positive qualities (3)	☐	☐	☐	☐	☐
avoid being selfish or self- centered (4)	☐	☐	☐	☐	☐
have compassion for others' mistakes and weaknesses (5)	☐	☐	☐	☐	☐
avoid being rejected by others (6)	☐	☐	☐	☐	☐
avoid taking risks or making mistakes (7)	☐	☐	☐	☐	☐
be constructive in your comments to others (8)	☐	☐	☐	☐	☐
avoid showing your weaknesses (9)	☐	☐	☐	☐	☐
avoid doing anything that would be harmful to others (10)	☐	☐	☐	☐	☐
be supportive of others (11)	☐	☐	☐	☐	☐
make a positive difference in someone else's life (12)	☐	☐	☐	☐	☐
convince others that you are right (13)	☐	☐	☐	☐	☐

End of Block: Compassionate Goals

Start of Block: TA-Time Affluence

Q20 I tend not to notice feelings of physical tension or discomfort until they really grab my attention **Using the 1-5 scale below, please indicate the extent to which you agree or disagree with the following statements:**

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
My life has been too rushed (1)	☐	☐	☐	☐	☐
I have had plenty of spare time (2)	☐	☐	☐	☐	☐
I have been racing from here to there (3)	☐	☐	☐	☐	☐
I have had enough time to do what I need to do (4)	☐	☐	☐	☐	☐
I have been able to take life at a leisurely pace (5)	☐	☐	☐	☐	☐
There have not been enough minutes in the day (6)	☐	☐	☐	☐	☐
I have had enough time to do the things that are important to me (7)	☐	☐	☐	☐	☐
I have felt like things have been really hectic (8)	☐	☐	☐	☐	☐

End of Block: TA-Time Affluence

Start of Block: PANAS

Q17 This scale consists of a number of words that describe different feelings and emotions. Read each item and then mark the appropriate answer. Indicate to what extent you generally feel this way, that is, how you feel on the average. Use the following scale to record your answers.

	Very slightly or not at all	A little	Moderately	Quite a bit	Extremely
Interested (1)	☐	☐	☐	☐	☐
Distressed (2)	☐	☐	☐	☐	☐
Excited (3)	☐	☐	☐	☐	☐
Upset (4)	☐	☐	☐	☐	☐
Strong (5)	☐	☐	☐	☐	☐
Guilty (6)	☐	☐	☐	☐	☐
Scared (7)	☐	☐	☐	☐	☐
Hostile (8)	☐	☐	☐	☐	☐
Enthusiastic (9)	☐	☐	☐	☐	☐
Proud (10)	☐	☐	☐	☐	☐
Irritable (11)	☐	☐	☐	☐	☐
Alert (12)	☐	☐	☐	☐	☐
Ashamed (13)	☐	☐	☐	☐	☐
Inspired (14)	☐	☐	☐	☐	☐
Nervous (15)	☐	☐	☐	☐	☐
Determined (16)	☐	☐	☐	☐	☐
Attentive (17)	☐	☐	☐	☐	☐

Jittery (18)	☐	☐	☐	☐	☐
Active (19)	☐	☐	☐	☐	☐
Afraid (20)	☐	☐	☐	☐	☐

End of Block: PANAS

Appendix C: Supplementary Tables and Figures

Table 1.

Proportion of Missing Data for Demographic, Time-Use, and Scale Variables

Variable	Variable Type	% Missing
Age	Demographic	0%
Gender	Demographic	3.6%
Highest Level of Education	Demographic	4.2%
Area of Living	Demographic	1.2%
Level of Study	Demographic	6%
Field of Study	Demographic	5.4%
Current Study Program	Demographic	4.8%
Nationality	Demographic	3%
Country	Demographic	4.8%
Care work for Children	Time-Use	9%
Care work for Elders	Time-Use	9%
Hours Studying	Time-Use	6%
Time Spent in Nature	Time-Use	5.4%
Physical Exercise	Time-Use	5.4%
Relaxation Techniques	Time-Use	11.4%
Time with Family & Friends	Time-Use	5.4%
Working in Paid Job	Time-Use	4.8%
Screentime	Time-Use	7.8%
Sleep	Time-Use	6%
Mindfulness Scale (15 items)	Scale	0.6–2.4%
Compassionate & Self-Image Scales (13 items)	Scale	0–2.4%
Time Affluence Scale (8 items)	Scale	0–1.8%
Positive & Negative Affect Scale (20 items)	Scale	0–4.2%

Table 2.*Correlations between Main Study Variables*

Variable	Mindfulness	Time Affluence	Compassionate Goals	Positive Affect	Negative Affect
Mindfulness	—	0.097	-0.028	0.073	0.028
Time Affluence	0.097	—	0.318**	0.200**	0.005
Compassionate Goals	-0.028	0.318**	—	0.455**	-0.044
Positive Affect	0.073	0.200**	0.455**	—	—
Negative Affect	0.028	0.005	-0.044	—	—

Note. Pearson correlations were calculated to examine linear relationships between variables. All analyses were conducted using IBM SPSS Statistics Version 17.2. Statistical significance was set at $p < .05$ (two-tailed), and effect sizes were interpreted according to Cohen's (1988) guidelines ($r = .10$ small, $r = .30$ medium, $r = .50$ large).

Table 3.*Regression Analyses for Hypotheses 1–4*

Predictor / Variable	B	SE B	β	t	p
H1: Mindfulness → Time Affluence					
Mindfulness	0.074	0.059	0.097	1.25	0.214
Model Statistics	R ² = 0.003	F(1,163)=1.56	—	—	—
H2: Mindfulness → Compassionate Goals					
Mindfulness	-0.025	0.087	-0.028	0.353	0.725
Model Statistics	R ² = 0.001	F(1,163)=0.125	—	—	—
H3: Compassionate Goals → Time Affluence (controlling for Mindfulness)					
Compassionate Goals	0.283	0.063	0.063	4.498	<0.001
Mindfulness	0.080	0.056	0.106	1.442	0.151
Model Statistics	R ² = 0.119	F(2,162)=10.88	VIFs ≤1.001	—	—
H4: Mediation via Compassionate Goals					
Mindfulness (a-path)	-0.0245	0.0695	—	0.353	0.725
Compassionate Goals (b-path)	0.2830	0.0629	—	4.498	<0.001
Mindfulness direct (c'-path)	0.0805	0.0558	—	1.442	0.151
Total effect (c-path)	0.0735	0.0590	—	1.247	0.214
Indirect effect	-0.0069	0.0195	—	—	95% CI [-0.0486, 0.0284]

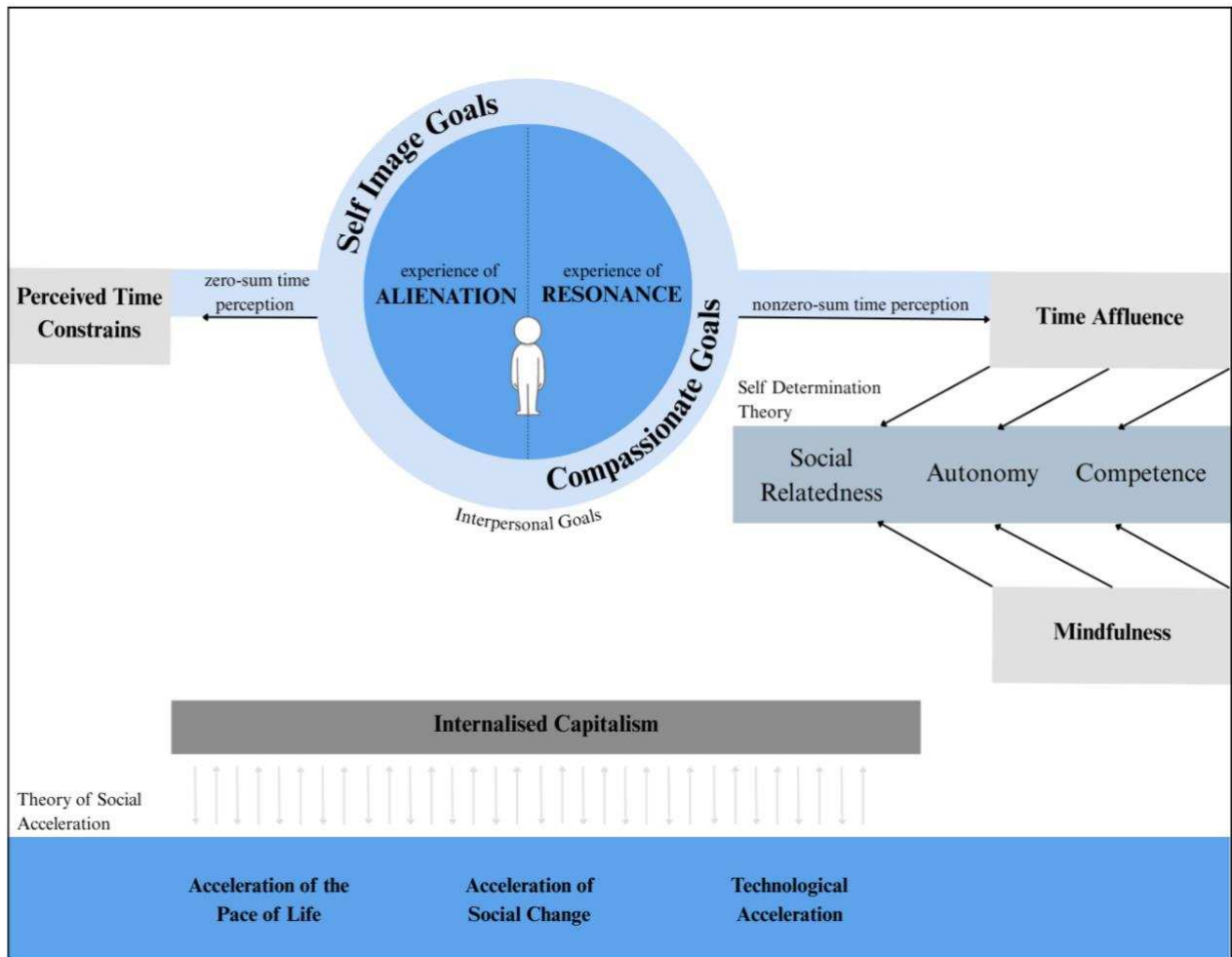
Note. All regression analyses were conducted using IBM SPSS Statistics Version 17.2. Simple and multiple linear regressions were performed, reporting both unstandardized (B) and standardized (β) coefficients, along with t- and p-values. Listwise deletion was applied for missing values. Multicollinearity was assessed using tolerance and VIF values. Statistical significance was set at $p < .05$ (two-tailed)

Table 4.*Time Affluence by Living Area*

Living Area	N	M	SD
Rural	35	3.189	0.572
Suburban	56	2.949	0.548
Urban	72	2.847	0.499

Note. Levene's test confirmed homogeneity of variances, $F(2,160) = 0.521$, $p = 0.595$. One-way ANOVA showed a significant effect of living area on Time Affluence, $F(2,160) = 4.871$, $p = 0.009$. Post-hoc Tukey comparisons: Rural > Urban, $p = 0.006$; Rural vs. Suburban, $p = 0.094$ (ns); Urban vs. Suburban, $p = 0.531$ (ns).

Appendix D: Graphic Integrative Conceptual Framework



Own illustration of the integrative conceptual framework, combining elements of Rosa's resonance theory (Rosa, 2003), Self-Determination Theory (Ryan & Deci, 2008), and the compassionate goals approach (Crocker & Canevello, 2008). The figure represents the interrelations among the key theories and their main constructs.