DIPLOMARBEIT

Titel der Diplomarbeit

How do professional newcomers deal with increased autonomy at work? The importance of self-leadership styles

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Abstract

Today's workers are expected to autonomously control work goals and actively plan their careers (Kubicek, Paškvan, & Korunka, under review). As the digital native generation (Prensky, 2001) was continuously encouraged to act autonomously when growing up (Twenge & Campbell, 2008), this thesis explored how professional newcomers of this cohort deal with increased autonomy at work. In a two-wave longitudinal study with 236 participants the effects of intensified job- and career-related autonomy demands on irritation and innovative work behaviour (IWB) were investigated. Further, the self-leadership strategies self-goal setting and self-punishment as personal resources that support dealing with intensified job- and career-related autonomy demands were analysed. It was expected that intensified autonomy demands were positively related to both irritation and IWB. Self-goal setting and self-punishment were expected to moderate between intensified job- and career-related autonomy demands and irritation and mediate between intensified job- and career-related autonomy demands and IWB. Results of regression analysis showed a significant long-term effect for intensified job-related autonomy demands on IWB. There was neither an effect of intensified job- and career-related autonomy demands on irritation nor a significant moderation or mediation of self-leadership. Findings indicate that young professionals indeed profit from increased autonomy, leading to innovative behaviour and output at work. At the same time they do not suffer irritation when facing increased autonomy at work. Generalisability of results to other cohorts is limited as this sample only consisted of young professional newcomers of the digital natives generation. This study is the first examining both positive and negative effects of increased autonomy in digital natives, as well as the role of self-leadership as a personal resource.

Keywords: autonomy demands, self-leadership, irritation, innovative work behaviour, professional newcomers, digital natives

Zusammenfassung

Von heutigen Arbeitnehmern wird vermehrt erwartet, dass sie ihren Arbeitsalltag selbstständig strukturieren und autonom ihre Karriere planen (Kubicek et al., under review). Da die Generation der Digital Natives (Prensky, 2001) während des Erwachsenwerdens kontinuierlich zu autonomem Verhalten ermutigt wurde, erforscht diese Diplomarbeit wie professionelle Berufseinsteiger dieser Kohorte mit gesteigerter Autonomie am Arbeitsplatz umgehen. In einer Längsschnittuntersuchung mit zwei Erhebungszeitpunkten wurden an 236 Teilnehmern die Auswirkungen von gesteigerten tätigkeits- und karrierebezogenen Autonomieanforderungen auf Irritation und innovatives Arbeitsverhalten untersucht. Zusätzlich wurden die Selbstführungsstrategien eigene Zielsetzung und Selbstbestrafung hinsichtlich ihrer Rolle als persönliche Ressourcen im Umgang mit Autonomieanforderungen untersucht. Ein positiver Zusammenhang von intensivierten tätigkeits- und karrierebezogenen Autonomieanforderungen mit Irritation und innovativem Arbeitsverhalten wurde erwartet. Ebenso wurde angenommen, dass die Selbstführungsstrategien eigene Zielsetzung und Selbstbestrafung als Moderator auf den Zusammenhang von intensivierten Autonomieanforderungen und Irritation wirken und als Mediator auf den Zusammenhang von intensivierten Autonomieanforderungen und innovativem Arbeitsverhalten. Die Ergebnisse der Regressionsanalyse zeigten, dass tätigkeitsbezogene Autonomieanforderungen positiv mit innovativem Arbeitsverhalten zusammenhängen. Es konnten weder signifikanten Effekte von intensivierten Autonomieanforderungen auf Irritation gezeigt werden, noch hatten die Selbstführungsstrategien einen signifikanten moderierenden oder mediierenden Effekt. Die Ergebnisse weisen darauf hin, dass professionelle Berufseinsteiger von gesteigerter Autonomie am Arbeitsplatz profitieren, indem sie innovativer arbeiten können. Gleichzeitig erleben sie durch gesteigerte Autonomie keine Gefühle von Gereiztheit. Die Übertragbarkeit der Ergebnisse auf andere Kohorten ist limitiert, da sie sich auf die Generation der Digital Natives beziehen. Diese Arbeit ist eine der ersten, die sowohl die positiven und negativen Auswirkungen von Autonomieanforderungen auf Digital Natives als auch die Rolle von Selbstführung als persönliche Ressource untersucht.

Schlüsselworte: Autonomieanforderungen, Selbstführung, Irritation, innovatives Arbeitsverhalten, professionelle Berufseinsteiger, Digital Natives

Introduction

Acceleration in the working world has increased and societal, economic and organisational transformations occur at a high pace (Rosa, 2013). These accelerated changes have to sped up organisational decision processes and require more flexible organisational structures (Cascio, 2003). In accordance with increased technological advancement the new ways of working (NWW) developed. They are enabled especially by technological innovations and give employees the flexibility to work wherever and whenever (Brummelhuis, Bakker, Hetland, & Keulemans, 2012). On the one hand research shows that in order to successfully perform in this environment, the ideal worker acts as a flexible entrepreneur, the "entreployee". He or she is able to manage him- or herself and his/ her workforce throughout the day (Pongratz & Voß, 2003) and work rather autonomously (Demerouti, Derks, ten Brummelhuis, & Bakker, 2014). This is especially beneficial to organisations. Studies show that autonomy is positively related to innovative work behaviour (IWB) (e.g. De Spiegelaere, Van Gyes, De Witte, Niesen, & Van Hootegem, 2014; Ramamoorthy, Flood, Slattery, & Sardessai, 2005) and innovation is a key factor for organisations to stay competitive (Axtell et al., 2000).

On the other hand, there are negative consequences of NWW such as work overload, informational overload and social overload accompanied by negative emotions are also found (Demerouti et al., 2014). Furthermore, research shows that there can be too much autonomy with the consequence of the so called intensified autonomy demands leading to exhaustion and cynicism (Kubicek, Korunka, & Tement, 2014). Depression is a rather slow process and not expected at job entry. Therefore this thesis focuses on the concept of irritation which describes the subjectively perceived emotional and cognitive strain at work, arising from an imbalance of personal resources and daily hassles (Mohr, Rigotti, & Müller, 2005) and acts as a predictor of depression (Mohr, 1991).

Those are the circumstances young professionals encounter when entering work life. Young professionals belong to a generation that grew up with modern technologies (Prensky, 2001) and was continuously encouraged to act autonomously (Twenge & Campbell, 2008), claiming autonomy as a crucial part of their innovativeness (Holt, Marques, & Way, 2012). However, having used technology only for leisure and being the generation that reports higher depression and more anxiety than previous generations (Twenge & Campbell, 2008), it seems questionable if they are up to deal with increased autonomy at work. Considering that they enter an occupational environment that demands self-managed and autonomous ways of working (Demerouti et al., 2014) this study focuses on self-leadership in the role of personal

resources following the job demands-resources model (JD-R) (Bakker & Demerouti, 2007). Self-leadership enables individuals to motivate themselves in order to achieve their ambitions (Manz, 1986), ergo supports employees to successfully manage work stress by creating an active environment. Following the above statements, this study's research question asks if self-leadership strategies support young professionals when dealing with autonomy demands. Since there is only little research investigating the detrimental effects of autonomy this thesis thrives to fill or reduce this research gap regarding young professionals. As they will have to work for many years to come, it is beneficial to know whether the current working conditions are suitable for their needs. Additionally, this research assesses irritation instead of depression in the context of the JD-R model, which has rarely been done so far. Furthermore, the role of self-leadership strategies as personal resources in the JD-R model is addressed, exploring their relevance in the face of job demands and job resources.

1. Theoretical background

The following parts are dedicated to the theoretical background in which this diploma thesis is embedded. Firstly, an introduction to the group of professional newcomers is given, including information about the specific characteristics of the NWW they are confronted with. Secondly, intensified autonomy demands arising from the new ways of working are discussed and the affects they may have on work outcomes such as irritation and innovation are described. Thirdly, an overview about innovative work behaviour and irritation is given and their importance as work outcomes is highlighted. Fourth, the concept of self-leadership as a way of dealing with increased autonomy is presented and complemented by previous research focusing on autonomy, IWB and irritation. Finally, the JD-R model as the theoretical framework of this diploma is presented.

1.1 Professional newcomers

As individuals enter organisations they change from being outsiders to becoming insiders through a process of organisational transformation (Schein, 1968). Moreover, professional newcomers have to adjust to their new organisation and achieve outcomes of individual well being and positive work attitudes (Cooper-Thomas & Wilson, 2011). This includes mastering new roles, performing as expected and exploring and building up new relationships (Nelson & Quick, 1991). Although many organisations provide support such as trainings, mentoring and buddy systems to support newcomers (Baranik, Roling, & Eby, 2010; Slaughter & Zickar, 2006; Van Maanen & Schein, 1979) it is often up to the newcomers themselves to make use of these resources through tactical behaviour (Cooper-

Thomas & Wilson, 2011). Employees in general have to take on more responsibility for their own career (Sullivan & Baruch, 2009), they have to rely more strongly on their own actions to achieve adjustment (Beyer & Hannah, 2002) and strive towards their own career goals (Harris & Ogbonna, 2006). Among other strategies, behavioural self-management and coping represent tactics professional newcomers use to achieve work- and career-related goals (Cooper-Thomas & Wilson, 2011). Naturally, these demands are the same or even higher when professional newcomers take on their first job after having finished their education. However, the generation currently entering work life may differ a little in their perception and handling of demands and challenges.

There are many terms to describe young professionals who are just starting work life. Some call them digital natives (Prensky, 2001), some call them Millennials (Howe & Strauss, 1992) and others Generation Y ("Generation y," 1993). There is no precise date for the Millennial generation or the Generation Y but the general agreement is that they were born between 1980 and 2000 (Hauw & Vos, 2010). Regardless of what this generation is called there are several common findings throughout the variety of definitions and studies. Being born in a rapidly expanding economy (Rawlins, Indvik, & Johnson, 2008), the digital natives grew up with digital technologies such as personal computers, mobile phones, video games, and the internet (Prensky, 2001). On average, in the US the life arc of a typical 21-year-old entering the work force today has contained the exchange of 250,000 emails, instant and phone text messages, 10,000 hours of mobile phone use, 5,000 hours of Video gaming and approximately 3,500 hours of being online (Rainie, 2006). Accordingly, digital natives are used to receiving information rapidly and they prefer to parallel process und multi-task (Prensky, 2001), not only to communicate and for leisure but also to perform their work tasks (Rapetti & Cantoni, 2010).

Besides their natural way of dealing with technology young professionals enter work life with a whole new attitude towards employment compared to preceding generations. Growing up as a generation routinely encouraged to flex their autonomy skills (Twenge & Campbell, 2008) they claim autonomy makes them more creative and innovative (Holt et al., 2012). Furthermore they consider flexible working hours, family-work balance and autonomy as key factors that determine their staying or leaving of an organisation (Herzberg, 1987). This goes hand in hand with findings from Cennamo & Gardner (2008) who discovered that the Millennials' focus lies on freedom-related work values such as work-life balance and autonomy. Accordingly, they have high expectations towards their work-life balance and seek

psychological contracts with their future employers that allow for a better harmony of work and personal goals (Smola & Sutton, 2002).

1.1.1 Professional newcomers and the new ways of working

As the young professionals have just started work life, they are now confronted with the NWW (Demerouti et al., 2014). Central to the NWW is the employees' freedom to flexibly organise their work supported by electronic communication. NWW contain increased temporal and local workplace flexibility through the elevated use of information and communication technologies (ICTs) (Brummelhuis et al., 2012). Firstly, temporal workplace flexibility gives employees the autonomy to decide when they work, dissolving the traditional nine-to-five working day. Secondly, NWW allow the employees to work from different places such as the office, home, a coffee shop or during commuting time. Third, ICTs such as e-mail, smartphones, tablets and videoconferences enable and facilitate the NWW (Brummelhuis et al., 2012). ICTs allow employees to communicate with co-workers, supervisors and clients via video phone calls, online and text messaging and digital meetings (Baarne, Houtkamp, & Knotter, 2010). Moreover, NWW require autonomous and self-managed ways of working (Demerouti et al., 2014) and naturally, the ability to handle new technologies. Hence, young professionals should profit from the positive effects resulting from the NWW such as work engagement, an increased sense of autonomy and the saving of time and energy (Brummelhuis et al., 2012; De Jonge & Rutte, 1999; Kelliher & Anderson, 2008). This in turn creates a benefit to the organisation they are working for.

However, there are downsides to the NWW, namely information overload, work overload and social overload (Derks & Bakker, 2010). Information overload arises when the amount of information that is received and processed exceeds the employee's information processing capacity. Work overload occurs when there is not enough time for the employee to respond to all the messages received. Social overload develops when too many different people contact the employee and evoke too many distinct roles, exceeding the worker's interaction capacity (Demerouti et al., 2014). Although ICTs are designed to reduce communication delays, they also increase work interruptions (Rennecker & Godwin, 2005). Brummelhuis et al. (2012) found that on days employees used more NWW they reported more interruptions by incoming e-mails and phone calls which consequently increased their daily work exhaustion. This can be explained by the fact that interruptions from a task are energy consuming as it takes time and effort to switch from one task to another and back again. Moreover, interruptions may generate additional thoughts and therefore cause feelings of frustration and irritation (Beal, Weiss, Barros, & MacDermid, 2005). Consistent with these

findings, Baethge & Rigotti (2013) discovered that the number of workflow interruptions experienced during a working day heightened irritation in the evening. These feelings of irritation and frustration consume cognitive resources that consequently increase exhaustion.

This may be particularly critical for newly employed professionals. Having grown up with ICTs and other technologies young professionals may not be used to effectively utilise them in the work context, contradictory to using them for private conversations and leisure. This can make it difficult for them to set boundaries and therefore makes them more vulnerable to information, work or social overload in the work context. Additionally, Twenge & Campbell (2008) observed higher levels of depression and anxiety for the Generation Y which seemed to increase along with an intensification of organisational stressors such as longer work hours, downsizing, lack of job security, role overload and role ambiguity.

1.2 Intensified autonomy demands

NWW are a result of increased technological advancement. This as well as economic and organisational change has altered expectations directed towards employees over the past decades. Having to work in an environment that emphasises speed (Cascio, 2003), autonomy (Pongratz & Voß, 2003) and knowledge (Loon & Casimir, 2008), employees find themselves working under intensified demands for autonomy. This gives them increased job control over deciding when, where and how to perform their work (Kattenbach, Demerouti, & Nachreiner, 2010). Although the Job-Demands-Resources model (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001) considers job control, i.e. autonomy a demand fostering well being, there are also oppositional voices.

The Vitamin Model by Warr (1994) for example, proposes that work characteristics such as autonomy may have positive consequences up to a certain level. However, once this threshold is exceeded, the positive effects disappear and instead these work characteristics may induce harmful effects, just like vitamins are harmful when overdosed. Negative consequences of job control may arise because employees are overpowered by the increased possibilities of organising work by themselves and the connected responsibilities such as remembering and actually keeping deadlines autonomously. Too much autonomy may also be harmful because employees have to meet these demands in shorter time periods (Pongratz & Voß, 2003).

1.2.1 Intensified job-related autonomy demands

Employees increasingly experience intensified job-related autonomy demands, among other things resulting from rapid technological progress (Kubicek et al., under review). In

order to keep up with the competition organisations and businesses speed up their decision processes and implement more flexible organisational structures (Cascio, 2003). In Europe, this has led to different ways of corporate labour control (Pongratz & Voß, 2003) with reduced direct control and an increase of the employee's self-organisation and self-control. In order to compete in a globalised market where innovation and customised services are vital to an organisation's survival (Axtell et al., 2000) hierarchy levels are reduced and team and project work is fostered. Essentially, the employee no longer performs repetitive work but acts as a flexible entrepreneur (Pongratz & Voß, 2003). In consequence, employees not only have the possibility to make their own decisions but rather the obligation to do so. This includes the autonomous setting and controlling of work goals, the autonomous structuring and planning of the workday and autonomously determining how to handle work tasks (Kubicek et al., under review).

1.2.2 Intensified career-related autonomy demands

The intensification of autonomy demands is not restricted to the job itself but also extends to the career (Kubicek et al., under review). Employees are increasingly required to remain attractive on the labour market, which they have to do by acting self-directed and taking individual responsibility for their own careers (Pongratz & Voß, 2003). Accordingly, the demands to autonomously controlling one's career have increased over the past years. Therefore, employees are progressively confronted with the autonomous planning and pursuing of their careers inside and outside of their current organisation (Zeitz, Blau, & Fertig, 2009). Moreover, they have to increasingly engage in external networking as well as being open to career opportunities from their current organisation and imaginable future employers. This leads to the employees experiencing intensified career-related autonomy demands (Kubicek et al., under review). These intensified career-related autonomy demands are also related to the fear of becoming unattractive for the job market and the uncertainty about future job prospects (Kubicek et al., under review).

1.3 Effects of autonomy demands on professional newcomers

Autonomy appears to play a crucial part in young professionals' work expectations but also seems to contain some risk when administered too much and unsupervised. In the following section, this thesis focuses on irritation and innovative behaviour in order to distinguish whether intensified autonomy demands have a positive or negative impact on professional newcomers' well being and innovativeness at work.

1.3.1 Irritation

The perpetual connection to work facilitated through NWW and ICTs entails that work never really stops. This may interfere with psychological detachment from work (Sonnentag & Bayer, 2005) and foster an increase in stress (Kelliher & Anderson, 2008; Mazmanian, Orlikowski, & Yates, 2005). According to the transactional stress model by Lazarus (1966) these irritating processes can lead to a vicious cycle, allowing the development of severe mental disorders such as depression, burnout and anxiety. Before stress becomes pathological, an imbalance between personal resources, daily hassles and work demands develops. This is called irritation.

The concept of irritation (Mohr, Rigotti, et al., 2005) indicates harmful effects of critical working conditions and acts as a mediator between stress and mental disorders. Thus, irritation can be seen as a state of mental impairment resulting from work strain (Müller, Mohr, & Rigotti, 2004). When individuals experience uncertainty arising from a discrepancy between a given situation and an important personal goal, they may try to reduce these discrepancies. Irritation can be understood as a specific psychological reaction to obstacles or an overdriven regulation within the goal achievement process (Mohr, Müller, & Rigotti, 2005). If the individual is not able to reduce goal discrepancy, for example by overcoming hindering circumstances or initiating new strategies of goal achievement it may resort to ruminations. They serve to reduce the individual goal discrepancy by mentally simulating a solution of the perceived problem. Unfortunately, ruminations are rather counterproductive as they are a state oriented strategy.

Unsuccessful coping mechanisms are mentally repeated over and over again, hindering the development of new solution strategies (Müller et al., 2004). This state is called 'cognitive irritation'. Ruminating over the problem may enhance and prolong negative feelings (Nolen-Hoeksema, McBride, & Larson, 1997) leading to a depletion of personal resources. The cumulative depletion of resources shows itself through increased irritability when interacting socially. This so called 'emotional irritation' is expressed in nervousness and a mild form of verbally aggressive behaviour as a result of enduring rumination processes with no reduction of the goal discrepancy. Emotional irritation leads to negative interactions and thus eliminates the function of people as a source for new resources (Mohr et al., 2005).

Irritation has been shown to be a mediator of the relationship between stressors at work and the deterioration of well being, including depression and psychosomatic complaints, in both cross-sectional (Höge, 2009) and longitudinal studies (Dormann & Zapf, 2002). However, its development is more rapid than the development of mental illnesses such as

emotional exhaustion. Additionally, it is not likely to be discovered on a short note like it is the case for mood. Therefore, irritation is more likely to be found at job entry and shortly after, when the imbalance between resources and demands is already established but not yet so far advanced that it would result in pathological consequences. Thus, negative long-term effects of intensified autonomy such as components of depression (Kubicek et al., 2014) could be discovered earlier through the concept of irritation.

1.3.2 Innovative Work Behaviour

Nowadays it is crucial for organisations to continuously innovate and improve products, services and work processes. Individuals are therefore expected to be engaged in their work, show initiative and be innovative. According to Farr & Ford (1990) IWB is defined as an individual's behaviour that aims for the initiation and intentional introduction of new and useful ideas, processes, products or procedures in the work context. Creativity is a crucial component of IWB, however IWB is different from creativity as it explicitly intends to offer some kind of benefit and is expected to result in innovative output (de Jong & Den Hartog, 2008). Creativity is required during the first stage of IWB when problems are recognised and ideas are generated (West, 2002). The innovation researchers de Jong & Den Hartog (2008) distinguished the following four stages of IWB: idea exploration, idea generation, championing and application.

At the beginning of the innovation process there often appears to be an element of chance, like the discovery of an opportunity or some arising problem. Drucker (1985) identified seven sources of opportunities, including: new knowledge; unexpected successes, failures and events; changes in perception; process needs in reaction to identified problems and failure; gaps between 'what is' and 'what should be'; changes in industrial and market structures, and last, changes in demographics such as labour force composition. Idea exploration contains looking for ways to improve current services, processes or products or trying to think about them in alternative ways (Farr & Ford, 1990). Additionally, idea generation relates to new products, processes or services and, in general, the solution to identified problems (Kanter, 1988). The combination and reorganisation of information and existing concepts to improve performance or solve problems appears to be a crucial part of idea generation (de Jong & den Hartog, 2010). Once an idea has been generated, championing is the third step in IWB. Although most ideas may be legitimate and fill a gap or solve a problem, it is uncertain whether their benefits will exceed the cost of developing and implementing them (Kanter, 1988). Therefore, and to overcome resistance towards change ideas have to be sold. Championing one's own or someone else's idea includes behaviours

such as finding supporters, building coalitions and pushing and negotiating with other employees and management (de Jong & Den Hartog, 2008). At last the ideas need to be implemented. This requires considerable effort and a result-oriented attitude as implementation includes making innovations part of regular work processes (Kleysen & Street, 2001) as well as testing and modifying them (Kanter, 1988).

Mumford & Gustafson (1988) suggest that among other conditions, autonomy and risk taking should be present for a work environment to foster innovation and creativity. Since innovation involves trial and error behaviour thus successes and failures, it is not surprising that IWB is closely related to autonomy. Axtell, Holman, & Wall (2006) found that job control predicts idea suggestions, and a direct and indirect relation of job autonomy and IWB was discovered by Ramamoorthy et al. (2005). These results are supported by recent findings of De Spiegelaere et al. (2014) who confirmed the positive direct and indirect relation of autonomy and IWB. It seems that autonomy gives employees the freedom to try out new ideas even in the face of failure, so they are able to find more efficient ways of doing their work. Therefore, although intensified autonomy at work may have detrimental effects (Kubicek et al., 2014) it may also allow people to achieve better working conditions, making them behave more innovatively.

1.4 Dealing with autonomy demands: self-leadership styles

As autonomy demands at work increase, employees, especially those just starting their work lives have to learn how to handle these for the period of their employment. One way to achieve one's goals amidst the vast freedom of organizing one's work and career is self-leadership (Manz, 1986). In contrast to traditional forms of leadership where a superior decides the individuals' work structures and tasks, self-leadership enables individuals to organise themselves (Manz, 1986) without or with only little external control.

1.4.1 Definition and conceptualisation

Self-leadership is a self-influence process through which individuals control their own behaviour. By using behavioural and cognitive approaches they influence and lead themselves (Manz, 1986; Manz & Neck, 2004). This process helps employees to achieve the self-direction and self-motivation necessary to perform and reach their goals (Manz, 1986; Manz & Neck, 2004). Self-leadership is trainable and consists of specific behavioural and cognitive strategies designed to improve personal effectiveness. There are usually three primary categories of self-leadership, namely behaviour-focused strategies, natural reward strategies

and constructive thought patterns (Manz & Neck, 2004; Manz & Sims, 2001; Prussia, Anderson, & Manz, 1998).

Behaviour-focused strategies aim to heighten an individual's self-awareness leading to the management of behaviours involving necessary but unpleasant tasks (Manz, 1992; Manz & Neck, 1999). Behaviour-focused self-leadership strategies include self-observation, self-goal setting, self-reward, self-punishment, and self-cueing and are designed to encourage positive, desirable behaviours that lead to successful outcomes. At the same time, negative and undesirable behaviours that lead to unsuccessful outcomes are suppressed (Neck & Houghton, 2006). Self-observation serves to identify when and why one engages in certain behaviours and to analyse whether some specific behaviours should be changed, enhanced or eliminated (Mahoney & Arnkoff, 1978, 1979; Manz & Neck, 2004; Manz & Sims, 1980). Having adapted current behaviours and performance levels the individual can effectively set personal goals that may lead to improved performance (Manz, 1986; Manz & Neck, 1999; Manz & Sims, 1980). Prior research has shown that the setting and accepting of challenging and specific goals can have a significant effect on sparking individual performance (Locke & Latham, 1990). Combined, the self-setting of goals and rewards may very effectively reinforce desirable behaviours and goal attainments (Mahoney & Arnkoff, 1978; Manz & Sims, 1980; Manz & Neck, 2004). Self-rewarding includes behaviours such as mentally congratulating oneself for important accomplishments or treating oneself with a nice meal or a weekend abroad at the end of a challenging project (Houghton & Neck, 2002). Self-punishment or self-correcting feedback is used to shape desirable behaviours. However, due to its detrimental nature it should only be administered in positive ways (Neck & Houghton, 2006) Finally, specific environmental cues such as lists, notes and motivational posters can serve as effective means for encouraging constructive behaviour and reducing or eliminating destructive ones (Manz & Neck, 2004; Manz & Sims, 2001). Behaviour-focused strategies allow individuals to shape their behaviour in ways that enable them to fulfil important tasks.

Natural or intrinsic rewards result when situations are created in which the person is motivated by inherently enjoyable aspects of the task (Manz & Neck, 1999). Natural rewarding activities help to create feelings of increased competence, self-control, self-determination and purpose (Manz, 1986; Manz & Neck, 1999). There are two natural reward strategies. The first includes integrating more pleasant features into a given activity or task, so that it becomes more naturally rewarding, like changing the work environment to make it more enjoyable. The second involves the shaping of perceptions by moving one's focus away from the unpleasant features and refocusing on the rewarding aspects of the job or task (Manz

& Neck, 2004; Manz & Sims, 2001). With natural reward strategies employees can increase performance levels by focusing on pleasant aspects of their activities.

Constructive thought pattern strategies aim to adapt functional patterns of habitual thinking (Manz & Neck, 1991). This adaptation may include the identification and replacement of dysfunctional beliefs and assumptions, mental imagery of successful future performance and positive self-talk (Houghton & Neck, 2002). By means of self-analysis, individuals may replace dysfunctional beliefs and assumptions with more constructive ones. Additionally, destructive self-talk should be replaced with more optimistic self-dialogues (Neck & Manz, 1992; Neck & Manz, 1996). Finally, through the use of mental imagery it may be possible to create and rehearse behavioural outcomes before the actual performance (Neck & Manz, 1992). This imagery practice allows individuals who envision successful realisation of an activity before the actual performance to perform more successfully when faced with the actual task (Manz & Neck, 2004).

In simple terms, natural reward strategies are supposed to shape tasks in a way that the individual has fun doing them and constructive thought patterns are supposed to ease the way one thinks about upcoming actions (Neck & Houghton, 2006). However, behaviour-focused strategies are supposed to rather immediately facilitate the management of one's own behaviour. Working in the NWW environment and being confronted with intensified autonomy demands, an enormous amount of self-organisation and the ability to control one's environment efficiently are required. Therefore the present study focuses on self-goal setting and self-punishment as these two behaviour-focused strategies display a powerful way to achieve important work and career goals by controlling one's own behaviour.

1.4.2 Current state of research

Self-leadership poses an alternative to more traditional leadership and organisational perspectives that focus on influence and control through formal hierarchical authority figures. Pearce & Manz (2005) suggest that more traditional forms of leadership, i.e. focusing on one leader having the power, may not encourage optimal creativity and innovation. However, when employees are encouraged to lead themselves and experience influence by making their own decisions, solving problems and identifying opportunities for the future, creativity and innovation are promoted. In a number of studies researchers have observed that creativity is encouraged when individuals and teams operate in a relatively autonomous environment as they experience a sense of ownership and perceive control over their ideas and work processes (e.g. Amabile, Conti, Coon, Lazenby, & Herron, 1996; Bailyn, 1985). Amabile & Gitomer (1984) found that individuals who perceive a choice in how to accomplish a task

produce more creative work than those who perceive little or no choice. In line with this are the results of Carmeli, Meitar, & Weisberg (2006) who detected a significant relationship between self-leadership skills and IWB among 175 Israeli knowledge workers.

Individuals engaging in self-leadership attribute accomplished tasks and work processes more often to themselves (Amabile et al., 1996). In comparison with individuals not engaging in self-leadership this results in higher commitment to their tasks, goals, teams or organisations (Houghton & Yoho, 2005; Manz & Sims, 2001). Moreover, individuals applying self-leadership may experience greater feelings of autonomy and control, resulting in more independent behaviour and decision making (Manz & Sims, 2001). Consequently, self-leadership can lead to more autonomy in the job because superiors may perceive the self-leading individuals as more competent and professional and therefore allow them more freedom to organise and structure their work.

In contrast, individuals who do not actively engage in self-leadership may become more dependent from the guidance of traditional leaders which increases their incapability of independent thought and action (Houghton & Yoho, 2005). Roberts & Foti (1998) discovered in a study with 76 non-exempt employees that high self-leaders were more satisfied when they were allowed greater autonomy and freedom to use their self-leadership skills. In contrast their job satisfaction decreased when they had to work in highly controlled environments. Conversely, low self-leaders appeared to be more satisfied when working in a highly structured environment with clearly defined roles and responsibilities. Furthermore, Neck & Houghton (2006) suggested that the application of self-leadership strategies may result in independence, self-control, innovation and creativity and it was also discovered by Dolbier, Soderstrom, & Steinhardt (2001) that self-leadership relates to less stress. In summary, literature shows that self-leadership represents a leadership style that fosters both innovative behaviour and well being at work, and also stands highly connected to autonomy.

Looking at young professionals, self-leadership could be the strategy they use to deal with increased autonomy at work. They have been growing up in an autonomous environment; therefore it is likely that they hold these strategies naturally. This enables them to handle the freedom of organising their own work and career easily, protecting them from strain and increasing their well being. Furthermore, self-leadership relates to innovation and thus may account for positive effects of increased autonomy. In order for ideas to be promoted and eventually developed into new products (de Jong & Den Hartog, 2008) some amount of self-organisation is required. As innovative behaviour is encouraged by both

autonomy and self-organisation, self-leadership may be the decisive factor why increased autonomy allows young professionals to engage in innovative work behaviour.

1.4.3 Self-goal setting

The specification of goals is a technique of effective behavioural-focused self-leadership. Setting specific goals results in improved performance and reaching these goals (Latham & Yukl, 1975; Locke & Latham, 1990). This in turn acts as a reinforcement leading to further goals in pursuit of organisational objectives (Manz & Sims, 1980). Mahoney & Arnkoff (1979) point out that self-set goals may be even more effective if they focus on behaviour change, are publicly stated and are short ranged instead of distant. Furthermore, behaviour-focused strategies like self-goal setting are likely to foster feelings of self-determination and competence (Manz & Neck, 2004). These are key components of both innovation and creativity (DiLiello & Houghton, 2006) and can reduce emotional exhaustion and depersonalisation (Fernet, Guay, & Senécal, 2004) of which irritation is a predictor (Mohr, 1991).

1.4.4 Self-punishment

The behaviour-focused self-leadership strategy self-punishment, also called self-correcting feedback, consists of negative and destructive self-talk to shape desirable behaviours effectively. However, the excessive use of self-punishment involving habitual guilt and self-criticism should be avoided as it may be detrimental to performance (Manz & Sims, 2001). In fact, the apparent effectiveness of self-reinforcement like self-rewards does not seem to be shared by self-punishment (Manz & Sims, 1980). It might even be that if individuals punish themselves for an idea that fails to solve a problem, they will stop to generate ideas to solve this or future problems, restraining from innovative behaviour (Pearce & Manz, 2005). Furthermore, Fuhrmann & Kuhl (1998) found that individuals punishing themselves have a harder time sticking to their intentions and in a study with college students Zuckerman & Gagné (2003) discovered that self-punishment was associated with greater negative outcomes such as self-handicapping and depression. Therefore, the successful use of self-punishment is an act of balance where the consequences of punishing oneself have to be sufficiently aversive to suppress undesired behaviour yet not so aversive that this behaviour will never be used again (Mahoney & Arnkoff, 1978).

1.5 Theoretical framework: the JD-R model

The job demands-resources model poses a suitable framework to explain the processes young professionals may experience when they enter work life. The JD-R model was

developed in 2001 by Demerouti et al. and explains the relationships between job conditions and well being with an original focus on exhaustion and disengagement. One central assumption of the JD-R model is that every occupation has its own work characteristics that can be associated with strain. Regardless of the job these characteristics can be separated into two categories, namely job demands and job resources (Bakker, Demerouti, & Verbeke, 2004). Job demands are described as physical, psychological, social or organisational aspects of an occupation that constantly require physical or mental effort. Thus, they are associated with physiological and psychological costs such as high work pressure, role overload, emotional demands and poor environmental conditions. (Bakker & Demerouti, 2007; Demerouti et al., 2001). Although job demands are not necessarily negative, they may turn into stressors when they claim too much effort.

Health protecting factors such as resources can keep individuals strong even after they have experienced high degrees of workload. Therefore, job resources are specified by those physical, psychological, social or organisational aspects of an occupation that may (1) be functional in achieving work goals, (2) reduce job demands and related costs, or (3) stimulate personal growth, learning and development (Bakker & Demerouti, 2007; Demerouti et al., 2001). Job resources can be found at an organisational level such as job control, participation in decision-making and task variety but also at an interpersonal and social level such as support from colleagues, peers and family. They can also be found at the level of task, such as performance feedback, skill variety, task significance and autonomy (Bakker et al., 2004; Demerouti et al., 2001). Thus, job resources are important in their own right and of course necessary to cope with job demands (Bakker & Demerouti, 2007).

There are two underlying psychological processes in the JD-R model that explain the development of job strain and motivation. The first one is the health impairment process. According to Hockey (1993), when individuals are exposed to stress or demands they try to achieve performance protection through the mobilisation of sympathetic activation, increased subjective effort, or both. The greater the activation or effort to deal with stress or demands is, the greater are psychological or physiological costs for the individual. The long-term effects of such strategies may be a state of breakdown or exhaustion and the draining of energy (Demerouti et al., 2001). In brief, this energetic process describes that high job demands,, combined with low job resources may exhaust employees' resources and lead to energy depletion and health problems. According to the motivational process in the JD-R model the availability of job resources leads to high work engagement, low cynicism, feelings of organisational commitment and greater performance.

Another important aspect of the JD-R model involves the interaction between job demands and resources, specifically the cushioning effect of job resources. In fact, Bakker, Demerouti, & Euwema (2005) found that job resources may buffer the impact of job demands on job strain, including burnout. When compared with high job demands alone, the combination of high job demands and low job resources led to more emotional exhaustion (Bakker, Demerouti, Taris, Schaufeli, & Schreuers, 2003). Thus, the availability of high job resources can be protective and weaken negative health related effects of high job demands (Bakker & Demerouti, 2007; Bakker et al., 2005). Furthermore, when job resources are present and accompanied by high job demands, they impact even more on work engagement than they would do on their own (Bakker & Demerouti, 2007). According to Diener & Fujita (1995) there are several potential resources which may facilitate the achievement of specific demands. This implies that different demands are likely to be influenced by several resources. Empirical evidence for the interaction effect of job resources and job demands was found in several studies. In an educational setting Bakker et al. (2005) found that job resources like autonomy and feedback for one's performance significantly reduced the negative effect of high workload on burnout.

The proposition that job resources influence motivation, work engagement or predictors of depression when job demands are high can be explained with Hobfoll's (2001) conservation of resources theory (COR). According to COR individuals strive to obtain, retain and protect their resources, which may be of material, social, personal or energetic nature. Stress is understood as the loss of resources and should be avoided (Hobfoll, 2002). In order to prevent the loss of resources, resources have to be invested. Individuals with a greater pool of resources are therefore less vulnerable to losing them. However, gaining and losing resources tends to be cumulative – those who have more resources are more likely to gain more (gain spiral) while those with less resources to begin with are more prone to losing them (loss spiral) (Hobfoll & Shirom, 2001). Additionally, Hobfoll (2001) proposes that the gain of resources is only of moderate importance compared to losing them. However, the capability to mobilise resources is more important after a stress-related resource loss. This led Bakker & Demerouti (2007) to the conclusion that job resources become more salient in the presence of high job demands.

Within the last decade the JD-R model has been tested with various job demands, job resources and outcome variables such as emotional exhaustion (Demerouti et al., 2001) and IWB (Janssen, 2000). However, emotional exhaustion is a long-term process and not expected at job entry alas among professional newcomers of the digital native generation. Hence,

irritation was chosen as an outcome for this thesis as it occurs long before symptoms of depression or emotional exhaustion manifest and can therefore be measured among professional newcomers. IWB was chosen as an outcome because responding innovatively to higher job demands can be conceived as a particular form of coping in occupational settings.

1.5.1 Extensions of the JD-R model – personal resources

One extension made to the JD-R model is the inclusion of personal resources in the model. To understand their role in the JD-R model the definition of personal resources is given beforehand. Personal resources are considered positive self-evaluations that are linked to resilience and refer to an individual's perceived sense of their ability to control and influence their environment successfully, especially during challenging situations (Hobfoll, Johnson, Ennis, & Jackson, 2003). Studies have shown that personal resources are not only related to stress resilience but also exert a positive influence on emotional well being (e.g. Chen, Gully, & Eden, 2001; Pierce & Gardner, 2004). Well researched personal resources are for example optimism, self-efficacy and self esteem (Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2007). The incorporation of personal resources into the JD-R model can be explained with the COR theory by Hobfoll (2001).

According to COR the possession of resources will lead to the creation of further resources, a process called gain spiral. Combined with assumptions from the JD-R model (Bakker & Demerouti, 2007) this means that personal resources in general help to achieve goals easier and are especially important during periods of uncertainty and aversive circumstances (van der Heufel, Demerouti, Bakker, & Schaufeli, 2010). Other important aspects of personal resources are that they can be developed over time, are influenced by significant life experiences and specific personal development interventions or coaching (Luthans, Avey, Avolio, Norman, & Combs, 2006; Lyubomirsky, Sousa, & Dickerhoof, 2006). Furthermore, personal resources can have both affective and cognitive components and just like job resources are often valued in their own right (van der Heufel et al., 2010).

1.5.3 Personal resource: self-leadership

The personal resource adaptation model (van der Heufel et al., 2010) suggests that personal resources may act both as a mediator and a moderator in explaining the relationship between work environment and outcomes. More specifically, when personal resources are included as moderators in the JD-R model, they mainly influence the relationship of job demands and well being. Studies suggest that when employees are confronted with demanding conditions they have an easier time dealing with them when they are equipped

with high personal resources and may even may be protected from negative outcomes such as exhaustion, job dissatisfaction, mental stress or diverse psychological health symptoms (e.g. Salanova, Peiró, & Schaufeli, 2002; Van Yperen & Snijders, 2000; Xanthopoulou et al., 2007).

On the contrary, personal resources link job resources and positive organisational outcomes like work engagement as mediators (Xanthopoulou et al., 2007; Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2009a; Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2009b). This shows that the supply of job resources activates employees' personal resources and makes them feel more in control of their work environment (Xanthopoulou et al., 2007; Luthans et al., 2006).

Contemplating the variety of personal resources, it is notable that the relevance of self-leadership as a moderating and mediating personal resource has not been given much attention. In association with the JD-R model, self-leadership has been regarded as a coping strategy but not a personal resource (van der Heufel et al., 2010). However, comparing the characteristics of self-leadership and personal resources, one can draw the conclusion that self-leadership acts as a personal resource. Personal resources have affective and cognitive components and pose a positive belief system about oneself and the world. Furthermore, they motivate and facilitate goal attainment when confronted with stress or job demands (van der Heufel et al., 2010). Self-leadership styles constitute individual performance-protection strategies in the face of job demands (Hockey, 1993) and allow individuals to successfully manage work stress by creating an active work environment (Lovelace, Manz, & Alves, 2007). Moreover, self-leadership styles include behavioural as well as emotional components which individuals use to motivate themselves to achieve their ambitions (Lovelace et al., 2007). This assumption is in line with findings by Kim (2009) who showed in a study with 297 nurses that self-leadership acts as both a moderator and a mediator between organisational cultures and informatics competency. Thus, in the present study self-leadership is expected to hold the same characteristics as other personal resources.

2. Research question and hypotheses

Professionals entering work life are confronted with the new ways of working, offering them a lot of temporal and spatial flexibility regarding where and when to work. This freedom of work requires an autonomous and self-managed way of working (Demerouti et al., 2014). The increased amount of autonomy is not necessarily considered a blessing but may also be perceived as a strain. Although young professionals expect more autonomy than previous generations (Cennamo & Gardner, 2008) and consider it especially important, they are also prone to depression and anxiety (Twenge & Campbell, 2008). With regards to the JD-R model (Bakker & Demerouti, 2007) which serves as the theoretical framework for this thesis, the question is raised whether intensified autonomy demands need to be considered a demand, or instead a resource for this generation. Nonetheless, however intensified autonomy demands are perceived by this generation, it leaves the question about how young professionals deal with these new demands. Therefore, self-leadership as a personal resource is added to the extended JD-R model in a moderation and mediating role (van der Heufel et al., 2010).

Long-term research has shown that intensified autonomy demands lead to exhaustion and cynicism both of which are components of depression (Kubicek et al., 2014). Irritation, in contrast, can be considered a predictor of depression (Dormann & Zapf, 2002; Höge, 2009), and compared to depression it is more likely to be found at job entry. Based on the health impairment process of the JD-R model (Bakker & Demerouti, 2007) it is therefore assumed that intensified autonomy demands lead to irritation. Thus, the following hypotheses are formulated:

Hypothesis 1a: Intensified job-related autonomy is positively related to cognitive irritation.

Hypothesis 1b: Intensified job-related autonomy is positively related to affective irritation.

Hypothesis 1c: Intensified career-related autonomy is positively related to cognitive irritation.

Hypothesis 1d: Intensified career-related autonomy is positively related to affective irritation.

In view of the motivational process of the JD-R model (Bakker & Demerouti, 2007), intensified autonomy demands are expected to support IWB on the long term. Since the direct relation of job control, respectively autonomy and innovative behaviour has been shown in

several studies (De Spiegelaere et al., 2014; Ramamoorthy et al., 2005), the following hypotheses are derived:

Hypothesis 2a: Intensified job-related autonomy is positively related to IWB.

Hypothesis 2b: Intensified career-related autonomy is positively related to IWB.

Several studies have shown that job resources are necessary to successfully cope with existing job demands (e.g. Demerouti et al., 2001; Xanthopoulou et al., 2007). Personal resources as moderators may form a buffer against adverse impact of job demands. Thus, it was hypothesised that both self-goal setting and self-punishment as personal resources moderate the relationship between intensified autonomy demands and irritation.

Hypothesis 3a: Self-goal setting moderates the relationship between intensified job-related autonomy demands and cognitive irritation.

Hypothesis 3b: Self-goal setting moderates the relationship between intensified job-related autonomy demands and affective irritation.

Hypothesis 3c: Self-goal setting moderates the relationship between intensified career-related autonomy demands and cognitive irritation.

Hypothesis 3d: Self-goal setting moderates the relationship between intensified career-related autonomy demands and affective irritation.

Hypothesis 4a: Self-punishment moderates the relationship between intensified job-related autonomy demands and cognitive irritation.

Hypothesis 4b: Self-punishment moderates the relationship between intensified job-related autonomy demands and affective irritation.

Hypothesis 4c: Self-punishment moderates the relationship between intensified career-related autonomy demands and cognitive irritation.

Hypothesis 4d: Self-punishment moderates the relationship between intensified career-related autonomy demands and affective irritation.

Personal resources as mediators link job resources with positive organisational outcomes (Xanthopoulou et al., 2007; Xanthopoulou et al., 2009a; Xanthopoulou et al., 2009b). This might be because the existence of personal resources changes how employees perceive their environment (Judge, Bono, Erez, & Locke, 2005), directing their focus towards the job resources and therefore leading to positive work outcomes. The mediating effect of self-leadership on competency has been shown by Kim (2009), accordingly the final hypotheses in this thesis are:

Hypothesis 5a: Self-goal setting mediates the relationship between intensified job-related autonomy demands and IWB.

Hypothesis 5b: Self-goal setting mediates the relationship between intensified career-related autonomy demands and IWB.

Hypothesis 6a: Self-punishment mediates the relationship between intensified job-related autonomy demands and IWB.

Hypothesis 6b: Self-punishment mediates the relationship between intensified career-related autonomy demands and IWB.

Concluding, this thesis hopes to contribute to two neglected fields of research. Firstly, the perception of autonomy demands by professional newcomers is assessed with regard to irritation and IWB. Secondly, the role of self-leadership as a moderating as well as mediating personal resource for this target group is explored. An overview over the study model is given in Figure 1.
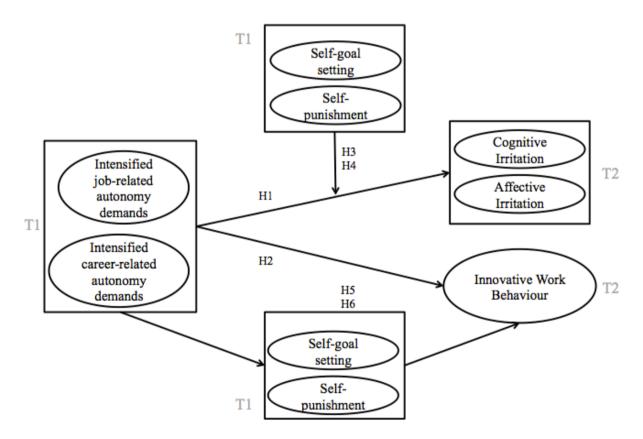

Figure 1. Research model

3. Method

This diploma thesis was embedded in the context of a prize-winning research project (awarded by the Austrian Economic Chamber) about strategies for successfully entering work-life in the service sector, with special focus on young professionals. The present study is part of the conducted longitudinal study; cross-section results of the first time of measurement were presented at the 11th Congress of the Austrian Psychological Association by the author[1]. In the following section, the procedure, samples, materials, and the data analysis are explained in detail.

3.1 Procedure and sample

Taking into consideration the dropout rate of approximately 50% for longitudinal study designs, it was planned to raise 500 datasets for the first measurement in order to gain a final sample of $N = 250$ after a six-month time lag. The sample size was chosen because within the project more than eleven constructs were investigated and with 250 samples it is still possible to conduct meaningful statistical analyses (Bortz & Döring, 2006). To achieve the required sample size the data collection took place in collaboration with Respondi Online Panel. Respondi provides access panels for research projects to which participants voluntarily sign up to. They were incentivised by bonus points per survey, which they could trade in for a variety of rewards.

The online questionnaire was composed with the online survey software Unipark and then sent to Respondi for distribution to the sample. It was crucial to be able to match the participants after they completed both waves with a time lag of six months in between the measurements. A personal code system was developed where participants were instructed to enter four different numbers and letters, namely the father's month of birth, the mother's birth year, the first letter of the father's first name and the first letter of the mother's first name. During statistical analysis, these were combined to an individual code for each survey. Thus, it was possible to match the data of the participants that had taken part in both waves through identical individual codes.

To ensure the sample's quality matched the study's requirements, screen-out questions were integrated at the beginning of the questionnaire. These prevented all persons from answering the questionnaire that did not meet the following sample criteria: aged between 16-36 years, and working at least 20 hours a week in the service sector. A filter was built in to

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[1] Bunner, J., Gerdenitsch, C., Scheel, T., & Korunka, C. (2013). *Ist Selbstführung eine geeignete Umgangsstrategie bei Autonomieanforderungen? Eine Studie mit Berufseinsteigern.* Oral presentation, 11. Tagung der Österreichischen Gesellschaft für Psychologie (ÖGP). Wien.

guarantee an equal distribution of people working in Germany and Austria. A 10% limit was established for people older than 32 years to ensure the main sample would be meeting the criteria of the digital native cohort (Prensky, 2001) but also to have a small control group.

3.1.1 Cross-sectional sample T1

The first survey (T1) took place from the 21st – 30th October 2013. The number of valid data was $N = 658$ (samples who contained more than 10% missing values of relevant variables for this study were excluded). Sociodemographic data was provided from 657 participants (one missing), however all participants submitted their age. Information about leading positions was submitted by 652 participants (six missings) and information about employment status by 651 participants (seven missings).

The sample consisted of 360 (54.7%) female and 297 (45.1%) male persons with an average age of 29 years, ranging from 18-35 years ($SD = 3.9$). The educational level was very high, with 233 (35.5%) possessing a university degree, 174 (26.4%) having graduated from high school, 63 (9.6%) having graduated from secondary school, 28 (4.3%) having graduated from technical school, and 143 (21.7%) having completed vocational education. Only one person was without a school-leaving qualification and 15 (2.3%) had completed compulsory school. The sample was composed of 352 (53.5%) persons from Germany, 293 (44.5%) from Austria and 12 (1.8%) from other, not specified countries. Considering the employment status, the majority of the sample, 556 (84.5%) persons, was full time employed. 63 (9.6%) were part-time employed, 26 (4%) were self-employed, and 6 (0.9%) marked "other" when asked for employment. Of the sample, the average tenure was 3.67 years ($SD = 3.3$), the participants worked an average of 41.6 ($SD = 9.4$) hours per week and 123 (18.7%) persons reported to hold a leading position.

3.1.2 Cross-sectional sample T2

The second wave (T2) took place from 28th April – 16th May 2014 and gained a valid sample of $N= 560$ persons. Again, samples with more than 10% missing values that were of particular relevance for the study were excluded. All participants shared their gender, educational level, weekly working hours and their position. Only 559 shared their age and nationality and 558 shared their employment status.

The sample contained 298 (53.2%) females and 262 (46.8%) males; they were 29.9 years old on average, ranging from 17-42 years ($SD = 4.1$). Again, the educational level was rather high, with 218 (38.9%) possessing a university degree, 136 (24.3%) having graduated from high school, 51 (9.1%) having graduated from secondary school, 27 (4.8%) having

graduated from technical school and 115 (20.5%) having completed vocational education. Two persons were without a school-leaving qualification and 11 (2.0%) had completed compulsory school. Further, the sample was composed of 286 (51.1%) Germans, 266 (47.5%) Austrians and seven (1.3%) of another not specified origin. The sample worked an average of 39.9 hours per week ($SD = 11.9$) and 110 (19.6%) participants held a leading position. Of the sample, 464 (82.9) were full-time employed, 65 (11.6) were part-time employed, 22 (3.9%) reported to be self-employed and 7 (0.4%) answered to be in an "other" form of employment. The average tenure of this sample was 3.96 years ($SD = 9.5$).

3.1.3 Matched longitudinal sample

The final sample contained the data of $N = 236$ participants, who had answered both, the T1 and T2 questionnaire, and could be matched. Sociodemographic data was provided from all 236 participants, leading to a sample composed of 132 (55.9%) females and 104 (44.1%) males, who were at an average age of 29 years, ranging from 20 – 36 years ($SD = 3.5$). As expected, the sample was very well educated, 101 (42.8%) possessed a college degree, 56 (23.7%) graduated from high school, 17 (7.2%) graduated from secondary school, 12 (5.1%) graduated from technical school and 44 (18.6%) completed vocational education and 6 (2.5%) had completed compulsory school. Of the sample, 134 (56.8%) participants originated from Germany, 99 (41.9%) from Austria and three (1.3%) from other countries. Observing the employment status, there were 202 (85.6%) full-time employed persons, 24 (10.2%) part-time employed participants, six (2.5%) self-employed and four (1.7%) with other employment status. 42 (17.8%) participants reported of holding a leading position and the samples' average working time per week were added up to 40.8 hours per week ($SD = 7.5$). The tenure of the sample accounted for an average of 4.9 ($SD = 4.6$) years of work experience.

3.2 Materials

Both questionnaires started with screen-out questions, covering age, weekly working hours, service sector and the work country. If participants were between 16-36, worked at least 20 hours a week in the service sector and worked in Germany or Austria, they passed on to enter their individual code which could not be skipped. They were then forwarded to the actual items of the questionnaire. The T1 questionnaire consisted of 130 items, the T2 questionnaire of 114 items. The item count relevant for this study in both questionnaires was 37; the difference between needed and provided items is due to its embedment within the greater research project. Both times, the survey started with questions about intensified

autonomy demands, subsequently followed by questions about self-leadership and IWB and closing with the irritation scale. Following, participants were asked to give their sociodemografic information.

Intensified autonomy demands were measured with two subscales of the IDS-identification of job-demands scale by Kubicek et al. (under review). This newly developed instrument assesses work intensification and intensified job demands arising from accelerated change. For *intensified job-related autonomy demands* the scale contained five items, an exemplary item is "In the last five years...oneself increasingly has to determine the way to do the work". The *intensified career-related autonomy demands* scale contained three items, "In the last five years…one is increasingly demanded to maintain one's attractiveness for the job market (e.g. through advanced education, networking, etc.)." is one example. In regard to the expected low tenure of the sample for both questionnaires T1 and T2, the adjustment "If you work less than 5 years, please consider the amount of time you have been working there" was made. The answers were ranging from 1 (*NO, not at all*) to 5 (*YES, completely*).

The self-leadership styles *self-goal setting* and *self-punishment* were raised with the RSLQ-D, the German version of the revised self-leadership questionnaire (Andreßen & Konradt, 2007). Each subscale consisted of three items, exemplary for self-goal setting is "I work towards specific goals I have set for myself" and exemplary for self-punishment is "I tend to be tough on myself in my thinking when I have not done well on a task." The answers had to be given on a 5-point Likert scale, ranging from 1 (*not at all*) to 5 (*always*).

Innovative work behaviour was measured with the IWB – IWB questionnaire from de Jong & den Hartog (2010) to determine the individuals' self-rated innovation at the workplace which is composed of five items for innovative behaviour and five items for innovative output. An exemplary item for innovative behaviour is "At your work…how often do you contribute to the implementation of new ideas?" and for innovative output "At your work…how often do you generate original solutions for problems?". Responses could vary from 1 (*never*) to 5 (*always*).

Cognitive and *affective irritation* were measured with the irritation scale (Mohr, Rigotti, et al., 2005) that is specifically designed to assess psychological strain in the context of work. One exemplary item out of three for the cognitive irritation scale is "Even at home I often think of my problems at work", an exemplary item from the five-item affective irritation scale is "I react irritated although I do not want to". Answers to the eight statements were given on a 7-point Likert scale, ranging from 1 (*not at all*) to 7 (*completely*).

3.3 Data analysis

Prior to the main data analysis, exploratory factor analysis was performed for the respective items of the scales. This was relevant for all constructs. It had to be ensured that in this sample intensified job- and career-related autonomy demands would not load on a single factor but two. The same was valid for the self-leadership styles self-punishment and self-goal setting as well as the cognitive and affective irritation. It also had to be tested that the two dimensions innovative behaviour and innovative output were reducible to one single factor, namely IWB.

The mode for analysing the longitudinal main effects of intensified autonomy demands on irritation and IWB was hierarchical regression with controlling of the dependent variable from the first wave. Further control variables were gender and education. Causal effects were assumed when in addition to the main effects, the R^2 change was significant. In order to test the mediation and moderation effects of self-goal setting and self-punishment, regression analyses were run with the PROCESS-macro (Hayes, 2012) for SPSS.

4. Results

At first, the reliabilities of the scales and descriptive statistics are reported. Secondly, the results of the hypothesis testing are presented. Concluding, the research model with the supported hypotheses is portrayed.

4.1 Reliabilities and intercorrelations

The reliabilities of the original scales (see 3.2 Materials) were continuously good consistent for both waves. Two instruments showed a Cronbach's α above .70, which is defined as the lower limit for an acceptable reliability (Field, 2009), it can be assumed that these scales were reliable instruments for this sample. Seven scales exceeded .80 which is an indicator for good reliability (Bortz & Döring, 2006). The exact reliabilities for this study can be found in Table 1.

Table 1. Reliabilites of scales

Scale	Cronbach's α T1	Cronbach's α T2	Nr. of items
Intensified job-related autonomy demands	.78	.85	5
Intensified career-related autonomy demands	.79	.81	3
Self-goal setting	.82	.82	3
Self-punishment	.87	.87	3
Cognitive irritation	.89	.91	3
Affective irritation	.90	.91	5
Innovative Behaviour	.90	.89	4
Innovative Output	.87	.86	5
Innovative Work Behaviour IWB	.93	.93	9

Means, standard deviations and Pearson product-moment correlation coefficients for this study's variables as well as the control variables are presented in Table 1 for the longitudinal correlations in the graphics below and for both cross-sectional samples. The decision for the control variables followed the suggestions made by Becker (2005) and James (1980) after which control variables should meet three conditions for inclusion in a study: strong expectations that the variable is related with the dependent and independent variable (see Table 2), and that it is not more central than the hypothesised variables. Thus, gender and education were chosen as control variables.

Table 2. Descriptive statistics and correlation coefficients ($N = 236$)

	Variables	MW	SD	1	2	3	4	5	6	7	8	9	10	11
1	Gender	1.43	.49											
2	Education	7.59	2.84	.01										
3	$_{T1}$Intensified job-related autonomy demands	3.58	.71	-.11	.08									
4	$_{T1}$Intensified career-related autonomy demands	3.85	.82	-.09	.10	.54**								
5	$_{T1}$Self-goal setting	3.46	.80	-.09	.08	.32**	.22**							
6	$_{T1}$Self-punishment	3.71	.88	-.22**	.08	.31**	.36**	.43**						
7	$_{T1}$Cognitive Irritation	3.50	1.57	-.05	.21**	.21**	.15**	.25**	.34**					
8	$_{T1}$Affective Irritation	3.20	1.39	-.11	.05	.17**	.12	.09	.19**	.62**				
9	$_{T1}$Innovative Work Behaviour	4.30	1.41	-.03	.08	.37**	.21**	.35**	.33**	.35**	.22**			
10	$_{T2}$Cognitive Irritation	3.53	1.61	-.12	.19**	.13*	.14*	.19**	.32**	.73**	.52**	.20**		
11	$_{T2}$Affective Irritation	3.16	1.41	-.14*	.05	.06	.11	.08	.17**	.39**	.67**	.08	.62**	
12	$_{T2}$Innovative Work Behaviour	4.31	1.08	-.05	.10	.35**	.19**	.33**	.34**	.32**	.17**	.69**	.30**	.15*

Note: Gender (1 = female, 2 = male), *p < .05, **p < .01
Note: Education (1 = compulsory school, 3 = technical school, 4 = high school, 7 = secondary school, 8 = no degree, 9 = vocational education, 10 = university degree)

4.2 Hypothesis testing

Hypotheses were analysed with hierarchical regression analyses. Prior to this, the residual plots of the presented regression analyses were screened for sufficient fulfilment of assumptions of linearity, normal distribution of residuals and homoscedasticity. These criteria were met for all samples, namely T1, T2 and the matched sample. To identify possible multicollinearity, the variance inflation factor (VIF) and tolerance were used as indicators and compared with the critical values of 10 for the VIF and 0.2 for the tolerance (Field, 2009). The VIF values did not exceed 10 and the tolerance stayed below 0.2, therefore the possibility of multicollinearity for all samples was ruled out.

4.2.1 Main effects of intensified autonomy demands on irritation (H1a-d)

Hypothesis H1a and hypothesis H1c suggested a positive effect of intensified job-related autonomy demands and intensified career-related autonomy demands on cognitive irritation. The results are depicted in Table 3. In a first step, the control variables gender and education were included into the regression model. Step one showed significant effects of education ($p = .00$), which was negligible for step two of the regression.

Table 3. Hierarchical regression analyses hypothesis H1ab ($N = 236$)

	B	SE B	β	p
Step 1				
Constant	3.29	.41		.00
Gender	-.41	.21	-.13	.05
Education	.11	.04	.19	.00
Step 2				
Constant	1.27	.50		.01
Gender	-.28	.15	-.09	.06
Education	.02	.03	.04	.40
$_{T2}$Cognitive Irritation	.75	.05	.72	.00
$_{T1}$Intensified job-related autonomy demands	-.16	.12	-.07	.19
$_{T1}$Intensified career-related autonomy demands	.12	.10	.06	.27

Note: $R^2 = .052^{***}$ for Step 1 ($p < .01$), $\Delta R^2 = .543^{***}$ for Step 2 ($p < .001$)

In the second step, cognitive irritation of the first wave was introduced as well as intensified job- and career-related autonomy demands. Contrary to prior expectations, intensified job-related autonomy demands did not explain a significant proportion of the variance on the regression model with cognitive irritation (β = -.07, p = .19). Likewise, intensified career-related autonomy demands did not have a significant effect on cognitive irritation (β = .02, p = .61). Hence, hypotheses H1a and H1c were rejected; intensified job- and career-related autonomy demands are no significant predictors of cognitive irritation for professional newcomers.

Hypothesis H1b and hypothesis H1d assumed a positive relation of intensified job- and career-related autonomy demands and affective irritation. Detailed results for these regression analyses are displayed in Table 4. As before, gender and education were entered as control variables to the regression model in the first step, with gender having a significant effect (p = .03). Secondly, affective irritation of the first wave and intensified job- and career-related autonomy demands were added to the model. Gender no longer showed a significant effect in the regression model. The results showed no significant relation of intensified job-related autonomy demands to affective irritation (β = -.11, p = .07) and neither intensified

Table 4. Hierarchical regression analyses hypotheses H1bd (N = 236)

	B	SE B	β	p
Step 1				
Constant	3.53	.37		.00
Gender	-.40	.18	-.14	.03
Education	.03	.03	.06	.40
Step 2				
Constant	1.65	.49		.00
Gender	-.21	.14	-.07	.14
Education	.01	.02	.02	.69
$_{T2}$Affective Irritation	.67	.05	.67	.00
$_{T1}$Intensified job-related autonomy demands	-.21	.11	-.11	.07
$_{T1}$Intensified career-related autonomy demands	.14	.09	.08	.16

Note: R^2 = .023*** for Step 1 (p < .01), ΔR^2 = .459*** for Step 2 (p < .001)

career-related autonomy demands (β = -.08, p = .16). Thus, hypotheses H1b and H1d were no longer supported, as neither intensified job-related nor intensified career-related autonomy demands were significantly related to affective irritation.

4.2.2 Main effects of intensified autonomy demands on IWB (H2ab)

A positive relationship between intensified job-related autonomy demands and IWB was suggested in hypothesis 2a. In a first step, the control variables gender and education were introduced in the regression model. Secondly, the IWB and the predictor intensified job-related autonomy demands were added to the model. The regression model showed a significant relationship between intensified job-related autonomy demands and IWB (β = .10, p = .049). A causal effect may be assumed because the R^2 change was significant (ΔR^2 = .483, p = .000). Hence, hypothesis H2a was accepted. Detailed results are portrayed in Table 5.

Table 5. Hierarchical regression analysis hypothesis H2a (N = 236)

	B	SE B	β	p
Step 1				
Constant	6.16	.28		.00
Gender	-.10	.14	-.05	.46
Education	.04	.03	.10	.11
Step 2				
Constant	1.01	.35		.00
Gender	-.04	.10	-.02	.72
Education	.02	.02	.04	.36
$_{T2}$Innovative work behaviour	.62	.05	.66	.00
$_{T1}$Intensified job-related autonomy demands	-.14	.08	.10	.05

Note: R^2 = .013 for Step 1 (p < .01), ΔR^2 = .483*** for Step 2 (p < .001)

Hypothesis 2b proposed a positive effect of intensified career-related autonomy demands on IWB. Again, the control variables gender and education were entered first into the regression model and in a second step IWB and intensified career-related autonomy demands. There was no significant relationship between intensified career-related autonomy

demands and IWB ($\beta = .05$, $p = .33$); hence hypothesis H2b was dismissed. The results are imaged in Table 6.

Table 6. Hierarchical regression analysis hypothesis H2b (N = 236)

	B	SE B	β	p
Step 1				
Constant	4.16	.28		.00
Gender	-.10	.14	-.05	.46
Education	.04	.03	.10	.11
Step 2				
Constant	1.22	.35		.00
Gender	-.05	.10	-.02	.64
Education	.02	.02	.04	.36
T2Innovative work behaviour	.65	.05	.68	.00
T1Intensified career-related autonomy demands	-.06	.06	.05	.33

Note: $R^2 = .013$ for Step 1 (p < .01), $\Delta R^2 = .476^{***}$ for Step 2 (p < .001)

4.2.3 Moderator effect of self-goal setting on irritation (H3a-d)

Self-goal setting did not significantly moderate the relations between intensified autonomy demands and cognitive or affective irritation. Therefore, hypotheses H3a, H3b, H3c and H3d had to be dismissed.

4.2.4 Moderator effect of self-punishment on irritation (H4a-d)

There was no significant moderating effect of self-punishment on the relationship of intensified autonomy demands and cognitive or affective irritation. Hence, hypotheses H4a, H4b, H4c and H4d were no longer supported.

4.2.5 Mediation effect of self-goal setting on IWB (H5ab)

Self-goal setting as a personal resource was hypothesised as a mediator variable between intensified autonomy demands and IWB. The mediation was only analysed for intensified job-related autonomy demands, as there was a significant relation with IWB (see 4.2.2 Main effects of intensified autonomy demands on IWB (H2ab)). Both, the direct and

indirect effects were not significant for self-goal setting as a mediator. Therefore, the mediation of self-goal setting on IWB could not be confirmed and hypotheses H5a and H5b were rejected.

4.2.6 Mediation effect of self-punishment on IWB (H6ab)

It was suggested that self-punishment as a personal resource acted as a mediator variable between intensified autonomy demands and IWB. For logical reasons (see 4.2.2 Main effects of intensified autonomy demands on IWB (H2ab)), the mediation analysis was not run for intensified career-related autonomy demands but only for intensified job-related autonomy demands. The direct effect made no significant contribution to the mediation model. Hence, the mediation of self-punishment on IWB could not be confirmed and hypotheses H6a and H6b were discarded.

4.3 Research model with supported hypothesis

After testing the proposed six hypotheses, the original research model (see 2. Research model and hypotheses) was reduced dramatically. Full support was found for the causal relation of intensified job-related autonomy demands and IWB, namely hypotheses H2a. Illustrated in Figure 2 is the remaining model.
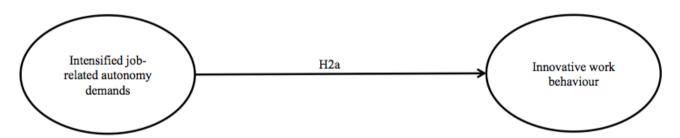

Figure 2. Research model with supported hypothesis

5. Discussion

5.1 Summary of results

This diploma thesis investigated the effects of intensified (job- and career- related) autonomy demands on IWB and irritation for professional newcomers. Using the JD-R model (Bakker & Demerouti, 2007) as theoretical framework, both the energetic and the motivational process were examined. Furthermore, with regard to the expansion of the JD-R model by Xanthopoulou et al. (2007), who included personal resources as moderators in the health impairment process and as mediators in the motivational process, this study tested the role of self-leadership as personal resource. In detail, the effect of intensified job- and career-related autonomy demands on IWB and cognitive and affective irritation was considered, as well as the moderating and mediating effect of the self-leadership strategies self-goal setting and self-punishment. Essential characteristics of the study are the longitudinal, two wave design with a six months lag and that participants were recruited via an online research panel. With regard to the target sample, only participants aged from 16 to 36 and who worked at least 20 hours per week were considered. The present study comprises four main findings:

Firstly, the energetic process of the JD-R model (Bakker & Demerouti, 2007), i.e. the negative impact of job demands on cognitive and affective irritation for professional newcomers, was tested with a hierarchical regression analysis. Intensified job- and career-related autonomy demands were incorporated as job demands. Contradictory to hypotheses H1abcd, the results showed no significant effect of intensified job- and career-related autonomy demands on irritation. The findings indicate that professional newcomers in this sample were not negatively impacted by intensified autonomy demands regarding their career or job on the long term. This stands in contrast to recent findings from Kubicek et al. (2014) who conducted a longitudinal study with 591 nursing employees and found that too much job control (similar to autonomy demands) lead to irritation. These contradictory findings may be interpreted by the specific characteristics of the professional newcomers. Although intensified autonomy demands clearly emphasise the burdening effect of too much autonomy, research suggests that professional newcomers prefer high amounts of job-related autonomy. Digital natives, respectively Millennials consider job-related autonomy a key factor for their well-being, staying in the organisation and productivity (Herzberg, 1987; Holt et al., 2012) and have been encouraged to autonomous behaviour from early on (Twenge & Campbell, 2008). Thus, intensified job-related autonomy demands may just pose the right amount of autonomy for professional newcomers to feel comfortable when entering work life. Furthermore, it has

to be taken into consideration that at job entry the amount of autonomy may not be as high as after a few years on the job. Although it may be stressful to get used to a new work environment, when starting in a new job professional newcomers may not have as many tasks right from the start; it is more likely that they have to prove themselves to earn more responsibilities. This may lead to professional newcomers greeting every further bit of autonomy enthusiastically, even considering it a sign of trust from their superiors, rather than a burden.

Although young professionals were expected to experience feelings of irritation due to intensified career-related autonomy demands on the long-term, this did not show in the results. One explanation may be that because they just recently started a new job, they have stopped career planning for now and will not start planning it again unless they decide to change their workplace. Therefore worrying about their career is something they have just put aside and ergo it cannot have a negative impact on them. Furthermore, this sample is highly educated and it is possible that throughout their education they have already been taught how to plan a career, how to network and how to stay attractive for future employers. Dealing with intensified career-related autonomy demands is possibly just another aspect of work-life they are already capable of managing. However, there is also the aspect that according to Marston (2007) building a career is not a primary motivator for most of the Millennials. This could lead to less interest and motivation when it comes to planning one's career, leading to less strain. Furthermore, for this generation it should be taken into consideration that career planning possibly mainly happens online via social networks and online research about possible employers. This could explain why the results showed no irritation, as professional newcomers would experience this demand in their natural habitat – the Internet – not feeling particularly stressed out by something they have been doing since early childhood.

However, it should also be considered that the IDS for measuring intensified autonomy demands is designed to collect feelings of too much autonomy over the past five years, opening the items with the sentence "*Within the past five years, one increasingly has to…*". For this study the opening sentence was adjusted to the likely tenure of professional newcomers, asking them to consider the time they have been working at their present position if it was less than five years. On the one hand, little experience of intensified autonomy demands may not be detected well by this scale or on the other hand it is possible that it takes approximately five years to register a lot of autonomy as a demand which is negatively influencing one's personal well-being.

As seen in the previous results, it is yet unclear whether intensified autonomy

demands are stressful to professional newcomers. Therefore beneficial effects of autonomy demands, i.e. the positive impact of job demands on IWB were investigated with intensified job- and career-related autonomy demands incorporated as job demands. The hierarchical regression analysis showed mixed results. According to hypothesis H2a intensified job-related autonomy demands had a significant long-term impact on IWB, however intensified career-related autonomy demands did not, therefore hypothesis H2b was rejected. The results for the positive relation of intensified job-related autonomy demands and IWB are in accordance with findings from the other studies that found a relation between autonomy and IWB (De Spiegelaere et al., 2014; Ramamoorthy et al., 2005). Furthermore, findings saying that Millennials consider autonomy a factor that makes them more creative and innovative (Holt et al., 2012) are also supported. Additionally, the present study emphasises that even over time young professionals seem to thrive from autonomy, leading to increased innovative behaviour and innovative output at work.

In contrast, intensified career-related autonomy demands showed no significant relation with IWB. There may be various explanations for this result. For example by the time the participants were partaking in this study, they have already entered their new job. Young professionals are no longer on the outlook for a job, therefore not experiencing the pressure of autonomously managing their career as they have just successfully concluded it. Another interpretation may be that even if the professional newcomers had experienced intensified career-related demands, this would not necessarily be reflected on their IWB. Although worrying about one's career may take up cognitive or emotional resources, it may not be directly connected to work processes that require innovative ideas or actions, such as optimising work processes or creating a new product.

Thirdly, in relation with the energetic process of the JD-R model, it was expected that self-leadership acted as a personal resource. More precisely, hypotheses H3a-d and H4a-claimed that self-goal setting and self-punishment moderated the relationship of intensified job- and career-related autonomy demands and cognitive and affective irritation. Contrary to the author's expectations none of the hypotheses was supported by the data. There are no comparable studies that may have investigated the moderating effect of self-leadership in the long term for comparison. One possible explanation is that self-goal setting and self-punishment did not provide sufficiently to the stressor – resource – strain match. According to de Jonge & Dormann (2006) resources in long-term studies are less likely to moderate the stressor – strain relationship if only the resources and the stressors match, only the resources and the strain match or only the stressors and the strain match. They are least likely to

moderate if there is no match among stressors, resources and strains at all. Transferring these findings to the present study, one could argue that there were only limited stressors – resource – strain matches. However, self-punishment matches on the emotional level with affective irritation and self-goal setting with cognitive irritation on a cognitive level, but is rather unlikely to match those over cross. Furthermore, due to little research on the field of intensified job- and career-related autonomy demands it is difficult to say whether their impact is higher on an emotional or cognitive level. An additional interpretation of the results regarding the content is that self-leadership may not show its actual impact when measured in single strategies. It may not be of relevance what specific strategy is used but instead that self-leadership strategies are used at all.

Finally the fourth finding refers to the mediating role of self-leadership in the motivational process of the JD-R model (Bakker & Demerouti, 2007), precisely self-goal setting and self-punishment as mediators of the relationship of intensified job- and career related demands and IWB (H5ab, H6ab). There was no empirical evidence to support these hypotheses; self-goal setting and self-punishment are not necessary to explain the relationship between intensified autonomy demands and IWB. As there was no main effect between intensified career-related autonomy demands and IWB to begin with, it is only logical that no mediation was found. Since the Personal Resources Adaptation Model (van der Heufel et al., 2010) is relatively new, studies confirming the mediating role of self-goal setting and self-punishment in this context are still lacking. One methodological explanation for these results is that long-term mediating effects are better discovered with a full three-wave-panel design.

Although self-leadership meets the criteria for personal resources theoretically, it could not be integrated in the Personal Resource Adaptation Model (van der Heufel et al., 2010) as well as expected. On the one hand it may be that self-leadership by itself is not strong enough to link job resources such as intensified job-related autonomy with positive outcomes such as IWB. On the other hand, for professional newcomers it is also possible that intensified job-related autonomy demands do not pose high or strong enough job resources to activate personal resources that would give them higher feelings of control over their work environment.

5.2 Strengths and Limitations

As in every study, the presented results have to be viewed in the light of strengths and limitations. The primary strength of this study is that it is one of the first studies examining both positive and negative effects of increased autonomy on digital natives. Additionally, the conceptualisation of intensified autonomy demands as demands and resource is new but

theoretically well embedded. Another important benefit is the longitudinal design with a six-month time lag, testing for both the independent and the dependent variable at both times, which allows for a causal interpretation of the results. However, even with longitudinal studies one has to be careful about stating causal relationships; because of reciprocal effects it can hardly be shown if it is indeed the stressor influencing the strain or if assumed results are actually interaction effects (de Lange, Taris, Kompier, Houtman, & Bongers, 2004). Using an Internet-based survey enabled an asynchronous, locally independent, documentable and economic implementation (Batinic, 2003) which allowed for a neat sample of young professionals entering work life in Germany and Austria. A further strength of the study is the extension of the JD-R model by incorporating self-leadership as a personal resource which has rarely been done before.

However, there is room for improvement. The present study specifically focused on professional newcomers, belonging to the cohort of the digital natives, Millennials or Generation Y. To secure the statements made about the professional newcomers it would have been beneficial to have a control group of higher age included. There is empirical evidence that "older" people do indeed consider intensified autonomy a demand and as a result experience feelings of irritation (Kubicek et al., 2014). Considering the sample it has to be acknowledged that the participants were highly educated, thus results are limited to well-educated knowledge workers. Furthermore, generalizability to other cohorts is limited as the sample only consisted of professional newcomers of the digital natives generation.

Another limitation regards the data collection with an online panel. There is the potential danger that regular participants of research panels get used to answering questionnaires and no longer answer "naive" (Bortz & Döring, 2006). The bonus point system used by the specific online panel in the present study supplies incentives for the members of the panel, which leads to some participants rapidly clicking their way to the questionnaire in order to collect their bonus points with as little effort as possible. Unfortunately, there is no way of supervising the proper completion of the survey when the participant is located somewhere at a computer; therefore scanning the quality of the data by means of strict selection criteria is indispensable. This shows two other disadvantages of online studies. First, there is no way of monitoring that the participants are in a quiet, comfortable environment that allows them to fully concentrate on answering the survey. Second, conducting online surveys leads to an uncontrolled selection of participants as only people feeling comfortable using the Internet and sharing their personal data online will participate in such panels.

Another limitation regarding the longitudinal design is the loss of data over time. Besides the expected amount of dropout that occurs in every study with more than one time of measurement (approximately 50% from wave one to wave two), in the present study it was especially difficult to obtain at least half of the data collected in the first wave. The dropout rate from the online panel turned out to be higher than expected, as participants had signed off the panel or were just not contactable anymore, leading to a high discrepancy between the sample size of the first wave and the matched longitudinal sample.

One more limitation can be found when looking at the construct self-leadership. Contrary to expectations the self-leadership styles did neither act as a moderator nor as a mediator. As there is a wide range of behaviour focused self-leadership strategies, it is possible that self-goal setting and self-punishment were unsuitable for this research. It is even thinkable that behaviour-focused self-leadership strategies in general are inapplicable for this topic and it would be beneficial to take a closer look at natural reward strategies or constructive thought pattern strategies (Neck & Houghton, 2006).

For the sake of completeness it has to be mentioned that it is also popular to analyse long-term data with structural equation models (SEM). SEM especially allows for the testing of hypotheses that include latent characteristics and their relation to each other and other variables. However, even SEM does not allow concluding or "proving" causal relationships, it simply shows that a tested model is not consistent with reality, therefore it has to be falsified (Bortz & Döring, 2006). Furthermore, the use of SEM is only advised if the data and sample size is appropriate and the user has sufficient knowledge (Nachtigall, Kroehne, Funke, & Steyer, 2003). As the requirements for SEM were not fully met, using hierarchical regression analysis for the present study was an optimal choice.

5.3 Contributions and implications for future research

In the last couple of years researchers and practitioners started puzzling about the generation born in a time of rapid technological advancement which seems to no longer have the same work values as their preceding generations (Cennamo & Gardner, 2008). The findings regarding Millennials' expectations for their future employers are mainly based on studies of Western countries (e.g. the US, UK, Australia) and were conducted during times of economic upheaval. The present study adds empirical findings about this generation, addressing professional newcomers' issues in Germany and Austria. Additionally, this study aimed to shed some light on whether intensified autonomy demands have harmful or beneficial effects on this generation and how self-leadership is involved in this relation. It was revealed that intensified autonomy does not act as a demand leading to irritation but promotes

IWB among professional newcomers. This may be interesting for practitioners when designing work environments for attracting this generation. Furthermore, this is one of the first studies investigating the self-leadership strategies self-goal setting and self-punishment regarding their role as a personal resource in the Personal Resource Adaptation Model (van der Heufel et al., 2010). Although results showed no moderator or mediator effect, this does not have to deny the existence or importance of self-leadership as a personal resource.

Several implications for future research can be made. Because the present study lacked a control group it would be beneficial to implement this in the future. There is already empirical evidence that for elder generations intensified autonomy demands are an issue (Kubicek et al., in print) and a comparison between generations could give insightful information about how differently they experience their working conditions, ideally resulting in custom-tailored working conditions for each generation in the future.

Furthermore, more research on autonomy demands could give a better insight to whether they are perceived as a challenge or hindrance. It is still not clear if strain through too much autonomy is a long-term process exceeding the six-month period this study investigated or if indeed the new generation is equipped with tools of handling high amounts of autonomy very well. The present study only investigated irritation and IWB but there are more outcomes relevant for this generation that should be addressed, such as work engagement, organisational commitment, turnover intentions, burnout, and performance. Attention should also be paid to the possible influence of trust and responsibility when it comes to dealing with intensified autonomy demands. As suggested before, giving professional newcomers the option to work more autonomously and to take on more responsibilities by themselves does not necessarily mean a burden for them but rather an acknowledgement of their work or signalling trust from their superior. This may change their perception of intensified autonomy demands, appreciating more and more autonomy and considering it very desirable.

Regarding intensified career-related autonomy demands it may be interesting to investigate how professional newcomers tackle these demands. If they mainly use social media to attend to their career, it may just be easier and natural for them, not causing any stressful experiences. Furthermore, it may be that the negative effects of intensified career-related autonomy demands may be found right after this generation has finished their education, ergo while they are still looking for a job. Therefore it may be interesting to examine what strategies they administer for finding a job.

Another factor influencing the perception of high autonomy at work may be the individual's need for autonomy. Norris (2008) found that individuals with a high need for

autonomy are more likely to take on responsibilities at work and use more self-leadership. It would be interesting to further investigate the interaction of need for autonomy and self-leadership as it may explain the role of self-leadership when dealing with intensified autonomy demands.

In conclusion, there is empirical evidence that young professionals of the digital native cohort flourish from increased autonomy at work in the long term. Autonomously structuring and planning work and career does not lead to negative feelings such as irritation but rather incites innovative behaviour among this generation. However, self-leadership seemingly makes no important contribution to this process, the reasons for this remain unclear. These findings should inspire other scientists to deepen research about young professionals' perception of work, as it appears to differ from previous generations, which will have crucial impacts on future working arrangements.

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Appendix

Appendix A – Questionnaire T1

Arbeit im Wandel

Sehr geehrte Damen und Herren!

Es freut uns sehr, dass Sie an dieser Befragung teilnehmen.

Um sicherzustellen, dass Sie unseren Stichprobenkriterien entsprechen und Ihnen Zeit zu ersparen, bitten wir Sie, die folgenden Fragen vor Beginn der Studie zu beantworten.

In welchem Jahr wurden Sie geboren?

_____ (JJJJ)

Wie viele Stunden arbeiten Sie pro Woche in Ihrer Hauptarbeit?

☐ mehr als 20 Stunden
☐ weniger als 20 Stunden

Arbeiten Sie im Dienstleistungsgewerbe?

☐ Ja
☐ Nein

In welchem Land arbeiten Sie?

☐ Deutschland
☐ Österreich
☐ Andere

Arbeit im Wandel

Sehr geehrte Damen und Herren!

Es freut uns sehr, dass Sie an dieser Befragung teilnehmen.

Dieser Fragebogen ist der erste Teil einer Längsschnittstudie zu Arbeitseinstellungen und Arbeitserleben, durchgeführt von der Universität Wien.

Auf den folgenden Seiten finden Sie **Fragen** und **Aussagen zu Ihrer Arbeit**. Wir fragen Sie nach Einschätzungen Ihrer **Arbeitsbedingungen**. Bitte beurteilen Sie diese Aussagen anhand vorgegebener Antwortalternativen. Kreuzen Sie dazu bitte für jede Frage die Antwort an, die am ehesten auf Sie oder Ihre Arbeit zutrifft. Selbstverständlich werden Ihre Angaben **streng vertraulich behandelt**. Es haben ausschließlich die Projektmitarbeiter/-innen der Universität Wien Einblick in die erhobenen Daten.

Bitte beachten Sie, dass wir Ihren Fragebogen nur dann verwerten können, wenn **Sie alle Fragen beantworten**.

Damit wir die Daten der zwei Erhebungen unter Wahrung Ihrer Anonymität vergleichen können, bitten wir Sie, in das nachstehende Feld einen **Code einzutragen, den nur Sie kennen**. Der Code besteht aus dem Geburtsmonat Ihres Vaters, dem Geburtsjahr Ihrer Mutter sowie den Vornameninitialen Ihres Vaters und Ihrer Mutter.

Beispiel:
Nehmen Sie an, Ihr Vater wäre im **Juni** geboren, Ihre Mutter wäre **1943** geboren, Ihr Vater hieße mit Vornamen **Thomas** und Ihre Mutter **Maria**, dann würden Sie folgenden Code eintragen:

Geburtsmonat des Vaters	Geburtsjahr der Mutter	Erster Buchstabe des Vornamens Ihres Vaters	Erster Buchstabe des Vornamens Ihrer Mutter
06	43	T	M

Ihr persönlicher Code:

Geburtsmonat des Vaters	Geburtsjahr der Mutter	Erster Buchstabe des Vornamens Ihres Vaters	Erster Buchstabe des Vornamens Ihrer Mutter

Veränderungen in der Arbeitswelt

Im Folgenden finden Sie Aussagen zu **Ihrer aktuellen Arbeit.** Diese beziehen sich vor allem auf **Veränderungen in Ihrer Arbeit.**

Bitte überlegen Sie für jede Aussage, ob es die beschriebene Veränderung in Ihrer Arbeit gibt.

	In den letzten 5 Jahren…* *falls Sie kürzer als 5 Jahre angestellt sind, beantworten Sie die Frage entsprechend des Zeitraums in dem Sie tätig sind	gar nicht	ein wenig	Teil-weise	Über-wiegend	völlig
A U A	… muss man häufiger selbstständig die Erreichung der Arbeitsziele kontrollieren.	☐	☐	☐	☐	☐
A UK	… ist es für die eigene berufliche Entwicklung häufiger notwendig, sich Alternativen offen zu halten.	☐	☐	☐	☐	☐
A U A	… muss man die Reihenfolge der Tätigkeiten häufiger selbst festlegen.	☐	☐	☐	☐	☐
A UK	… ist es häufiger notwendig die berufliche Karriere eigenständig zu planen.	☐	☐	☐	☐	☐
A U A	… muss man Entscheidungen häufiger ohne Rücksprache mit Vorgesetzten treffen.	☐	☐	☐	☐	☐
A U A	… ist es häufiger notwendig, den Arbeitsablauf (Tätigkeiten, Termine, Pausen etc.) selbst zu planen.	☐	☐	☐	☐	☐
A UK	… ist man verstärkt gefordert darauf zu achten, dass man für den Arbeitsmarkt attraktiv bleibt (z.B.: durch Weiterbildungen, Networking etc.).	☐	☐	☐	☐	☐
A U A	…muss man die Art, wie man die Arbeit verrichtet, häufiger selbst festlegen.	☐	☐	☐	☐	☐

Arbeitserleben

	In welchem Ausmaß treffen die folgenden Aussagen auf Ihre Arbeit zu?	Gar nicht	Selten	Teil-weise	Häufig	Immer
EZ	Ich setze mir ständig spezifische Ziele für meine eigene Arbeitsleistung.	☐	☐	☐	☐	☐
EZ	Ich arbeite auf spezifische Ziele hin, die ich mir selbst gesetzt habe.	☐	☐	☐	☐	☐
EZ	Ich denke oft über die Ziele nach, die ich mir für die Zukunft setzen will.	☐	☐	☐	☐	☐
SB	Wenn ich schlechte Arbeit geleistet habe, neige ich dazu, mich selbst zu kritisieren.	☐	☐	☐	☐	☐
SB	Ich neige dazu, hart zu mir selbst zu sein, wenn ich eine Aufgabe nicht gut gemacht habe.	☐	☐	☐	☐	☐
SB	Wenn ich etwas nicht gut gemacht habe, bin ich sehr unzufrieden mit mir selbst.	☐	☐	☐	☐	☐
SG	Manchmal diskutiere ich schwierige Probleme mit mir selbst, bevor ich sie angehe.	☐	☐	☐	☐	☐
SG	Bei schwierigen Aufgaben sage ich mir zunächst selbst, was ich als Nächstes zu tun habe.	☐	☐	☐	☐	☐
SG	In schwierigen Situationen diskutiere ich mit mir selbst, um mit ihnen fertig zu werden.	☐	☐	☐	☐	☐
NB	Wenn ich kann, versuche ich an meiner Arbeit Vergnügen zu finden, anstatt sie einfach fertig zu bekommen.	☐	☐	☐	☐	☐
NB	Ich plane gezielt Tätigkeiten, die mir Spaß machen.	☐	☐	☐	☐	☐
NB	Ich suche mir meinen eigenen Lieblingsweg, um Dinge zu erledigen.	☐	☐	☐	☐	☐

Arbeitserleben

IWB	**Wie sehr treffen die folgenden Aussagen auf Sie zu?** **In ihrer Arbeit, wie oft…**	Nie	Fast nie	Selten	Manch mal	Häufig	Sehr häufig	Immer
IO	…machen Sie Vorschläge, um aktuelle Produkte oder Dienstleistungen zu verbessern?	☐	☐	☐	☐	☐	☐	☐
IO	…bringen Sie Ideen ein, um Arbeitsanwendungen zu verbessern?	☐	☐	☐	☐	☐	☐	☐
IO	…erwerben Sie neues Wissen?	☐	☐	☐	☐	☐	☐	☐
IO	…tragen Sie aktiv zur Entwicklung neuer Produkte oder Dienstleistungen bei?	☐	☐	☐	☐	☐	☐	☐
IO	…optimieren Sie die Organisation der Arbeit?	☐	☐	☐	☐	☐	☐	☐
IB	…kümmern Sie sich um Angelegenheiten, die nicht Teil ihrer täglichen Arbeit sind?	☐	☐	☐	☐	☐	☐	☐
IB	…entwickeln Sie originelle Lösungen für Probleme?	☐	☐	☐	☐	☐	☐	☐
IB	…versuchen Sie Menschen zu überzeugen, eine innovative Idee zu unterstützen?	☐	☐	☐	☐	☐	☐	☐
IB	…tragen Sie zur Einführung neuer Ideen bei?	☐	☐	☐	☐	☐	☐	☐

Arbeitserleben

	Welche der folgenden Aussagen trifft auf Sie zu?	Über-haupt nicht	Über-wiegend nicht	Eher nicht	Teil-weise	Eher	Über-wiegen d	Voll und ganz
IRK	Es fällt mir schwer, nach der Arbeit abzuschalten.	☐	☐	☐	☐	☐	☐	☐
IRK	Ich muss auch zu Hause an Schwierigkeiten bei der Arbeit denken.	☐	☐	☐	☐	☐	☐	☐
IRA	Wenn andere mich ansprechen, kommt es vor, dass ich mürrisch reagiere.	☐	☐	☐	☐	☐	☐	☐
IRK	Selbst im Urlaub muss ich manchmal an Probleme bei der Arbeit denken.	☐	☐	☐	☐	☐	☐	☐
IRA	Ich fühle mich ab und zu wie jemand, den man als Nervenbündel bezeichnet.	☐	☐	☐	☐	☐	☐	☐
IRA	Ich bin schnell verärgert.	☐	☐	☐	☐	☐	☐	☐
IRA	Wenn ich müde von der Arbeit nach Hause komme, bin ich ziemlich nervös.	☐	☐	☐	☐	☐	☐	☐
IRA	Ich reagiere gereizt, obwohl ich es gar nicht will.	☐	☐	☐	☐	☐	☐	☐

Soziodemografische Daten

Sie sind…

☐ weiblich   ☐ männlich

Welche Nationalität besitzen Sie?

☐   Deutschland
☐   Österreich
☐   Andere

Welches ist Ihre höchste abgeschlossene Ausbildung?

☐   Pflichtschulabschluss
☐   Fachschule
☐   Abitur/ Matura
☐   Realschulabschluss
☐   Kein Abschluss
☐   Lehrabschluss/ Berufsausbildung
☐   Universitäts-/ (Fachhochschulabschluss

Berufliche Daten

In welcher Branche sind Sie tätig?

- ☐ Datenverarbeitung, IT
- ☐ Telekommunikation
- ☐ Verlagswesen, Filmproduktion, -verleih, -vertrieb, Kinos
- ☐ Rundfunkanstalten
- ☐ Finanzdienstleistungen, Banken
- ☐ Versicherungen, Rückversicherungen, Pensionen
- ☐ Immobilien, Grundstücks- und Wohnungswesen
- ☐ Rechtsberatung, Steuerberatung, Wirtschaftsprüfung
- ☐ Unternehmensberatung
- ☐ Ingenieurswissenschaften, Architektur, Vermessung, technische, physikalische, chemische Untersuchung
- ☐ (Natur)wissenschaftliche Forschung und Entwicklung
- ☐ Werbung, Marktforschung, PR
- ☐ Andere

Falls Sie in einer anderen Branche arbeiten, bitte geben Sie diese an:

_____

Wie lange arbeiten Sie schon in ihrer aktuellen Branche? (seit ihrer letzten Ausbildung)
_____ Jahre   _____Monate

Wie lange arbeiten Sie schon in ihrem aktuellen Unternehmen?
_____ Jahre   _____Monate

In welchem Vertragsverhältnis befinden Sie sich aktuell?

- ☐ Vollzeit berufstätig
- ☐ Teilzeit berufstätig
- ☐ Selbstständig
- ☐ Andere

Wie viele **Stunden** arbeiten Sie durchschnittlich **pro Woche** (inkl. Mehrarbeit/Überstunden)?

_____ Stunden

Üben Sie eine **leitende Funktion** aus (Führungskraft)?

☐Ja   ☐Nein

Vielen Dank für Ihre Teilnahme!

Der Fragebogen ist hiermit beendet.

Wenn Sie an den Studienergebnissen interessiert sind, bitten wir sie, am zweiten Teil dieser Studie in 6 Monaten wieder teilzunehmen. Im Anschluss lassen wir Ihnen die Studienergebnisse gerne per E-Mail zukommen.

Appendix B – Questionnaire T2

Arbeit im Wandel

Sehr geehrte Damen und Herren!

Es freut uns sehr, dass Sie an dieser Befragung teilnehmen.

Um sicherzustellen, dass Sie unseren Stichprobenkriterien entsprechen und Ihnen Zeit zu ersparen, bitten wir Sie, die folgenden Fragen vor Beginn der Studie zu beantworten.

In welchem Jahr wurden Sie geboren?

_____ (JJJJ)

Wie viele Stunden arbeiten Sie pro Woche in Ihrer Hauptarbeit?

☐ mehr als 20 Stunden
☐ weniger als 20 Stunden

Arbeiten Sie im Dienstleistungsgewerbe?

☐ Ja
☐ Nein

In welchem Land arbeiten Sie?

☐ Deutschland
☐ Österreich
☐ Andere

Arbeit im Wandel

Sehr geehrte Damen und Herren!

Es freut uns sehr, dass Sie an dieser Befragung teilnehmen.

Dieser Fragebogen ist der erste Teil einer Längsschnittstudie zu Arbeitseinstellungen und Arbeitserleben, durchgeführt von der Universität Wien.

Auf den folgenden Seiten finden Sie **Fragen** und **Aussagen zu Ihrer Arbeit**. Wir fragen Sie nach Einschätzungen Ihrer **Arbeitsbedingungen**. Bitte beurteilen Sie diese Aussagen anhand vorgegebener Antwortalternativen. Kreuzen Sie dazu bitte für jede Frage die Antwort an, die am ehesten auf Sie oder Ihre Arbeit zutrifft. Selbstverständlich werden Ihre Angaben **streng vertraulich behandelt**. Es haben ausschließlich die Projektmitarbeiter/-innen der Universität Wien Einblick in die erhobenen Daten.

Bitte beachten Sie, dass wir Ihren Fragebogen nur dann verwerten können, wenn **Sie alle Fragen beantworten**.

Damit wir die Daten der zwei Erhebungen unter Wahrung Ihrer Anonymität vergleichen können, bitten wir Sie, in das nachstehende Feld einen **Code einzutragen, den nur Sie kennen**. Der Code besteht aus dem Geburtsmonat Ihres Vaters, dem Geburtsjahr Ihrer Mutter sowie den Vornameninitialen Ihres Vaters und Ihrer Mutter.

Beispiel:
Nehmen Sie an, Ihr Vater wäre im **Juni** geboren, Ihre Mutter wäre **1943** geboren, Ihr Vater hieße mit Vornamen **Thomas** und Ihre Mutter **Maria**, dann würden Sie folgenden Code eintragen:

Geburtsmonat des Vaters	Geburtsjahr der Mutter	Erster Buchstabe des Vornamens Ihres Vaters	Erster Buchstabe des Vornamens Ihrer Mutter
06	43	T	M

	Geburtsmonat des Vaters	Geburtsjahr der Mutter	Erster Buchstabe des Vornamens Ihres Vaters	Erster Buchstabe des Vornamens Ihrer Mutter
Ihr persönlicher Code:				

Veränderungen in der Arbeitswelt

Im Folgenden finden Sie Aussagen zu **Ihrer aktuellen Arbeit**. Diese beziehen sich vor allem auf **Veränderungen in Ihrer Arbeit**.

Bitte überlegen Sie für jede Aussage, ob es die beschriebene Veränderung in Ihrer Arbeit gibt.

	In den letzten 5 Jahren…* *falls Sie kürzer als 5 Jahre angestellt sind, beantworten Sie die Frage entsprechend des Zeitraums in dem Sie tätig sind	gar nicht	ein wenig	Teil-weise	Über-wiegend	völlig
A U A	… muss man häufiger selbstständig die Erreichung der Arbeitsziele kontrollieren.	☐	☐	☐	☐	☐
A UK	… ist es für die eigene berufliche Entwicklung häufiger notwendig, sich Alternativen offen zu halten.	☐	☐	☐	☐	☐
A U A	… muss man die Reihenfolge der Tätigkeiten häufiger selbst festlegen.	☐	☐	☐	☐	☐
A UK	… ist es häufiger notwendig die berufliche Karriere eigenständig zu planen.	☐	☐	☐	☐	☐
A U A	… muss man Entscheidungen häufiger ohne Rücksprache mit Vorgesetzten treffen.	☐	☐	☐	☐	☐
A U A	… ist es häufiger notwendig, den Arbeitsablauf (Tätigkeiten, Termine, Pausen etc.) selbst zu planen.	☐	☐	☐	☐	☐
A UK	… ist man verstärkt gefordert darauf zu achten, dass man für den Arbeitsmarkt attraktiv bleibt (z.B.: durch Weiterbildungen, Networking etc.).	☐	☐	☐	☐	☐
A U A	…muss man die Art, wie man die Arbeit verrichtet, häufiger selbst festlegen.	☐	☐	☐	☐	☐

| | **Arbeitserleben** | | | | | |

Arbeitserleben

	In welchem Ausmaß treffen die folgenden Aussagen auf Ihre Arbeit zu?	Gar nicht	Selten	Teil-weise	Häufig	Immer
EZ	Ich setze mir ständig spezifische Ziele für meine eigene Arbeitsleistung.	☐	☐	☐	☐	☐
EZ	Ich arbeite auf spezifische Ziele hin, die ich mir selbst gesetzt habe.	☐	☐	☐	☐	☐
EZ	Ich denke oft über die Ziele nach, die ich mir für die Zukunft setzen will.	☐	☐	☐	☐	☐
SB	Wenn ich schlechte Arbeit geleistet habe, neige ich dazu, mich selbst zu kritisieren.	☐	☐	☐	☐	☐
SB	Ich neige dazu, hart zu mir selbst zu sein, wenn ich eine Aufgabe nicht gut gemacht habe.	☐	☐	☐	☐	☐
SB	Wenn ich etwas nicht gut gemacht habe, bin ich sehr unzufrieden mit mir selbst.	☐	☐	☐	☐	☐
SG	Manchmal diskutiere ich schwierige Probleme mit mir selbst, bevor ich sie angehe.	☐	☐	☐	☐	☐
SG	Bei schwierigen Aufgaben sage ich mir zunächst selbst, was ich als Nächstes zu tun habe.	☐	☐	☐	☐	☐
SG	In schwierigen Situationen diskutiere ich mit mir selbst, um mit ihnen fertig zu werden.	☐	☐	☐	☐	☐
NB	Wenn ich kann, versuche ich an meiner Arbeit Vergnügen zu finden, anstatt sie einfach fertig zu bekommen.	☐	☐	☐	☐	☐
NB	Ich plane gezielt Tätigkeiten, die mir Spaß machen.	☐	☐	☐	☐	☐
NB	Ich suche mir meinen eigenen Lieblingsweg, um Dinge zu erledigen.	☐	☐	☐	☐	☐

Arbeitserleben

IWB	**Wie sehr treffen die folgenden Aussagen auf Sie zu?** **In ihrer Arbeit, wie oft…**	Nie	Fast nie	Selten	Manch mal	Häufig	Sehr häufig	Immer
IO	…machen Sie Vorschläge, um aktuelle Produkte oder Dienstleistungen zu verbessern?	☐	☐	☐	☐	☐	☐	☐
IO	…bringen Sie Ideen ein, um Arbeitsanwendungen zu verbessern?	☐	☐	☐	☐	☐	☐	☐
IO	…erwerben Sie neues Wissen?	☐	☐	☐	☐	☐	☐	☐
IO	…tragen Sie aktiv zur Entwicklung neuer Produkte oder Dienstleistungen bei?	☐	☐	☐	☐	☐	☐	☐
IO	…optimieren Sie die Organisation der Arbeit?	☐	☐	☐	☐	☐	☐	☐
IB	…kümmern Sie sich um Angelegenheiten, die nicht Teil ihrer täglichen Arbeit sind?	☐	☐	☐	☐	☐	☐	☐
IB	…entwickeln Sie originelle Lösungen für Probleme?	☐	☐	☐	☐	☐	☐	☐
IB	…versuchen Sie Menschen zu überzeugen, eine innovative Idee zu unterstützen?	☐	☐	☐	☐	☐	☐	☐
IB	…tragen Sie zur Einführung neuer Ideen bei?	☐	☐	☐	☐	☐	☐	☐

Arbeitserleben

	Welche der folgenden Aussagen trifft auf Sie zu?	Über- haupt nicht	Über- wiegend nicht	Eher nicht	Teil- weise	Eher	Über- wiegen d	Voll und ganz
IRK	Es fällt mir schwer, nach der Arbeit abzuschalten.	☐	☐	☐	☐	☐	☐	☐
IRK	Ich muss auch zu Hause an Schwierigkeiten bei der Arbeit denken.	☐	☐	☐	☐	☐	☐	☐
IRA	Wenn andere mich ansprechen, kommt es vor, dass ich mürrisch reagiere.	☐	☐	☐	☐	☐	☐	☐
IRK	Selbst im Urlaub muss ich manchmal an Probleme bei der Arbeit denken.	☐	☐	☐	☐	☐	☐	☐
IRA	Ich fühle mich ab und zu wie jemand, den man als Nervenbündel bezeichnet.	☐	☐	☐	☐	☐	☐	☐
IRA	Ich bin schnell verärgert.	☐	☐	☐	☐	☐	☐	☐
IRA	Wenn ich müde von der Arbeit nach Hause komme, bin ich ziemlich nervös.	☐	☐	☐	☐	☐	☐	☐
IRA	Ich reagiere gereizt, obwohl ich es gar nicht will.	☐	☐	☐	☐	☐	☐	☐

Soziodemografische Daten

Sie sind...

☐ weiblich ☐ männlich

Welche Nationalität besitzen Sie?

☐ Deutschland
☐ Österreich
☐ Andere

Welches ist Ihre höchste abgeschlossene Ausbildung?

☐ Pflichtschulabschluss
☐ Realschulabschluss
☐ Fachschule
☐ Abitur/ Matura
☐ Realschulabschluss
☐ Lehrabschluss/ Berufsausbildung
☐ Universitäts-/ (Fachhochschulabschluss
☐ Kein Abschluss

Arbeit

Wenn Sie mehr als einen Beruf ausüben, dann denken Sie beim Ausfüllen der folgenden Fragen bitte an den mit den **meisten wöchentlichen Arbeitsstunden**.

In welcher **Branche** sind Sie tätig?

☐ Datenverarbeitung, IT
☐ Telekommunikation
☐ Verlagswesen, Filmproduktion, -verleih, -vertrieb, Kinos
☐ Rundfunkanstalten
☐ Finanzdienstleistungen, Banken
☐ Versicherungen, Rückversicherungen, Pensionen
☐ Immobilien, Grundstücks- und Wohnungswesen
☐ Rechtsberatung, Steuerberatung, Wirtschaftsprüfung
☐ Unternehmensberatung
☐ Ingenieurswissenschaften, Architektur, Vermessung, technische, physikalische, chemische Untersuchung
☐ (Natur)wissenschaftliche Forschung und Entwicklung
☐ Werbung, Marktforschung, PR
☐ Andere

Falls Sie in einer **anderen Branche** arbeiten, bitte geben Sie diese an:

_____

Wie lange arbeiten Sie schon in ihrer **aktuellen Branche**? (ggf. nach **Ihrer letzten Ausbildung**)?
Falls Sie z.B. seit 18 Monaten in Ihrer Branche arbeiten, geben Sie bitte "1,5" ein.
Jahre   _____

Wie lange arbeiten Sie schon in ihrem **aktuellen Unternehmen**?
Falls Sie z.B. seit 18 Monaten in Ihrer Branche arbeiten, geben Sie bitte "1,5" ein.

Jahre   _____

In welchem **Vertragsverhältnis** befinden Sie sich aktuell?

- ☐ Vollzeit berufstätig
- ☐ Teilzeit berufstätig
- ☐ Selbstständig
- ☐ Andere

Wie viele **Stunden** arbeiten Sie durchschnittlich **pro Woche** (inkl. Mehrarbeit/Überstunden)?
_____ Stunden

Üben Sie eine **leitende Funktion** aus (Führungskraft)?
☐Ja   ☐Nein

Vielen Dank für Ihre Teilnahme!

Der Fragebogen ist hiermit beendet.

Wenn Sie an den Studienergebnissen interessiert sind, lassen wir Ihnen diese gerne per E-Mail zukommen.

Appendix C – Index for abbreviations on the questionnaires

Index for abbreviations in the questionnaires

AUA	Intensified job-related autonomy demands
AUK	Intensified career-related autonomy demands
EZ	Self-goal setting
SB	Self-punishment
SG	Self-talk
NB	Natural reward strategy
IWB	Innovative work behaviour
IO	Innovative output
IB	Innovative behaviour
IRK	Cognitive irritation
IRA	Affective irritation

Appendix D – Factor analyses

1. Intensified autonomy demands

To check that intensified autonomy demands loaded on two distinct factors (intensified job-related autonomy demands and intensified career-related autonomy demands), an eight-item factor analysis with a principal component analysis and varimax rotation was performed. The Kaiser-Mayer-Olkin (KMO) measure of .85 was a great value as it exceeded the bare minimum of .5 for the KMO value; thus the adequacy of the sample was assumed (Field, 2009). Bartlett's test for sphericity with χ^2 (28) = 642.74, p < .001 indicated sufficiently large correlations between the items, therefore approving a principal component analysis. An initial analysis was run to obtain eigenvalues for each component of the data. Two components had eigenvalues over Kaiser's criterion of 1 and in combination explained 61.64% of the variance. Table 7 shows the factor loadings for intensified job-related and career-related autonomy demands.

Table 7. Principal component analysis: intensified autonomy demands

Item No.	Item	Factors	
		1	2
T1AUA_1	...muss man häufiger selbstständig die Erreichung der Arbeitsziele kontrollieren.	.40	
T1AUA_2	…muss man die Reihenfolge der Tätigkeiten häufiger selbst festlegen.	.77	
T1AUA_3	…muss man Entscheidungen häufiger ohne Rücksprache mit Vorgesetzten treffen.	.76	
T1AUA_4	ist es häufiger notwendig, den Arbeitsablauf (Tätigkeiten, Termine, Pausen etc.) selbst zu planen.	.75	
T1AUA_5	muss man die Art, wie man die Arbeit verrichtet, häufiger selbst festlegen.	.69	
T1AUK_1	…ist es für die eigene berufliche Entwicklung häufiger notwendig sich Alternativen offen zu halten.		.85
T1AUK_2	ist es häufiger notwendig die berufliche Karriere eigenständig zu planen.		.74
T1AUK_3	ist man verstärkt gefordert darauf zu achten, dass man für den Arbeitsmarkt attraktiv bleibt (z.B. durch Weiterbildungen, Networking etc.).		.83
	Eigenvalues	3.76	1.17
	% of variance	46.99	14.64
	Factor analysis with principal component analysis and varimax rotation.		

2. Self-leadership

A principal component analysis was conducted on the six items of self-goal setting and self-punishment with varimax rotation. The KMO measure verified the sample adequacy for the analysis with a KMO = .76, a good value according to Field (2009). Bartlett's test of sphericity χ^2 (15) = 743.51, p < .001 indicated that correlations between items were sufficiently large for principal component analysis. An initial analysis was run to obtain eigenvalues for each component of the data. Two components had eigenvalues over Kaiser's criterion of 1 and in combination explained 77.12% of the variance. Factor loadings for self-goal setting and self-punishment are depicted in Table 8.

Table 8. Principal component analysis: self-leadership

Item No.	Item	Factors 1	2
T1EZ_1	Ich setze mir ständig spezifische Ziele für meine eigene Arbeitsleistung.	.90	
T1EZ_2	Ich arbeite auf spezifische Ziele hin, die ich mir selbst gesetzt habe.	.92	
T1EZ_3	Ich denke oft über die Ziele nach, die ich mir für die Zukunft setzen will.	.68	
T1SB_1	Wenn ich schlechte Arbeit geleistet habe, neige ich dazu, mich selbst zu kritisieren.		.88
T1SB_2	Ich neige dazu, hart zu mir selbst zu sein, wenn ich eine Aufgabe nicht gut gemacht habe.		.89
T1SB_3	Wenn ich etwas nicht gut gemacht habe, bin ich sehr unzufrieden mit mir selbst.		. 86
	Eigenvalues	1.34	3.28
	% of variance	22.39	74.73
	Factor analysis with principal component analysis and varimax rotation.		

3. Irritation

It was essential that the eight items of the irritation scale could be distinguished into two components, cognitive and affective irritation. Therefore, a principal component analyses was run, the KMO = .89 can be considered a great value (Field, 2009), verifying adequate sampling. Bartlett's test of sphericity χ^2 (28) = 1464.79, $p < .001$ indicated that correlations between items were sufficiently large for principal component analysis. Two components showed eigenvalues over Kaiser's criterion of 1, and in combination explained 79.62% of the variance.

Table 9 displays the factor loadings for cognitive and affective irritation.

Table 9. Principal component analysis: irritation

Item No.	Item	Factors	
		1	2
$_{T2}$IRK_1	Es fällt mir schwer, nach der Arbeit abzuschalten.	.91	
$_{T2}$IRK_2	Ich muss auch zu Hause an Schwierigkeiten bei der Arbeit denken.	.91	
$_{T2}$IRK_3	Selbst im Urlaub muss ich manchmal an Probleme bei der Arbeit denken.	.81	
$_{T2}$IRA_1	Wenn andere mich ansprechen, kommt es vor, dass ich mürrisch reagiere.		.78
$_{T2}$IRA_2	Ich fühle mich ab und zu wie jemand, den man als Nervenbündel bezeichnet.		.77
$_{T2}$IRA_3	Ich bin schnell verärgert.		.90
$_{T2}$IRA_4	Wenn ich müde von der Arbeit nach Hause komme, bin ich ziemlich nervös.		.73
$_{T2}$IRA_5	Ich reagiere gereizt, obwohl ich es gar nicht will.		.84
	Eigenvalues	1.22	5.15
	% of variance	15.31	64.32
	Factor analysis with principal component analysis and varimax rotation.		

4. IWB

The nine items of IWB were investigated with a principal component analysis with varimax rotation. The sampling adequacy was tested with the Kaiser-Meyer-Olkin, showing a superb KMO = .91 (Field, 2009). Furthermore sphericity was checked with Bartlett's test, χ^2 (36) = 1542.61, $p < .001$ indicating that correlations between items were sufficiently large for principal component analysis. The Kaiser's criterion for eigenvalue of 1 was given, one factor explaining 64.14% of the variance. The detailed factor loadings for IWB are given in

Table 10.

Table 10. **Principal component analysis: IWB**

Item No.	Item	Factor 1
$_{T2}$IO_1	... machen Sie Vorschläge, um aktuelle Produkte oder Dienstleistungen zu verbessern?	.85
$_{T2}$IO_2	...bringen Sie Ideen ein, um Arbeitsanwendungen zu verbessern?	.85
$_{T2}$IO_3	...erwerben Sie neues Wissen?	.49
$_{T2}$IO_4	...tragen Sie aktiv zur Entwicklung neuer Produkte oder Dienstleistungen bei?	.78
$_{T2}$IO_5	...optimieren Sie die Organisation der Arbeit?	.84
$_{T2}$IB_1	...kümmern Sie sich um Angelegenheiten, die nicht Teil Ihrer täglichen Arbeit sind?	.73
$_{T2}$IB_2	...entwickeln Sie originelle Lösungen für Probleme?	.83
$_{T2}$IB_3	...versuchen Sie Menschen zu überzeugen, eine innovative Idee zu unterstützen?	.86
$_{T2}$IB_4	...tragen Sie zur Einführung neuer Ideen bei?	.89
	Eigenvalue	5.77
	% of variance	64.14
	Factor analysis with principal component analysis	

Curriculum Vitae

Personal Data

Name: Johanna Bunner

Date of birth: February 13th, 1988

Nationality: German

Education

04/2009 – 01/2015	**Diplomstudium Psychologie**
	University Vienna
09/2014 – 11/2014	Certified Systemic Coach
	Diplom-Coach apprenticeship, bfi Vienna
10/2007 – 07/2008	Bachelor Ernährungswissenschaften
	Martin-Luther-University Halle, Saale
09/2005 – 07/2007	Tilman-Riemenschneider Gymnasium
	Osterode am Harz
	Abitur with grade average 1.9
09/2004 – 07/2005	King's School
	Bruton, Somerset, UK
08/2001 – 07/2004	Tilman-Riemenschneider Gymnasium
	Osterode am Harz
08/1998 – 06/ 2001	Bischof-Neumann Gymnasium, Königstein

Work experience

10/2013 – 02/2015	**Student Assistant**
	Institute for Work and Organisational Psychology,
	Faculty of Psychology, University Vienna

04/2013 – 07/2013	**Research volunteer Work and Organisational Psychology**
	Institute for Work and Organisational Psychology,
	Faculty of Psychology, University Vienna
07/2012 – 10/2012	**Internship Human Resources**
	Smurfit Kappa Group, Hamburg
10/2008 – 12/2008	**Internship Psychiatric Centre**
	Psychiatrisches Zentrum Nordbaden, Wiesloch

Additional Qualifications

Languages	English – fluent in writing and speech
	Spanish – basic knowledge
	Latin – intermediate latin certificate (kleines Latinum)
Computer Literacy	Operating systems – Mac OS, Windows
	MS Office – Word, Excel, Powerpoint, Publisher
	Statistical analysis – IBM SPSS
	Questionnaire design: Unipark, socisurvey
	Web design: typo3, HTML
Activities	
10/2013 – 10/2014	Active Member at PLAST – Plattform StudentInnen im BÖP

Eidesstattliche Erklärung

Ich versichere, dass ich die Diplomarbeit ohne fremde Hilfe und ohne Benutzung anderer als der angegebenen Quellen angefertigt habe, und dass die Arbeit in gleicher oder ähnlicher Form noch keiner anderen Prüfungsbehörde vorgelegen hat. Alle Ausführungen der Arbeit, die wörtlich oder sinngemäß übernommen wurden, sind als solche gekennzeichnet.

Wien, den 07.11.2014 _____

(Johanna Bunner)