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Relevance of the topic

The term staffing includes processes of attracting, selecting, and retaining employees in an organization (Ployhart, 2006). Because the labor force changed significantly in the past years, staffing needs to be adapted, too (Ployhart, 2006). Those changes are of demographic, social, and cultural nature (Ployhart, 2006). There is e.g. an increasing number of women working in the labor force, as well as an aging population (Beauregard & Henry, 2009). Therefore, it is important to focus on staffing this new labor force, since the competitive power of an organization is dependent on its employees (Ployhart, 2006). For instance, if an organization fails to provide needed autonomy, this could lead to a lack of motivation, negative health effects like burnout, and the withdrawal of important key employees (Hetland, Hetland, Schou Andreassen, Pallesen, & Notelaers, 2011). As a result, organizations want to avoid turnover of staff, since they are very costly in terms of separation costs, replacement costs, training costs, and the loss of productivity (Hinkin & Tracey, 2000). Thus, flexible work arrangements (FWA) are one way to adapt to the changed labor force and to allow employees to balance their job and life (Allen, 2001; Allen, Johnson, Kiburz & Shockley, 2013; Hill et al., 2008), which in turn is connected to a strengthened commitment to the organization (Butts, Casper, & Yang, 2013).

With the model explained in this study the goal is to specify the relationship between FWA and affective commitment, creating valuable insights for this organizationally important topic. A lot of literature has already examined this link, but most authors used different attempts to assess FWA or measured it rather vaguely through several diverse indexes. The proposed mediator, basic need satisfaction, was also applied in different ways and sometimes revealed contrasting outcomes. Therefore, this study is hopefully going to be able to contribute to a clarification on this topic in order to help improving working conditions for employees, as well as to allow employers a better understanding of their labor force and its specific needs.

Research Questions

In this section, the terms used in this study will be clarified first. Then, past literature concerning the constructs will be summarized. In the end, the emerged hypotheses and the summary of the research model will be presented.

Flexible work arrangements

There are two distinct models of human resource management (HRM) which are based on different outlooks on human nature (Truss, Gratton, Hope-Hailey, McGovern, & Stiles, 1997): First, hard HRM models think of employees as *homines oeconomici* who need to be controlled and who prefer monetary rewards, whereas soft HRM models state that employees are best led through individual need fulfillment. This, in turn, makes employees committed to the organization and leads to a better performance (Kuvaas, 2008a). Therefore, this view focuses on employees as humans with their unique personalities and needs (Truss et al., 1997). This is also in accordance with positive psychology's perspectives on the functioning of employees opposed to the job stress literature, which focuses on stressors and negative work aspects only (Trépanier, Forest, Fernet, & Austin, 2015). FWA are one important aspect of soft HRM. They are defined as "employer-provided benefits that permit employees some level of control over when and where they work outside of the standard workday" (Lambert, Marler, & Gueutal, 2008, p. 107). Consequently, this flexibility allows employees to change their temporal (schedule flexibility) and spatial (workplace flexibility) boundaries of their job to more easily balance their work and life demands (Eaton, 2001; Hill et al., 2008). A practical example of temporal flexibility is flexitime, where employees can decide when to start and finish work, sometimes with given core-hours where attendance is mandatory (Eaton, 2001). Another example is the compressed workweek, where employees can work fewer than five days a week while working longer on the remaining days (Baltes, Briggs, Huff, Wright, & Neuman, 1999). An example of spatial flexibility is telecommuting, where employees can work from locations other than the main office, usually their home (Hill, Hawkins, Ferris, & Weitzman, 2001). Regarding the new labor force with its specific needs, especially two-job families and employees with caring responsibilities can benefit greatly from FWA (Eaton, 2001). Even though some studies suggest that temporal flexibility might be more effective than spatial flexibility in balancing work and life (Allen et al., 2013; Hayman, 2009; Shockley & Allen, 2007; Thompson, Payne, & Taylor, 2014), both are going to be assessed in this study, since either of them can be very useful for employees and satisfy certain needs. Besides that, it was found that both flexibilities had unique influences on the assessed outcomes (Thompson et al., 2014), so it is reasonable to consider temporal as well as spatial flexibilities at work.

Affective commitment

Allen and Meyer's (1990) model of organizational commitment consists of three different components of commitment: affective, normative, and continuance commitment. If employees are affectively committed to the organization, they are emotionally attached to it. Employees identify with the organization and truly enjoy their membership (Allen & Meyer, 1990). Normative commitment is based on feelings of obligation to remain with the organization (Allen & Meyer, 1990). Normatively committed employees might not leave the organization because it e.g. paid for their expensive training. Continuance commitment is based upon calculation, where employees think about the costs of leaving the organization (Allen & Meyer, 1990). In this case, employees might stay with the organization because they have no other job opportunities. Because affective commitment was found to be the strongest predictor of organizational outcomes, such as turnover intentions and actual turnover (Allen & Meyer, 1996; Gautam, van Dick, & Wagner, 2001; Meyer, Stanley, Herscovitch, & Topolnysky, 2002), only this component will be assessed. Organizational outcomes that are linked with affective commitment are e.g. fewer turnover intentions (Galletta, Portoghese, & Battistelli, 2011; Marescaux, De Winne, & Sels, 2012), higher job satisfaction (Aydogdu & Asikgil, 2011; Meyer et al., 2002), stronger job involvement (Meyer et al., 2002), and better job performance (Hunter & Thatcher, 2007), just to name a few.

The effect of flexible work arrangements for affective commitment

A significant number of past studies merged different aspects of job autonomy and created an index that was linked to a high level of affective commitment (Butts et al., 2013; Chang, Leach, & Anderman, 2015; Eby, Freeman, Rush, & Lance, 1999; Galletta et al., 2011; Grover & Crooker 1995; Karim, 2010; Kooij, Jansen, Dikkers, & De Lange, 2010; Park & Searcy, 2011) and fewer turnover intentions (Batt & Valcour, 2003; Grover & Crooker 1995; Kim & Stoner, 2008; Orpen, 1979). But also relationships between FWA and affective commitment (Casper & Harris, 2008, Ng, Butts, Vandenberg, DeJoy, & Wilson, 2006), as well as fewer turnover intentions (McNall, Masuda, & Nicklin, 2009) were found. Temporal flexibility was also linked with other important organizational outcomes like better performance, higher job satisfaction, and lower absenteeism (Baltes et al., 1999), as well as a lower risk for stress and burnout (Grzywacz, Carlson, & Shulkin, 2008). However, some studies failed to find a link between job autonomy, like temporal flexibility, and commitment (e.g. Phaik Lin & Lee Ping, 2016).

On the other hand, if people experience control, they are pressured to think, feel, or behave in certain ways (Deci & Ryan, 2008a), which is a threat to the need for autonomy (Hetland et al., 2011). For instance, controlling temporal aspects of work, like billing time, were found to decrease the willingness to volunteer (Pfeffer & Devoe, 2009). These authors suggested that this happened because an economic evaluation of time took place, which decreased volunteering by reason of lacking the desired monetary payoff (Pfeffer & Devoe, 2009). This stresses how organizational practices can have a big impact on employees' perceptions about time, and work in general (Pfeffer & Devoe, 2009).

To sum it all up, these results show that having freedom at work is linked to a boosted attachment to the organization, which in turn is linked to e.g. a reduced desire to leave (Galletta et al., 2011). Therefore, it is proposed that:

Hypothesis 1: Flexible work arrangements have a positive relationship with affective commitment.

Some authors suggested that this relationship is based on employees getting a favorable image of their employers when they are supported in balancing their work and private life (Grover & Crooker, 1995; McNall et al., 2009; Thompson, Beauvais, & Lyness, 1999). Therefore, for this direct relationship, *organizational support theory* with its perceived organizational support (POS) is proposed (Eisenberger, Huntington, Hutchison, & Sowa, 1986). POS measures, whether employees have a feeling that their organizations care about their well-being (Eisenberger et al., 1986). It is proposed that many factors, such as the offer of FWA, influence POS (e.g. Eisenberger et al., 1986; Gillet et al., 2013). Therefore, through offering FWA, employees get the feeling that their organizations care about them, which in turn has a positive relationship with affective commitment (e.g. Lapalme et al., 2009; Rhoades & Eisenberger, 2002). One longitudinal study could find that POS is not only positively related to affective commitment, but actually leads to higher affective commitment as well (Rhoades, Eisenberger, & Armeli, 2001). Even though POS would also be suitable as a possible mediator, this study will go into further detail and propose basic need fulfillment of employees as a mediator (e.g. Gillet, Forest, Benabou, & Bentein, 2015). POS was also found to have a significant relationship with need satisfaction (Gillet et al., 2012), which again stresses the entanglement of those two constructs.

The role of need satisfaction as a mediator between flexible work arrangements and affective commitment

So, how does the relationship between FWA and strong affective commitment work exactly? The *Self-Determination Theory* (Deci & Ryan, 2008a) and its three important basic needs are proposed as the main theory explaining this connection.

Self-determination theory

The Self-Determination Theory (SDT) is a macrotheory of human motivation that has been used in different domains, such as parenting, education, healthcare, sports, and work (Deci & Ryan, 2008a). It states that humans are proactive organisms who want to optimize their life conditions and who strive for integrity (Deci & Vansteenkiste, 2004). This movement does not happen automatically but requires a certain nutrition. The *Basic Psychological Needs Theory* (BPNT; Deci & Ryan, 2000), one of SDT's subtheories, states that there are three basic psychological needs who function as that nutrition: the need for autonomy, the need for competence, and the need for relatedness.

Need for autonomy. The need for autonomy stems from the wish to be responsible for one's own behavior (de Charms, 1968). It means acting with volition and perceiving one's actions as congruent with one's values and interests (Deci & Ryan, 2000). However, it does not mean to be independent of others, but rather means the feeling of having a choice when acting (Chirkov et al., 2003). It could also be described as self-governance or self-determination (Ryan & Deci, 2000). The need for autonomy is particularly important for contributing to intrinsic motivation, where individuals find tasks truly interesting and no consequences, e.g. punishments for not doing the tasks or rewards for doing them, occur (Deci & Ryan, 2000). Autonomy is also known from other theories, such as the *Job Characteristics Model* (JCM; Hackman & Oldham, 1976) or the *Job Demands-Resources Model* (JD-R; Demerouti, Bakker, Nachreiner, & Schaufeli, 2001). In the JCM the construct is defined as *job autonomy*, which means the freedom of an employee over their job (Hackman & Oldham, 1976), as in scheduling their work (Kuvaas, 2008b). Job autonomy is seen as one of five core job dimensions. Additionally, job autonomy and feedback are seen as the most important elements of motivation (Hackman & Oldham, 1976). On the other hand, the JD-R model differentiates between *job resources* and *job demands* (Demerouti et al., 2001). Job resources, e.g. task autonomy, had been linked to need satisfaction (Trépanier et al., 2015; Van den Broeck, Vansteenkiste, De Witte, & Lens, 2008). Job autonomy can also help employees

coping with exhausting job demands, like time pressure (Ahuja, Chudoba, Kacmar, McKnight, & George, 2007; Bakker & Demerouti, 2007). This makes autonomy on the job an important matter.

Need for competence. This need concerns the desire to be effective when dealing with one's environment (White, 1959). People have a need to feel capable of mastering different tasks (Deci & Vansteenkiste, 2004). This is best achieved when the tasks are optimally challenging and desired rewards are attainable (e.g. Deci, Ryan, Gagné, Leone, Usunov, & Kornazheva, 2001). Regarding the work context, e.g. feedback was found to satisfy the need for competence (e.g. Deci, Olafsen, & Ryan, 2017). However, it is important that the feedback is not of controlling, but only of informational nature (Deci, Connell, & Ryan, 1989). Another study found that students who had autonomy supportive teachers felt more competent and were more intrinsically motivated than students who had controlling teachers (Deci, Schwartz, Sheinman, & Ryan, 1981), which indicates a relationship between autonomy and competence satisfaction, as well as competence satisfaction and intrinsic motivation (Deci & Ryan, 2000; Deci et al., 2017). The combination of the need for competence, feedback, and intrinsic motivation resulted in a study, which found that felt competence mediated the effects of feedback on intrinsic motivation (Vallerand & Reid, 1984). All these findings show that the need for competence plays an important role in the work context.

Need for relatedness.

The need for relatedness is the need to interact with other people, to be connected to them, and to be a member of a group (Baumeister & Leary, 1995). This need requires mutual respect, trust, and caring (Baumeister & Leary, 1995). It could also be described as a need for belongingness (Deci & Vansteenkiste, 2004). SDT states that individuals tend to initiate contact with other people in order to satisfy this specific need (Deci & Ryan, 2011). As mentioned before, autonomy does not mean to be independent of others (Chirkov et al., 2003); so autonomy satisfaction is not in contrast to relatedness satisfaction (Deci & Ryan, 2000). Actually, it was found that both were positively associated with each other (Ryan & Lynch, 1989). Considering the work context, one study found that relatedness satisfaction had a significant relationship with performance (Baard, Deci, & Ryan, 2004). Just like the other needs, relatedness satisfaction was found to be associated with intrinsic motivation (Anderson, Manoogian, & Reznick, 1976; Ryan & Grolnick, 1986; Ryan, Stiller, & Lynch,

1994). In sum, all three needs are very relevant for the work context and were shown to have important effects on work-related outcomes.

Other authors support this choice of needs and stress the importance of them considering their salience (Sheldon, Elliot, Kim, & Kasser, 2001). Those needs are seen as nutrition that helps individuals towards growth, integrity, and health (Deci & Ryan, 2000; Deci & Ryan, 2008a; Deci & Ryan, 2008b). These needs are stated as universally important for all genders (Chirkov, Ryan, Kim, & Kaplan, 2003) and cultures (Deci & Ryan, 2000). Therefore, differing strengths of the needs should not exist (Deci & Vansteenkiste, 2004; Van den Broeck et al., 2008). Hence, only the needs' satisfaction or frustration is focused (Deci & Vansteenkiste, 2004). Many studies supported these claims (e.g. Chen et al., 2015; Chirkov et al., 2003; Chirkov, Ryan, & Willness, 2005; Church et al., 2013; Deci et al., 2001; Nishimura & Suzuki, 2016). Chen et al. (2015) also showed that the individual desire of getting a need fulfilled does not alter the outcomes. Because of the importance of these needs, people normally tend to strive for situations which satisfy them and avoid situations which thwart them (Deci & Vansteenkiste, 2004). Besides that, studies have shown that a balanced need satisfaction is critical (Sheldon & Niemiec, 2006). People with the same sum score but more variability in their need satisfaction reported e.g. lesser well-being (Sheldon & Niemiec, 2006). Taken together, SDT provides a framework to understand people's optimal and dysfunctional functioning (e.g. Fernet, Austin, Trépanier, & Dussault, 2013; Fernet, Austin, & Vallerand, 2012; Van den Broeck et al., 2008). Because the satisfaction of the needs was found to mediate the relationship between HRM (e.g. FWA) and HRM outcomes (e.g. affective commitment) (Marescaux et al., 2012), this study wants to take a closer look at this relation.

First, when considering the support of those needs, some authors suggest that sometimes it is possible to satisfy a single need, whereas other times two or all three needs can be satisfied at once (Marescaux et al., 2012; Vansteenkiste, Niemiec, & Soenens, 2010). The authors mention the example of a meaningful rationale, which can support autonomy and competence (Vansteenkiste et al., 2010). On the other hand, providing employees with choices would only satisfy the need for autonomy (Vansteenkiste et al., 2010). Anyway, need support usually satisfies more than one need at once (Vansteenkiste et al., 2010), and sometimes can be surprising in its coherences (Dysvik, Kuvaas, & Gagné, 2013; Marescaux et al., 2012; Trenshaw, Revelo, Earl, & Herman, 2016; Van den Broeck, Vansteenkiste, De Witte, Soenens, & Lens, 2010). One study e.g. tried to support autonomy only, while students

mentioned relatedness as the most important element that was supporting their motivation (Trenshaw et al., 2016). Therefore, one can never know exactly which of the three needs are going to be affected by a certain policy. Past studies often used a need support index instead of focusing on the needs individually (Deci et al., 2017); but because of the above-mentioned reasons, the relationships between all the three needs and FWA are going to be investigated individually, instead of only focusing on one specific need or on a need satisfaction index.

Second, considering the different needs, the need for autonomy is by far the most studied one (Deci et al., 2017; Gagné & Deci, 2005), and seems to be more essential than the others (Kuvaas, 2008b). This is because if supervisors support autonomy they often support the other two needs as well; and if employees have a feeling of autonomy they often find ways to get their other needs satisfied, too (Deci et al., 2017). Furthermore, only the degree of autonomy is important for the integration of behaviors (Gagné & Deci, 2005). The least effective type of internalization is called introjection and involves external regulation like rewards or punishments (Deci & Ryan, 2008b). The next type, which comes with more autonomy, is called identification and states that individuals accept their behavior, which is not pressured or controlled in any way, as their own (Deci & Ryan, 2008b). The last type, integration, comes with the most autonomy and means that individuals behave truly autonomous or self-determined (Deci & Ryan, 2008b). Because of those reasons, only assessing autonomy seemed sufficient for some studies. However, according to SDT, all three needs are important (Gagné & Deci, 2005). Some studies found that all three needs have main effects on at least some of the assessed outcomes (Sheldon & Filak, 2008) and that each of the three needs has an independent variance in the outcomes (Van Den Broeck, Ferris, Chang, & Rosen, 2016; Vansteenkiste et al., 2010). Other authors supported the decision that all three needs are equally important (Reis, Sheldon, Gable, Roscoe, & Ryan, 2000; Sheldon et al., 2001; Sheldon, Ryan, Reis, 1996). This is another reason why all three needs are going to be assessed individually: to be able to better examine the individual relationships with FWA and affective commitment.

On the other side, Deci and Ryan (2000) stated that thwarting those basic needs can have significant negative consequences for employees' health and well-being. However, one must differentiate between need dissatisfaction, where the need is simply not fulfilled, and need frustration, where the need is actively rejected or frustrated by others (Bartholomew, Ntoumanis, Ryan, & Thøgersen-Ntoumani, 2011b). Need frustration is more strongly associated with negative outcomes than need dissatisfaction (Bartholomew, Ntoumanis, Ryan, Bosch, & Thøgersen-Ntoumani, 2011a; Costa, Ntoumanis, & Bartholomew, 2014). If the

basic needs do not get satisfied, individuals relinquish further satisfaction and seek for substitutes (Sheldon & Krieger, 2004; Sheldon & Krieger, 2007; Radel, Pelletier, Sarrazin, & Milyavskaya, 2011; Williams, Hedberg, Cox, & Deci, 2000). Those substitutes can e.g. be materialism or popularity (Deci & Ryan, 2000), as well as attractiveness (Williams et al., 2000). For example, teenagers who had less need-supportive mothers valued financial success more than teenagers who had need-supportive mothers (Kasser, Ryan, Zax, & Sameroff, 1995). Focusing on the need for relatedness, another study (Moller, Deci, & Elliot, 2010) concluded that need deprivation can lead to a devaluation of the deprived need, which further hinders its satisfaction. Those examples stress the importance of need satisfaction in the developmental years (Kasser, & Ryan, 1996) and show that through seeking for substitutes, need dissatisfaction or need thwarting drives individuals even further away from satisfying their basic needs (Deci & Ryan, 2011). It is important not to forget that SDT states that everyone has these basic needs (Deci & Ryan, 2000; Deci & Vansteenkiste, 2004), and if a need is dissatisfied or thwarted and individuals search for substitutes, it does not mean that individuals do not require this need any longer. Substitutes and behavioral changes only bring individuals further from satisfying the important basic needs (Deci & Ryan, 2011). It has also been shown that job resources, like job autonomy, can be helpful in two ways: they promote need satisfaction *and* prevent need frustration, whereas job demands like time pressure predicted need frustration only (Bartholomew et al., 2011b; Trépanier et al., 2015). This yet again stresses how important job resources like FWA can be for employees.

SDT states that the social context strongly influences psychological experiences and that these experiences are the main causes for people's behavior (Deci & Ryan, 2011). Therefore, work is an important context where certain experiences can satisfy or dissatisfy the basic needs. Consequently, the question how organizations can best support their employees' needs arises (Sheldon, Turban, Brown, Barrick, & Judge, 2003). Managerial styles (Hetland et al., 2011) or supervisors, in general, are central factors, since they can influence tasks characteristics and work designs (Deci et al., 1989; Deci et al., 2017) like FWA, which in turn can either support or dissatisfy need satisfaction. Some studies also stress that need support from coworkers is just as important (Jungert, Koestner, Houliort, & Schattke, 2013; Moreau & Mageau, 2012), but since they usually do not have the power to enable FWA for other employees, they are not considered in this study. Gagné and Deci (2005) summed up a few studies, which have shown that autonomy-supportive work environments and managerial methods benefit need satisfaction and lead to organizational commitment. In this context, certain behaviors of managers or supervisors were found to be autonomy-supportive, e.g.

creating freedom and encouraging self-initiation (Janssen, van Vuuren, & De Jong, 2013); similar to FWA. This supervisory autonomy support was found to satisfy the three basic needs (Baard et al., 2004; Deci et al., 2001; Gillet, Colombat, Michinov, Pronost, & Fouquereau, 2013; Gillet, Fouquereau, Forest, Brunault, & Colombat, 2012) and was found to be related to strong affective commitment (Lapalme, Tremblay, & Simard, 2009). Telecommuting, a type of spatial flexibility, was found to be positively correlated with perceived autonomy (Gajendran & Harrison, 2007). Another study found that the perceived effectiveness of FWA was positively related to the need for autonomy (Van Yperen, Rietzschel, & De Jonge, 2014). Summarizing the previous literature, it is assumed that FWA have a positive relationship with autonomy satisfaction.

Hypothesis 2: Flexible work arrangements have a positive relationship with the satisfaction of the need for autonomy.

Some authors suggested that FWA can be considered as a challenge, which employees master and, therefore, support their need for feeling competent (Van Yperen et al., 2014). For employees, strict temporal and spatial boundaries are not autonomy supporting, but they give them a certain structure they can rely on. Therefore, the planning of when and where to work has already been made for them. If those structures are gone and employees are expected to do the planning on their own, this could represent a task, which needs to be mastered. As mentioned before, these tasks should be optimally challenging and desired rewards (e.g. a balanced work and private life management) should be attainable (e.g. Deci et al., 2001). In previous literature, autonomy-supportive styles of supervisors were found to have positive effects on employees' perceptions of competence (Black & Deci, 2000; Richer & Vallerand, 1995). Summarizing, FWA should affect competence satisfaction through mastering the task of planning. Therefore, a positive relationship between FWA and competence satisfaction is assumed.

Hypothesis 3: Flexible work arrangements have a positive relationship with the satisfaction of the need for competence.

One study found that temporal flexibility was rated more important than spatial flexibility, which was interpreted in a way that employees might have anticipated that working somewhere else than the main office could deprive them of face-to-face communication with

others (Thompson et al., 2014). An assumption, which was shared by other authors (Morganson, Major, Oborn, Verive, & Heelan, 2010). Additionally, employees who were working in the main office showed significantly higher inclusion than employees who made use of spatial flexibilities (Morganson et al., 2010). Another study found that spatial flexibility had positive outcomes as long as face-to-face communication took place from time to time (Coenen & Kok, 2014). It was also found that different types of spatial flexibility were related to affective commitment, although employees who were working exclusively at home had a level of commitment which was equal to the control group (Hunton & Norman, 2010). This could give a hint that too much flexibility can have disadvantages. Therefore, since FWA, especially spatial flexibility, can cause employees to feel disconnected from others (Bartel, Wrzesniewski, & Wiesenfeld, 2012; Broschak & Davis-Blake, 2006; Cooper & Kurland, 2002; Van Yperen et al., 2014), it is proposed that FWA and relatedness satisfaction have a negative relationship.

Hypothesis 4: Flexible work arrangements have a negative relationship with the satisfaction of the need for relatedness.

As mentioned before, need satisfaction had been linked to many positive outcomes (see Deci et al., 2017; Deci & Ryan, 2000; for overviews), like reduced turnover intentions (Gagné, 2003; Williams et al., 2014). But more importantly for this study, Meyer and Maltin (2010) proposed that need satisfaction has a significant and positive relationship with affective commitment. This assumption was confirmed by several other studies (e.g. Gillet et al., 2015; Greguras & Diefendorff, 2009). But how does the satisfaction of the individual needs contribute to affective commitment? Just like for the relationships between FWA and the individual needs, the specific relationships between the three basic needs and affective commitment are going to be assessed, since for these relationships different effects can be proposed as well.

Many studies found a positive relationship between autonomy satisfaction and affective commitment (Greguras & Diefendorff, 2009; Marescaux et al., 2012). Since one of the three basic needs gets satisfied, employees get their nutrition for individual growth, integrity, and health (Deci & Ryan, 2000; Deci & Ryan, 2008a; Deci & Ryan, 2008b), which results in positive outcomes like affective commitment. Also, autonomy does not mean to be independent of others, but to act autonomously, which is similar to feeling a choice when acting (Chirkov et al., 2003). Therefore, autonomy satisfaction is in no contrast to feeling

affectively committed to the organization and being emotionally attached to it. Both are proposed to be simultaneously possible. Previous literature also suggested that affective commitment emerges in a context of free will and choice (Evanschitzky, Iyer, Plassmann, Niessing, & Meffert, 2006), which fits the context of this study. In sum, the positive outcomes resulting from a satisfaction of the need for autonomy should be measurable in this study and a positive relationship between autonomy satisfaction and affective commitment is proposed.

Hypothesis 5: The satisfaction of the need for autonomy has a positive relationship with affective commitment.

On the other hand, competence satisfaction was found to be negatively related to affective commitment (Marescaux et al., 2012). This finding was interpreted in a way that employees who perceive their competence to be high could regard their job alternatives as good, which in turn lessens their commitment to the organization and rises their intention to leave (Marescaux et al., 2012). This assumption was also supported by the fact that a direct positive relationship between competence satisfaction and turnover intention was found (Marescaux et al., 2012). It seems that even though need satisfaction leads to positive outcomes, its not favorable for employers in this case. Employers would constantly need to offer the competent employee enough chances and remunerations that they do not leave the organization. For employees, the satisfaction of the need for competence could still be interpreted as a satisfaction that results in individual growth and integrity (Deci & Ryan, 2000; Deci & Ryan, 2008a; Deci & Ryan, 2008b), which is a beneficial outcome for them. Because in this study affective commitment is going to be assessed, a negative relationship between competence satisfaction and affective commitment is assumed.

Hypothesis 6: The satisfaction of the need for competence has a negative relationship with affective commitment.

The satisfaction of the need for relatedness is, like the other two basic needs, nutrition for growth, integrity, and health (Deci & Ryan, 2000; Deci & Ryan, 2008a; Deci & Ryan, 2008b). This need concerns interacting with other people, feeling connected to them, as well as being a member of a group (Baumeister & Leary, 1995). In the work context, coworkers illustrate a source of satisfaction for this specific need. Concerning affective commitment as an outcome, no contraindications with relatedness satisfaction could be found in previous

literature. If anything, one study found relatedness satisfaction to be significantly and positively related to affective commitment (Marescaux et al., 2012). A meta analysis found that the correlation between coworker satisfaction and affective commitment was .45 (Meyer et al., 2002), which fits the assumption that the need for relatedness can get satisfied by coworkers, and that this condition has a positive relationship with affective commitment. It is therefore assumed that the satisfaction of the need for relatedness is positively related to affective commitment.

Hypothesis 7: The satisfaction of the need for relatedness has a positive relationship with affective commitment.

Summarizing, the satisfaction of all three needs is proposed to serve as nutrition for growth and health (Deci & Ryan, 2000; Deci & Ryan, 2008a; Deci & Ryan, 2008b), which can have positive outcomes (e.g. affective commitment). The underlying process for the relationship between need satisfaction and affective commitment could be due to *Social Exchange Theory* (Blau, 1964) and the *Reciprocity Norm* (Gouldner, 1960). Certain work policies could evoke a positive exchange relationship between the organization and the employee because those policies could express the organization's caring for the employee (Rhoades & Eisenberger, 2002). Therefore, these policies satisfy the individual needs of the employee, who in turn could seek for a balance in this relationship by expanding her or his emotional bond to the organization (Eisenberger, Armeli, Rexwinkel, Lynch, & Rhoades, 2001; Rhoades & Eisenberger, 2002). In this connection, discretionary support is said to be a stronger indicator of the positive valuation of employees than support that is forced to be provided, e.g. by governmental laws (Gouldner, 1960; Rhoades & Eisenberger, 2002). Therefore, theoretically speaking, if supervisors provide more FWA than actually mandatory, the felt obligation should be stronger and, therefore, the relationship with affective commitment should be stronger. However, since it is supposed that competence satisfaction should lead to unaltered or even lower affective commitment, the felt obligation should not play an important role in this connection.

Perceived usability as a moderator

Since it is important to consider the individual needs of the employees, the actual implementation and usability of the offered FWA are more essential than the mere availability of those policies (Edgar & Geare, 2005; Marescaux et al., 2012).

First, formal and informal arrangements need to be distinguished. Formal arrangements and policies are usually based on legislation or collective agreements (Holt & Thaulow, 1996), as well as on employment agreements. Informal arrangements and policies are usually based on the workplace culture or unwritten rules (Holt & Thaulow, 1996). These kinds of norms could e.g. determine how many times a week home office is considered usual and at what point it is “too much”, even though it might be formally allowed (Holt & Thaulow, 1996). These collisions can happen because the informal policies exist besides the formal rules (Holt & Thaulow, 1996). Therefore, supervisors can informally permit more flexibility than is formally allowed (Eaton, 2001; Holt & Thaulow, 1996). On the other hand, supervisors can informally restrict FWA, even though such policies formally exist and should be fully available to employees (Eaton, 2001; Holt & Thaulow, 1996).

Second, it is vital to distinguish if the employee feels free to use the arrangement or not (Eaton, 2001). There are various reasons why the usage of FWA can be discouraged, even if they are (in)formally available. Therefore, the sole (in)formal availability does not suffice as a measure. One study found a direct relationship between perceived usability of certain policies and organizational commitment (Blair-Loy & Wharton, 2004). If employees felt unable to use the offered FWA, their organizational commitment was significantly lower than the commitment of employees who felt able to use the FWA (Blair-Loy & Wharton, 2004). Referring to Eaton (2001), it is hence suggested that perceived usability of the (in)formally offered FWA functions as a moderator for the relationship between FWA and need satisfaction. If these policies do not seem usable, the relationship between FWA and need satisfaction should be weaker to the point where the policies do not matter for need satisfaction anymore. On the other hand, if these policies seem usable, they should actually satisfy the needs of the employees.

Hypothesis 8: The perceived usability of flexible work arrangements moderates the effects of flexible work arrangements on the needs.

Summary of the model

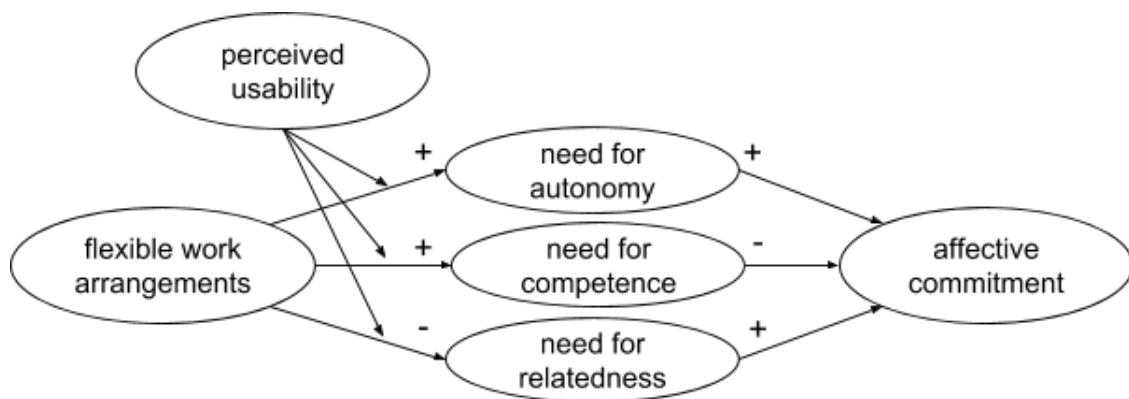


Figure 1. Summary of the model.

Method

Research design and procedure

An online questionnaire was constructed via www.soscisurvey.de. The questionnaire was available in English or German. If items were originally only available in English, they were translated into German for the German version of the questionnaire. Participants completed the questionnaire from the 9th of November 2017 until the 6th of December 2017. The participants for this convenience sampling were recruited via private contacts, direct requests to organizations, and internet portals. Through the latter, 100 participants were recruited via www.surveycircle.com, while 21 participants were found on www.pollpool.com. These free portals give examiners the opportunity to fill out questionnaires of other examiners, which in turn fill out their questionnaires. The link for the questionnaire was also shared in different Facebook groups, mainly those created for the recruitment of participants for scientific studies. As mentioned before, the link was also sent directly to certain organizations, which were thought to offer flexible work arrangements to their employees; mostly organizations with a high IT-percentage.

After the introduction on the first page of the questionnaire, where anonymity of all participants was ensured, the classic demographic questions concerning sex, age, and education level were assessed on the second page. Besides assessing managerial functions and organizational tenure, three filter questions concerning the hours of work a week, whether the participant works as a teacher, and whether the participant is self-employed, were asked on the third page. Filter questions had to be answered, whereas other questions, when left blank, only generated an automatic reminder for the participant. If participants worked less than 30 hours a week, were teachers or self-employed, the questionnaire ended with the outro.

Otherwise, it continued with questions about FWA. If participants answered to have FWA, they were asked to answer questions about the perceived usability of those arrangements. If participants negated to have FWA, these questions were skipped. Either way, participants were asked about their need satisfaction regarding autonomy, competence, and relatedness, as well as their affective commitment towards their organization. All questionnaires finally ended with an outro, which also contained codes for the internet portals SurveyCircle and PollPool.

Sample

A needed number of participants was calculated to be 119 for a small effect and 348 for a strong effect. Therefore, the resulting number of 226 participants was thought to be sufficient for providing valuable results. Altogether 374 participants started the questionnaire, out of which 341 participants fully completed the questionnaire. 89 Cases were removed because they did not work at least 30 hours a week. 19 cases were removed due to being self-employed because in most cases self-employed individuals are able to manage their temporal or spatial flexibility on their own and, therefore, are not dependent on their supervisors or organizational policies. Three participants were removed due to working as a teacher because their definition of flexibility differs from the one of this study. Next, all reversed items were recoded and means, as well as the variance of the assessed variables, were created. Because the DEG_TIME score (bad points for fast answering) and the variance throughout the questions were salient for four cases, they were removed in order to improve the quality of the set. This affected the only four DEG_TIME scores above 100 in the sample (scores 206, 175, 146, and 123) which also came in combination with a sparse variance (0.01 to 0.08). In the end, 226 participants remained.

Out of the 226 remaining participants, 4.4% ($n = 10$) of the questionnaires were answered in English and 95.6% ($n = 216$) were answered in German. 40.7% ($n = 92$) participants were male and 59.3% ($n = 134$) were female. Concerning the age of the sample, there was a tendency towards younger participants. Under 30 years old e.g. represented 54% of the entire sample. 23.5% ($n = 53$) of the participants had managerial functions while the majority, 76.5% ($n = 173$), had no managerial functions. Regarding the education level, there were many academics and few participants with low or no education. 53.1% ($n = 120$) participants held an university degree. The mean of organizational tenure was 6.56 years with a standard deviation of 7.87. Altogether, there was no missing data except for three participants regarding organizational tenure, which were, whenever possible, excluded

pairwise from further calculations concerning organizational tenure. The summary of the sociodemographic data can be seen in table 1.

Table 1. Sociodemographic data.

	Frequency	%	Cumulative %
Language			
English	10	4.4	4.4
German	216	95.6	100.0
Sex			
Male	92	40.7	40.7
Female	134	59.3	100.0
Age			
≤ 30	122	54.0	54.0
31 - 45	73	32.3	86.3
46 - 64	31	13.7	100.0
≥ 65	0	0	0
Education level			
No graduation	2	.9	.9
Compulsory school	3	1.3	2.2
Completed vocational training	40	17.7	19.9
High school diploma	61	27.0	46.9
University degree	120	53.1	100.0
Organizational tenure			
≤ 1 year	66	29.6	29.6
2 - 3 years	56	25.1	54.7
4 - 5 years	24	10.8	65.5
≥ 6 years	77	34.5	100.0
Managerial functions			
Yes	53	23.5	23.5
No	173	76.5	100.0
Temporal flexibility			
Fixed working hours	51	22.6	22.6
Flexitime with core hours	111	49.1	71.7
Flexitime without core hours	25	11.1	82.7
Trust-based working hours	39	17.3	100.0
Spatial flexibility			
Fixed workplace	168	74.3	74.3
Unbound workplace	19	8.4	82.7
Telework with core hours	12	5.3	88.1
Telework without core hours	7	3.1	91.2
I work at the customer's side	20	8.8	100.0

With 111 participants (49.1%) flexitime with core hours was the most frequent temporal flexibility offered by employers. Spatial flexibilities, on the other hand, were not that common, with 74.3% (n = 168) of employees having a fixed workplace. Consequently, flexitime with core hours combined with a fixed workplace was the most common combination of working conditions (39.8%, n = 90). 130 participants (57.5%) only had temporal flexibilities, while 13 participants (5.8%) only had spatial flexibilities. 143 participants (63.3%) had either a temporal or a spatial flexibility, while 45 participants (19.9%) had both. That makes 188 participants (83.2%) in total having either one type of flexibility, the other, or both. Because working at the customer's side was not defined as a spatial flexibility in this study, it was, whenever possible, excluded pairwise from all calculations concerning spatial flexibility. If a participant worked at the customer's side, it was seen as variability rather than flexibility, a distinction that will be clarified in the section *Measures*. The final distribution concerning FWA can be seen in table 2 below.

Table 2. Flexible work arrangements - data.

Flexplace							
Flexitime		Fixed workplace	Unbound workplace	Telework with core hours	Telework without core hours	At the customer's side	Total
	Fixed working hours	38	5	1	0	7	51
	Flexitime with core hours	90	7	8	0	6	111
	Flexitime without core hours	20	2	0	2	1	25
	Trust-based working hours	20	5	3	5	6	39
	Total	168	19	12	7	20	226

Measures

Control variables

Managerial functions and organizational tenure were assessed as possible control variables regarding affective commitment. Organizational tenure had been found to be related to overall organizational commitment (Allen, 2001; Cohen, 1993; Iqbal, 2010; Salami, 2008) and affective commitment (Kuvaas, 2008a). One study found it to be related to continuance

commitment but not to affective commitment (Karim & Noor, 2007), whereas another study found it to be related to all commitment components, however only through weak relationships (Meyer et al., 2002). Still, organizational tenure was assessed as a control variable since the longer employees work in an organization the more difficult it could become for them to leave due to their investments and received benefits (Phaik Lin & Lee Ping, 2016). Managerial functions were also found to be positively correlated with affective commitment (Kuvaas, 2008a) and are, therefore, going to be taken into account.

Also, organizational tenure was found to be positively correlated with feeling competent (Dysvik et al., 2013). Because the longer an employee had worked for her or his organization, the more competent she or he might feel. As a result, organizational tenure was also assessed as a control variable regarding the need for competence.

Flexible work arrangements

Basing on different studies (Batt & Valcour, 2003; Grover & Crooker, 1995; McNall et al., 2009; Thomas & Ganster, 1995) the availability and not the usage of FWA is going to be assessed because the availability of FWA can be seen as a symbol of organizational concern for their employees. Some authors (Eaton, 2001; Holt & Thaulow, 1996) also differentiate between formal and informal policies because supervisors can e.g. permit more flexibility than is formally allowed. Because it is not a matter of this study, it will not be differentiated between formal and informal policies. It will be only focused on the availability of FWA, no matter whether these policies are formal or informal. Another distinction can be made depending on the degree of employees' influence on the FWA (Costa, Sartori, & Åkerstedt, 2006): variability (company-controlled) and flexibility (self-controlled). This distinction is, for instance, important for the type of spatial flexibility where employees work at the customer's side (variability). It is attempted to only focus on self-controlled FWA (flexibility). Minding those influences and concerning the temporal flexibility of their jobs, participants were asked: "Please mark the following statement which fits your job the most". Possible answers were "I have fixed working hours", "I have flexitime with core hours", "I have flexitime without core hours", "I have trust-based working hours". For spatial flexibility the possible answers were "I have a fixed workplace", "I have an unbound workplace (e.g. desk sharing)", "I have telework (e.g. home office) with core hours", "I have telework (e.g. home office) without core hours" and "I work at the customer's side/I am occupationally on the road (e.g. field service)". It was only possible to click one of the proposed answers. As mentioned, concerning the spatial flexibility it was possible to pay attention to the distinction

between variability (company-controlled) and flexibility (self-controlled) (Costa et al., 2006). If participants answered that they work at the customer's side, this was interpreted as variability and not *true* spatial flexibility in the definition of this study because it was demanded by the customer or the supervisor and not the employee her- or himself. Since it can still be assumed that these participants use the temporal flexibility in a flexible, rather than a variable way, this subsample was, whenever possible, excluded from calculations concerning only spatial flexibility. Therefore, participants *had* to make use of the spatial flexibility but *could* choose the temporal frame of their work.

Since the assessment of FWA was, therefore, categorical, the following three categories were formed: temporal flexibility concerning flexitime with core hours ($n = 96$), temporal flexibility concerning flexitime without core hours and trust-based working hours ($n = 47$), and the last category, which consisted of participants which had both, temporal and spatial, flexibilities ($n = 32$). The reason behind this categorization was to achieve at least 30 cases for each category. This sample size was recommended by previous literature (e.g. Bortz & Döhring, 2006). Because some categories had a smaller sample size, they had to be merged into bigger groups. It was also tried to create categories, which are ascending in terms of flexibility. While the category flexitime with core hours represents the least possible flexibility, flexitime without core hours and trust-based working hours represent a higher degree of flexibility. A combination of both, temporal and spatial flexibilities, represents the highest possible flexibility.

Since some studies suggested that temporal flexibilities are more effective than spatial ones (Allen et al., 2013; Hayman, 2009; Shockley & Allen, 2007; Thompson et al., 2014), it was also tried to compare, whether spatial flexibilities in combination with temporal flexibilities, have a different effect than temporal flexibilities alone. Because of this, six cases which only had spatial, but no temporal flexibilities, were removed for the third category. The final categorization can be seen in table 3.

Table 3. Flexible work arrangements - categories.

Fixed working arrangements (n = 38)		
FWA (n = 175)	Temporal flexibility (n = 143)	Category 1 Flexitime with core hours (n = 96)
		Category 2 Flexitime without core hours and trust-based working hours (n = 47)
	Temporal and spatial flexibilities (n = 32)	Category 3 Temporal flexibilities and unbound workplace, Telework with core hours, Telework without core hours (n = 32)

Perceived usability of flexible work arrangements

Eaton (2001) stressed the difference between available and usable FWA. If employees have concerns about using FWA, e.g. that using them would negatively affect their careers, they are not perceived as usable. Therefore, if participants answered that they had temporal or spatial flexibilities, the questionnaire continued with the items: “I feel free to use those flexible work arrangements without getting disadvantaged” and “The use of those flexible work arrangements facilitates planning my private life”. The third item was „Using those flexible work arrangements will in no way jeopardise my future with the company“ (e.g. Haymann, 2009). Those items appeared for both, temporal and spatial, flexibilities so it was possible to assess whether the perceived usability of both flexibilities differed from each other. It is e.g. possible to feel free to use the temporal, but not the spatial flexibilities provided by an organization. Answers to the items concerning perceived usability were made on a 5-point Likert scale ranging from 1 (totally disagree) to 5 (totally agree). Cronbach’s alpha concerning perceived usability for temporal flexibilities (n = 143) was .82 and for spatial flexibilities (n = 32) .78.

Since the construct perceived usability of FWA has no validated scale to this date, a factor analysis was conducted to evaluate the used items. For temporal flexibilities, one component, which explained 73.23% of the variance, could be extracted. Loadings ranged from .85 to .87. For spatial flexibilities, the extracted component explained 65.62% of the

variance with loadings ranging from .73 to .88. Regarding the reliabilities and factor analysis results, the items for perceived usability seem sufficient for both flexibilities.

Need satisfaction

The Work-Related Basic Need Satisfaction scale (Van den Broeck et al., 2010) was used to assess the satisfaction of the three basic needs. Responses were made on a 5-point Likert scale ranging from 1 (totally disagree) to 5 (totally agree). Autonomy was assessed using six items, a sample item is “I feel free to do my job the way I think it could best be done”. Cronbach’s alpha for the entire sample ($n = 226$) was .83. Competence was also assessed using six items ($\alpha = .83$), sample item “I really master my tasks at my job”. Relatedness was assessed using six items ($\alpha = .72$) also, sample item “At work, I feel part of a group”.

Affective commitment

Affective commitment was measured using eight items ($\alpha = .79$) of the Affective Commitment Scale (ACS) from Allen & Meyer (1990), sample items “I would be very happy to spend the rest of my career with this organization” and “I do not feel a strong sense of belonging to my organization (reversed)”. Responses were made on a 5-point Likert scale ranging from 1 (totally disagree) to 5 (totally agree).

Results

Assumptions

Assumptions were checked for all regression analyses. Normal distribution of residuals was confirmed on the basis of graphical inspection via histograms and P-P plots, whereas Shapiro-Wilk was significant for some calculations. Since this is a rather strict test, it was relied on the results of the graphical inspection. Through scatter plots, the linearity and homoscedasticity were proven. Some outliers were found through diverse techniques, such as looking for studentized deleted residuals ± 3 and leverages above .2 (Huber, 1981). Still, no cook-distances were above 1. Anyway, outliers were not deleted since they were plausible (e.g. an organizational tenure of 40 years). The independence of residuals was checked via Durbin-Watson, where a score of 2 is recommended. Most scores were ranging very closely to 2 and, therefore, independence could be assumed. Since the variance inflation factor (VIF) was below 10 for all calculations, multicollinearity between predictors could be ruled out (Field, 2013).

Correlations

First, correlations were calculated. As can be seen in table 4, the variables of interest correlated significantly at a .01 level. The categorical variables of the flexible work arrangements negatively correlated with each other; category 1 had a significant correlation of $-.44$ ($p < .01$) with category 2. Category 1 and category 3 had a correlation of $-.35$ ($p < .01$). Category 2 and 3 had a correlation of $-.21$ ($p < .01$). Out of all categories and the three needs only category 3 had a significant correlation of $.22$ ($p < .01$) with autonomy satisfaction. It was also found that the three proposed mediators correlated significantly with each other; autonomy satisfaction correlated positively with competence satisfaction, $.31$ ($p < .01$) and relatedness satisfaction, $.36$ ($p < .01$). Competence satisfaction also correlated significantly with relatedness satisfaction, $.29$ ($p < .01$). Autonomy satisfaction, $.58$ ($p < .01$), competence satisfaction, $.24$ ($p < .01$), and relatedness satisfaction, $.49$ ($p < .01$) correlated significantly with affective commitment.

The perceived usability of temporal flexibilities had a significant correlation of $.91$ ($p < .01$) with the perceived usability of spatial flexibilities. Regarding their correlations with the three categories, only perceived usability of temporal flexibilities had a significant correlation of $.16$ ($p < .05$) with category 3. Concerning the three mediators, perceived usability of temporal flexibilities had a significant correlation with autonomy satisfaction, $.42$ ($p < .01$), competence satisfaction, $.28$ ($p < .01$), and relatedness satisfaction, $.26$ ($p < .01$). The perceived usability of temporal flexibilities had significant correlations with autonomy satisfaction, $.38$ ($p < .05$) and competence satisfaction, $.32$ ($p < .05$).

Organizational tenure had a significant correlation of $.21$ ($p < .01$) with competence satisfaction and a correlation of $.20$ ($p < .01$) with affective commitment. It also had a significant correlation of $.27$ ($p < .01$) with managerial functions. Managerial functions in turn had a significant correlation of $.16$ ($p < .05$) with competence satisfaction and a significant correlation of $.21$ ($p < .01$) with affective commitment. In sum, correlations approved further investigations.

Table 4. Correlations.

Variables	M	SD	1	2	3	4	5	6	7	8	9	10	11	12
1. Autonomy	3.40	.77	-											
2. Competence	4.18	.62	.31**	-										
3. Relatedness	3.73	.69	.36**	.29**	-									
4. Affective C. ^a	3.13	.74	.58**	.24**	.49**	-								
5. PU - t. ^b	4.25	.79	.42**	.28**	.26**	.25**	-							
6. PU - s. ^c	4.36	.75	.38*	.32*	.22	.08	.91**	-						
7. sex	-	-	-.04	.07	.12	-.07	-.00	-.17	-					
8. org. tenure ^d	6.56	7.87	.12	.21**	.01	.20**	.11	.20	-.07	-				
9. man. functions ^e	-	-	-.13	-.16*	-.07	-.21**	-.02	.24	.07	-.27**	-			
10. category 1	-	-	-.06	.03	.01	-.05	-.04	c	-.10	.22**	.05	-		
11. category 2	-	-	.10	-.03	.00	.06	-.10	c	.05	-.08	-.13	-.44**	-	
12. category 3	-	-	.22**	.08	.07	.12	.16*	.27	.00	-.01	.08	-.35**	-.21**	-

Note. c: constant. ^aAffective C.: Affective Commitment. ^bPU - t.: Perceived Usability - temporal. ^cPU - s.: Perceived Usability - spatial. ^dorg. Tenure: organizational tenure. ^eman. functions: managerial functions.

* $p < .05$; ** $p < .01$

Control variables

Before testing the proposed hypotheses, the presumed control variables were further investigated. Significant correlations approved a further examination of the relationship between organizational tenure and managerial functions with affective commitment, and the relationship between organizational tenure and competence satisfaction. Linear regressions revealed that both, organizational tenure and managerial functions, explained 6.4% of the variance in affective commitment ($R^2 = .064$, $F(2,220) = 7.51$, $p < .01$), which is a low variance explanation (Cohen, 1988). Organizational tenure ($\beta = .15$, $t(220) = 2.28$, $p < .05$) and managerial functions ($\beta = -.16$, $t(220) = -2.42$, $p < .05$) are, therefore, significant predictors of affective commitment. The dichotomous managerial functions were coded in a way that participants with managerial functions were put in group 1 and those without managerial functions in group 2. Those results were also supported by the specific means; participants with an organizational tenure of zero years (below five months) had a lower level

($M = 2.94$, $SD = .72$) of affective commitment than participants with an organizational tenure of 40 years ($M = 3.50$, $SD = 1.94$). Participants with managerial functions ($M = 3.40$, $SD = .69$) also differed from participants without managerial functions ($M = 3.04$, $SD = .74$) in terms of affective commitment.

Concerning the relationship between organizational tenure and competence satisfaction, linear regression revealed that organizational tenure explained 4.6% of the variance in competence satisfaction ($R^2 = .046$, $F(1,221) = 10.61$, $p < .01$), which also is a low variance explanation (Cohen, 1988). Therefore, organizational tenure ($\beta = .21$, $t(221) = 3.26$, $p < .01$) is a significant predictor of competence satisfaction. This result was also supported by the means; participants with an organizational tenure of zero years (below five months) had a lower level ($M = 3.48$, $SD = .79$) of competence satisfaction than participants with an organizational tenure of 40 years ($M = 5.00$, $SD = .00$). Considering these results, organizational tenure and managerial functions were treated as control variables in further calculations.

Hypothesis testing

To test hypotheses 1 and 8, linear regressions were performed in SPSS. To evaluate hypotheses 2 to 7, the PROCESS Macro (Hayes, 2013) for SPSS was used. By choosing model 4 with 5.000 bootstrap samples a mediation analysis was conducted. Organizational tenure and managerial functions were entered as covariates. The three missing values concerning organizational tenure could not be excluded pairwise in PROCESS, but only listwise, so the overall sample for this calculation consisted of only 223 participants instead of 226. The categorical independent variable FWA was dummy coded for each category.

Hypothesis 1

Considering the results, the model explained 8.5% of the variance of affective commitment ($R^2 = .085$, $F(5,217) = 4.06$, $p < .01$), which is a low variance explanation (Cohen, 1988). Category 1 ($\beta = .04$, $t(222) = 0.47$, $p = .636$) and category 2 ($\beta = .09$, $t(222) = 1.08$, $p = .282$) were not found to be significant predictors of affective commitment. However, category 3 showed a significant prediction of affective commitment ($\beta = .16$, $t(222) = 2.10$, $p < .05$). This result was also supported by the specific means. Participants of the category 3 had higher affective commitment ($M = 3.34$, $SD = .57$) than participants of the baseline ($M = 3.09$, $SD = .76$). In sum, only one out of the three categories had a significant relationship with affective commitment.

Hypotheses 2 - 4

Results indicated that autonomy satisfaction ($R^2 = .11, p < .01$) and competence satisfaction ($R^2 = .07, p < .05$) were significantly predicted by the categories, whereas relatedness satisfaction ($R^2 = .01, p = .6569$) was not. Therefore, all models either had no or a low variance explanation (Cohen, 1988). Concerning autonomy satisfaction, category 2 ($\beta = .43, t(222) = 2.83, SE = .15, p < .01$) and category 3 ($\beta = .71, t(222) = 4.26, SE = .17, p < .01$) were significant predictors, while category 1 ($\beta = .25, t(222) = 1.87, SE = .13, p = .0632$) failed to reach significance. These results were also supported by the specific means; participants from category 2 had a higher level of autonomy satisfaction ($M = 3.56, SD = .72$) than the baseline ($M = 3.36, SD = .78$); participants from category 3 also had a higher level of autonomy satisfaction ($M = 3.81, SD = .54$) than the baseline ($M = 3.34, SD = .79$). Concerning competence satisfaction, category 1 ($\beta = .03, t(222) = 0.28, SE = .11, p = .7776$), category 2 ($\beta = .01, t(222) = 0.08, SE = .12, p = .9337$), and category 3 ($\beta = .18, t(222) = 1.31, SE = .14, p = .1932$) failed to reach significance. The significance of the overall competence model could be explained because organizational tenure, as a covariate, reached significance ($\beta = .01, t(222) = 2.52, SE = .01, p < .05$). Regarding relatedness satisfaction, category 1 ($\beta = .11, t(222) = 0.89, SE = .13, p = .3761$), category 2 ($\beta = .07, t(222) = 0.52, SE = .14, p = .6031$), and category 3 ($\beta = .22, t(222) = 1.39, SE = .16, p = .1658$) failed to reach significance as well. In sum, two out of the three categories significantly predicted autonomy satisfaction, whereas the other need satisfactions were not predicted by any of the three categories.

Hypotheses 5 - 7

The proposed mediators explained 45.07% of the variance regarding affective commitment ($R^2 = .4507, p < .01$), which is a high variance explanation (Cohen, 1988). Results indicated that autonomy satisfaction ($\beta = .39, t(222) = 7.01, SE = .06, p < .01$) and relatedness satisfaction ($\beta = .37, t(222) = 6.35, SE = .06, p < .01$) were significant predictors of affective commitment. Those results were also supported by the specific means; participants with a higher autonomy satisfaction had higher affective commitment ($M = 3.81, SD = .09$) than participants with lower levels of autonomy satisfaction ($M = 2.38, SD = .18$). Participants with a higher satisfaction of relatedness had higher levels of affective commitment ($M = 3.96, SD = .56$) than participants with lower levels of relatedness satisfaction ($M = 2.40, SD = .78$). Competence satisfaction ($\beta = -.03, t(222) = -0.43, SE = .07, p = .6681$) was not a significant predictor of affective commitment. In sum, two out of the three mediators were found to have a significant relationship with affective commitment.

Hypothesis 8

To be able to conduct a moderation analysis, the categories needed to be transformed into a metric variable. Therefore, all participants with flexible work arrangements were coded as follows: flexitime with core hours was a score of one, flexitime without core hours a score of two, and trust-based working hours a score of three. This concluded in 175 participants with a specific score concerning temporal flexibilities. Next, the scores for temporal flexibility and perceived usability of temporal flexibilities were mean centered to provide clearer results. Linear regression showed that 21.5% of the variance in autonomy was significantly explained with this model ($R^2 = .215$, $F(3,171) = 15.65$, $p < .01$), which is a moderate variance explanation (Cohen, 1988). The mean centered temporal flexibility ($\beta = .16$, $t(173) = 2.28$, $p < .05$) and the mean centered perceived usability of temporal flexibility ($\beta = .36$, $t(173) = 4.73$, $p < .01$) were significant predictors of autonomy, whereas the interaction term ($\beta = .10$, $t(173) = 1.35$, $p = .178$) failed to reach significance.

Regarding the spatial flexibility, the same procedure was realized. Unbound workplace had a score of one, teleworking with core hours a score of two, and teleworking without core hours a score of three. Working at the customer's side was, as mentioned before, not regarded as a type of spatial flexibility. This concluded in 38 participants having a score for spatial flexibility since participants with spatial flexibilities only were also taken into account. The overall model failed to reach significance ($R^2 = .157$, $F(3,34) = 2.11$, $p = .117$). The mean centered spatial flexibility ($\beta = .03$, $t(37) = 0.18$, $p = .856$) and the interaction term ($\beta = .13$, $t(37) = 0.78$, $p = .440$) were not significant predictors of autonomy. The mean centered perceived usability of spatial flexibilities on the other hand, was significant ($\beta = .41$, $t(37) = 2.42$, $p < .05$). In sum, both proposed moderators did not significantly moderate the relationships. A graphical representation of the significant results from this study can be seen in figure 2.

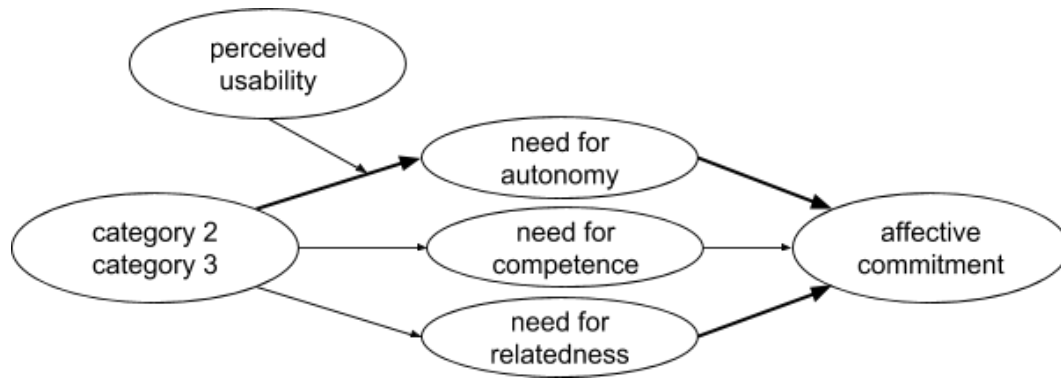


Figure 2. Graphical representation of significant (bold lines) results.

Discussion

Summarizing, the first hypothesis could be partially supported. Category 1, which consisted of flexitime with core hours, and category 2, which consisted of flexitime without core hours and trust-based working hours, failed to show a significant relationship with affective commitment. This is in line with a study conducted by Phaik Lin and Lee Ping (2016), who also failed to show a significant relationship between temporal flexibility and organizational commitment. Category 3 however, which consisted of a combination of temporal and spatial flexibilities, showed a significant and positive relationship with affective commitment. The many insignificances could be due to scale inconsistencies which will be discussed in the section *Limitations and Future Research*. Besides that, the results could also be interpreted in a way that only very flexible arrangements are related to positive effects, and besides temporal, there also need to be spatial flexibilities. Maybe it is indeed the case that only the combination of temporal and spatial flexibilities are related to high affective commitment. This would be in line with literature which suggests that the more need-supportive the environment is, the more the specific needs will be satisfied (e.g. Baard et al., 2004), and therefore the more positive outcomes (e.g. affective commitment) will arise. Furthermore, since only the availability and not the actual usage of FWA was assessed, it can be concluded that for category 3, the availability was sufficient as a measure and sufficient for evoking significant results. This would be in accordance with *signal theory* (Spence, 1973), where it is stated that the organization sends certain signals to their employees. The offer of FWA could be seen as a supportive signal from the organization, which is enough assistance for employees to evoke positive outcomes. In this case, actual usage of the available arrangements is not further necessary.

Hypothesis 1: It could be partially confirmed that FWA have a positive relationship with affective commitment.

Regarding FWA and the three needs, it could be shown that category 2 (flexitime without core hours and trust-based working hours) had a significant and positive relationship with autonomy satisfaction. Also, category 3 (temporal flexibilities in combination with spatial flexibilities) had a significant and positive relationship with the satisfaction of the need for autonomy. This is in line with previous research (e.g. Baard et al., 2004), which stated that options and choices at work can satisfy the need for autonomy. Category 1 (flexitime with core hours) on the other hand, failed to reach a significant relationship with autonomy satisfaction. This could either be due to scale inconsistencies, as discussed in the section *Limitations and Future Research*, or it could be that flexitime with core hours is simply not enough to satisfy employees' need for autonomy. In this study, the specific core hours were not assessed. Usually, core hours are rather strict and employees have only a little scope to adjust their work to their private life (e.g. Eaton, 2001; Holt & Thaulow, 1996). This could be a reason why flexitime with core hours was not found to be significantly related to autonomy satisfaction. Maybe it is, such as for the first hypothesis, indeed needed to provide employees more flexibilities in order to evoke positive effects (e.g. autonomy satisfaction).

Hypothesis 2: Only category 2 and category 3 were found to have a positive relationship with the satisfaction of the need for autonomy.

Regarding the satisfaction of the need for competence, all categories failed to reach significance. Therefore, besides keeping possible scale inconsistencies in mind, it can be concluded that FWA do not help employees in feeling more competent at work. The management of temporal and spatial boundaries does not empower employees in a way that they feel more competent in the job. What is important to consider is that the questions concerning competence only focused on the actual tasks at work, and not on the competence in terms of managing time or place of work. Literature suggested that through FWA employees arrange their working hours and their free time, as well as their time spent working at the workplace and the time spent working e.g. at home, and feel competent if their management succeeds (Van Yperen et al., 2014). Managing their own work-related boundaries can be seen as an additional task, that if completed, can boost their feeling of competence (Van Yperen et al., 2014). This would end in a feeling of competence regarding

temporal and spatial boundary management and not in a higher competence on the actual tasks at work, as it was assessed in this study. Maybe questions concerning the competence in boundary management would have provided different results, but with the data available it cannot be concluded that FWA help employees' feelings of competence at work tasks.

Hypothesis 3: No category was found to have a positive relationship with the satisfaction of the need for competence.

It was further proposed that FWA have a negative relationship with relatedness satisfaction since employees would individually manage their working hours and places of work. This would reduce the hours spent with coworkers and in turn reduce the feeling of being related to coworkers (Bartel et al., 2012; Broschak & Davis-Blake, 2006; Cooper & Kurland, 2002; Van Yperen et al., 2014). Surprisingly, all three categories had no significant relationship with the satisfaction of the need for relatedness; neither a positive nor a negative. This finding could also be due to scale inconsistencies regarding FWA, as discussed in *Limitations and Future Research*. Another reason could be, since the majority of the participants had flexitime with core hours and a fixed workplace, that the impact of detachment was too little to evoke negative effects. If the time spent with coworkers only gets shortened by a couple of hours, this might not have been drastic enough to result in negative outcomes. This would also be in accordance with literature studying effects of complete telework, where employees almost never see coworkers and negative effects regarding relatedness were found (Bartel et al., 2012; Cooper & Kurland, 2002). Since category 2 could also not evoke a negative relationship, it might be concluded that flexitime without core hours or trust-based working hours are still not intense enough to cause a feeling of detachment or social isolation. It must be mentioned though, that the sample for category 2 was just on the edge of being too small ($n = 47$) and therefore any conclusions need to be drawn with caution. The same reasoning can be applied to category 3 ($n = 32$), where it was shown that a combination of temporal and spatial flexibilities was also not enough to evoke negative outcomes. A more precise assessment of the degree of isolation and a bigger sample size for these categories would have certainly been helpful.

Hypothesis 4: No category was found to have a negative relationship with the satisfaction of the need for relatedness.

Regarding the relationships between the three mediators and affective commitment, autonomy satisfaction was found to have a significant and positive relationship with affective commitment. This finding had been supported by the literature, which stated that the satisfaction of the need for autonomy is significantly linked to affective commitment (Greguras & Diefendorff, 2009; Marescaux et al., 2012). Previous literature also suggested that a context of choice, which would result in a satisfied need for autonomy, would promote affective commitment (Evanschitzky et al., 2006). Regarding need satisfaction, it was proposed that the satisfaction of the need for autonomy would act as nutrition that strengthens employees and results in positive outcomes, e.g. affective commitment (Deci & Ryan, 2000; Deci & Ryan, 2008a; Deci & Ryan, 2008b). Additionally, this finding shows that being autonomously satisfied is in no contrast to affective commitment. This stresses the importance to not mistake being autonomous with being independent and unattached to others (Chirkov et al., 2003). Anyway, as being discussed in the section *Limitations and Future Research*, one must not conclude causation. Results may not be interpreted in a way that autonomy satisfaction leads to higher affective commitment because the other way could be the case, too (highly affectively committed employees experience a higher autonomy satisfaction). Still, existing literature concerning autonomy supportive environments and positive outcomes (e.g. affective commitment) could be supported with the results from this study. There indeed seems to be a significant relationship between the fulfillment of the need for autonomy and affective commitment.

Hypothesis 5: The satisfaction of the need for autonomy was found to have a positive relationship with affective commitment.

On the other hand, the satisfaction of the need for competence was not found to have a significant relationship with affective commitment; neither a positive nor a negative one. It was proposed that competence satisfaction would be negatively related to affective commitment since employees feel empowered to find a job somewhere else if they experience themselves as very competent at work (Marescaux et al., 2012). The affective commitment towards their current organizations should, therefore, decline (Marescaux et al., 2012). This assumption was also supported by findings, which showed that competence satisfaction was related to turnover intentions (Marescaux et al., 2012). However, the results from this study could not provide evidence for this assumption. Employees whose need for competence is satisfied neither feel more nor less committed to their current organizations. Reasons for this

insignificance, such as the specific component of organizational commitment assessed in this study (affective commitment), will be discussed in *Limitations and Future Research*. Alternatively, the positive and negative effects of the need satisfaction compensated one another. On the one hand, need satisfaction leads to positive outcomes for employees, since it helps them growing and being healthy (Deci & Ryan, 2000; Deci & Ryan, 2008a; Deci & Ryan, 2008b). This might have positive consequences for affective commitment. On the other hand, the feeling of high competence drives employees away from their current organizations. If both effects are about equal, the overall effect might disappear. Otherwise, it could also be the case that there is simply no relationship between competence satisfaction and affective commitment. For the affective commitment towards the organization, it would, therefore, make no difference if an employee is satisfied in her or his need for competence.

Hypothesis 6: The satisfaction of the need for competence was not found to have a negative relationship with affective commitment.

However, the satisfaction of the need for relatedness was found to be significantly related to affective commitment. This finding supports previous literature suggesting this relationship (e.g. Marescaux et al., 2012; Meyer et al., 2002). The more an employees' need for relatedness is satisfied, the more they are affectively committed to the organization. The need for relatedness, among others, states that employees want to be a part of a group (Baumeister & Leary, 1995); if e.g. coworkers offer them the chance to be a part of that specific group, the need for relatedness will be satisfied, which results in positive outcomes, such as affective commitment. Therefore, this study could underline that relatedness satisfaction has an important impact on affective commitment.

Hypothesis 7: The satisfaction of the need for relatedness was found to have a positive relationship with affective commitment.

In the theory of this study, it was proposed that the perceived usability of FWA plays an important role in the relationship between FWA and need satisfaction. Only if FWA seem usable and, therefore, not connected with any disadvantages, they would satisfy the specific needs and in turn be related to high affective commitment. Since only the relationship between FWA and autonomy satisfaction reached significance, the moderation was tested on this connection only. However, the previous assumption could not be supported. There are

several reasons for this insignificance. First, to assess the assumption, the independent variable had to be made metric. This was a workaround, since to the best of the author's knowledge no validated metric scale of FWA exists to this date. It is therefore very likely that scale inconsistencies prevented valuable results. This issue is an important theme in this study and will receive further attention in the section *Limitations and Future Research*. Second, this very same problem exists for the construct perceived usability as well. Even though perceived usability started to receive attention in the literature (e.g. Eaton, 2001), there still exists no validated scale. Nevertheless, perceived usability and possible disadvantages when using FWA are important topics. As discussed before, the availability of FWA, which was seen as a signal sent by the organization, was assessed. If employees perceive these offers as not usable, these signals get a different meaning. The organization might act as if it cares about employees' need satisfaction, but in reality, it is only a sham to employees. There can be many obstacles that hinder employees from using FWA. Maybe they have to announce a home office day weeks before its due and need to get the request confirmed by several superiors beforehand. Maybe coworkers and superiors act excluding if an employee makes use of FWA. One study e.g. found that especially men face stigmatization due to the use of FWA (Butts, Ng, Vandenberg, Dejoy, & Wilson, 2007). All these are reasons why the availability of FWA, and, therefore, the signal that comes with these offers, can lose its effectivity. This study failed to provide evidence for the importance of perceived usability, but nevertheless, and also because of facing several issues regarding the assessment, it stays a very important topic in the work environment that should not be underestimated.

Hypothesis 8: It could not be found that the perceived usability of FWA, temporal as well as spatial, moderate the relationship between FWA and the satisfaction of the need for autonomy.

Practical Implications

Summing up the results, even though there were many insignificances, offering employees FWA can still be recommended. The most flexible category (category 3) reached a significant relationship with affective commitment in the direct link, so it is recommended to offer policies that suit the employees best. There was an ongoing debate whether spatial flexibilities are as useful as temporal flexibilities (e.g. Allen et al., 2013; Hayman, 2009; Shockley & Allen, 2007; Thompson et al., 2014), but the results from this study suggest that a combination of both should be offered, so that employees feel fully supported in satisfying

their needs. Only with a generous supply of FWA, which are as flexible as the employees themselves, a successful management of work and private life can be enabled.

Two out of the three categories (category 2 and category 3) were significantly linked to autonomy satisfaction, which supports previous literature suggesting that an autonomy-supportive environment helps to satisfy the basic needs (e.g. Baard et al., 2004; Deci et al., 2001; Gillet et al., 2013; Gillet et al., 2012; Trépanier et al., 2015; Van den Broeck et al., 2008). Flexitime with core hours (category 1) seems to not provide enough flexibility to evoke this outcome. This is somewhat in line with the results from the first hypothesis, where the most flexible arrangement (category 3) was the only one with positive outcomes. So yet again, offering more flexibility than is usual can be recommended. On the other hand, competence satisfaction could not be achieved with FWA. Because it is important to satisfy all of the three basic needs to be fully healthy and nourished (Deci & Ryan, 2000; Deci & Ryan, 2008a; Deci & Ryan, 2008b), this outcome is unpleasant. If it is the case that FWA do not endorse competence satisfaction, organizations should offer supplementary or other policies to do so. Additional training, workshops, or education may be offered in combination with FWA. This way, employees could arrange their working times in order to participate in further training, which in turn could boost their competence feeling. All three categories were also not found to have a negative relationship with relatedness satisfaction, which is a delightful result. Even temporal and spatial flexibilities combined, the most flexible category in this study (category 3), could not evoke feelings of dissatisfaction regarding relatedness, as it was proposed in previous literature (Bartel et al., 2012; Broschak & Davis-Blake, 2006; Cooper & Kurland, 2002; Van Yperen et al., 2014). Still, as a possible prevention, implementing workgroups or a *jour fixe* could maybe buffer feelings of detachment or isolation in highly flexible employees. Anyway, employers can be advised to endorse FWA since they can, if sufficient, boost autonomy satisfaction, while not dissatisfying the need for relatedness. Even though FWA had no effect on competence satisfaction, they were still found to satisfy the need for autonomy and, therefore, considering the many positive outcomes from this satisfaction, the implementation of FWA can be highly recommended.

Autonomy and relatedness satisfaction themselves were positively and significantly related to affective commitment, which means that anything that satisfies these needs should be endorsed, since with a higher affective commitment additional positive outcomes (e.g. lower turnover) are associated (Allen & Meyer, 1996; Gautam et al., 2001; Meyer et al., 2002). Reviewing past literature that found links between basic need satisfaction and positive outcomes (see Deci et al., 2017; Deci & Ryan, 2000; for overviews) stresses the importance

of making sure that employees are able to satisfy all of their three basic needs; even though in this study competence satisfaction was not found to have a significant relationship with affective commitment. A dissatisfying or even thwarting context regarding competence satisfaction would truly be undesirable. Literature from SDT suggested that satisfied needs bring many benefits for employees, as well as employers (see Deci et al., 2017; Deci & Ryan, 2000; for overviews). This makes it important to further study arrangements and policies between employers and employees which endorse basic need satisfaction.

Although perceived usability of FWA failed to reach significance, it remains a very important facet of the work environment. Employees should get the chance to adjust their work and private life in a way that maximizes their autonomy, competence, and relatedness satisfaction. FWA which do not seem to be truly usable, e.g. because employees fear punishments like no promotions, do not support employees and their specific needs. Even though this study failed to prove its importance, it should not be underestimated.

Limitations and Future Research

First, specific characteristics of the sample need to be mentioned. Since it was a convenience sample, certain biases specific for this kind of sample need to be considered. The demographic distribution e.g. regarding age and education tended towards relatively young and well-educated participants. This is very likely due to the specific channels via which participants were recruited, such as SurveyCircle and Facebook groups, where students are searching for participants for their studies. It needs to be kept in mind that the sample did, therefore, not exactly represent the general population. Besides that, it was tried to provide results of the best quality possible; data that did not fulfill the quality standards in terms of time and answer patterns were deleted.

Second, as typical for cross-sectional studies, no conclusions about causation can be drawn from this study. In the literature, it is often mentioned that FWA lead to higher affective commitment and so on. Strictly, without a longitudinal study, results like this cannot be drawn. So, in this study, it is not clear whether participants with temporal and spatial flexibilities develop more affective commitment, or if highly affectively committed employees get more opportunities for FWA (because of their high commitment). The same argumentation can be applied to the specific needs. It was found that two categories of FWA had a significant and positive relationship with autonomy satisfaction. Maybe very autonomously working and, therefore, autonomously satisfied employees get more chances to adapt their work in terms of temporal and spatial boundaries than participants who do not

work as autonomously. Alternatively, it may be the case that these flexible opportunities do indeed satisfy the need for autonomy. It is the same for the relationships between the satisfied needs and affective commitment. Maybe highly affectively committed employees participate more at work, especially in the social context, and, therefore, are more satisfied regarding their need for relatedness. This would indicate a commitment - relatedness satisfaction direction and not a relatedness satisfaction - commitment direction. This is a typical issue for cross-sectional studies and should be kept in mind when interpreting the results. As for future research, more studies with a longitudinal character are needed.

Third, this study faced some scale issues. Since there is no validated scale to assess FWA, the many insignificances in this study could be due to scale inconsistencies. Some categories had too few cases to provide valuable results and had to be merged. It is arguable whether the categorical assessment was a success. Besides, the metric assessment of FWA for the moderation analysis was a workaround and once more stressed the importance of consistent scales. This problem sheds light on the need for future research regarding the proper assessment of FWA. Additionally, the construct perceived usability of FWA lacks a consistent scale as well. Furthermore, regarding the sample size for spatial flexibilities, the size ($n = 38$) was just on the edge of being too small. The insignificant finding concerning the moderation analysis, therefore, could be due to the assessment of FWA, the assessment of the perceived usability, or the small sample size regarding spatial flexibility; likely it was a combination of all three issues. Future research concerning the construction of scales for both aspects is definitely needed.

Fourth, since only the availability and not the actual usage of FWA was assessed, it can be concluded that for two categories the availability of FWA was sufficient as a measure. Nonetheless, in combination with the issue regarding a consistent scale of FWA, future research (e.g. Casper & Harris, 2008) should further investigate the differences between availability and usage of FWA.

Fifth, concerning the findings of the specific needs, this study generated some input for future research. Regarding FWA and competence satisfaction, it could be differentiated between different kinds of competence, such as competence on the job or competence concerning the temporal and spatial boundary management. The questions about competence in this study were focusing on feeling competent at work tasks and not the boundary management, which would likely be evoked by FWA. Future research might assess the latter feeling of competence and provide more nuanced results. Regarding the result concerning competence satisfaction and affective commitment, no significant relationship could be

found. Maybe the assessment of different facets of organizational commitment would have provided different results. It could be that a higher feeling of competence would decrease continuance commitment, which is solely based on calculation (Allen & Meyer, 1990), but not affective commitment, as it was assessed in this study. This is another aspect future research could investigate. It was proposed that competence satisfaction and affective commitment would have a negative relationship, but it might also be the case that positive and negative effects compensate one another, so that no effect can be found at all. Need satisfaction leads to positive outcomes since employees are supported (Deci & Ryan, 2000; Deci & Ryan, 2008a; Deci & Ryan, 2008b). On the other hand, competence satisfaction drives employees away from their organizations, since they feel competent enough to work somewhere else. If both effects are about equal, the overall effect might disappear. Future research should keep this argumentation in mind. Another study also failed to find a significant relationship between FWA and competence satisfaction (Van Yperen et al., 2014). The authors proposed that maybe the challenge of FWA only lasts for a short period of time and decreases with more practice (Van Yperen et al., 2014). Therefore, a lot of future research regarding competence satisfaction in combination with FWA is needed. Regarding FWA and relatedness satisfaction, it might have been the case that the assessed categories were not detaching enough to evoke measurable results. Future research could e.g. assess the hours spend with coworkers to try to further investigate relatedness and feelings of detachment or isolation.

Sixth, as mentioned in the beginning, satisfied and thwarted needs can lead to individual differences because individuals start to seek for substitutes if their basic needs get dissatisfied or thwarted (Sheldon & Krieger, 2004; Sheldon & Krieger, 2007; Radel et al., 2011; Williams et al., 2000). Literature suggested that everyone has those three basic needs and that they cannot be fully replaced by substitutes (Deci & Ryan, 2000). Possibly, these individual differences, emerged from dissatisfying or thwarting the needs throughout life (Deci, & Ryan, 2011), can actually have a massive impact. Maybe individuals do not only devalue the dissatisfied needs (Moller et al., 2010) but also actively fight against satisfying them. Only two out of three categories of FWA had a significant relationship with autonomy satisfaction, whereas all categories were not significantly related to the other needs. Maybe in the case of competence satisfaction, this need had been thwarted and, therefore, further actions had no effect on its satisfaction. Individual differences are always an important factor in the equation and this argumentation would yet again stress the importance of longitudinal studies.

Seventh, extending the topic concerning individual differences, participants job grades may have caused the insignificances, too (Phaik Lin, & Lee Ping, 2016). The majority of the sample ($n = 173$) had no managerial functions, even though a closer examination of the specific job grades would have been necessary to evaluate this assumption more closely. One study found that job autonomy only had a significant relationship with organizational commitment if participants were in a high job position (Sisodia & Das, 2013). Participants in lower job positions had a fewer organizational commitment, regardless of the autonomy given to them (Sisodia & Das, 2013). Therefore, the authors found a significant interaction effect of job autonomy and job level upon organizational commitment (Sisodia & Das, 2013). It might have been the case that participants got used to the little autonomy they were offered and, therefore, did not react to additional autonomy with the expected effects (e.g. satisfied competence) (Phaik Lin & Lee Ping, 2016), while still registering the additional autonomy. This phenomenon could be explained by individual differences regarding the needs, which arise from need thwarting.

Eighth, even though superficially checking via correlation analyses, no differences regarding gender were found in this study, future research is well advised to take a closer look at possible gender differences. Certain studies (e.g. Butts et al., 2007; Casper & Harris, 2008) found that men who make use of FWA can face more stigmatization and overall tend to experience a less family-friendly organizational culture than women.

Ninth, although POS was not assessed in this study, organizational support through need satisfaction was the main topic of this study. Further research could prove whether FWA support POS and investigate how the relationship works in detail. Also, the entanglement between the satisfaction of the basic needs and POS needs future studies in order to enable a better insight into this topic and provide employees a fully supportive environment.

In sum, further research still has a vast field to cover and many questions remain unanswered. This study tried to further provide information regarding FWA and employees' affective commitment. Some hypotheses could be supported while others could not; altogether it is important to help employees satisfying their needs in order to facilitate positive outcomes for both sides; employers and employees. FWA are just one of many ways to do so.

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Tables and Figures

Table 1. Sociodemographic data [Table].

Table 2. Flexible work arrangements - data [Table].

Table 3. Flexible work arrangements - categories [Table].

Table 4. Correlations [Table].

Figure 1. Summary of the Hypothesis [Chart].

Figure 2. Graphical representation of significant (bold lines) results [Chart].

Appendix

Abstract English

The labor force is changing regarding age, sex, and individual demands. Flexible work arrangements are one way to adapt human resource policies to this change in order to generate positive outcomes. Therefore, with a survey of 226 participants and linear regression, it was investigated, whether three categories of those policies have a positive relationship with affective commitment, the attachment to an organization. Results show that only the third category, a combination of temporal and spatial flexibilities, is related to affective commitment. The two remaining categories of temporal flexibilities failed to reach significance. The proposed relationship was further investigated by applying self-determination theory. This theory states that humans have three basic needs: the need for autonomy, competence, and relatedness. Need satisfaction is proposed to evoke positive outcomes like affective commitment. Through a mediation analysis, it was tried to investigate, whether flexible work arrangements satisfy those needs and if those satisfied needs have relationships with affective commitment. Results show that two of the three categories have significant relationships with autonomy satisfaction only. In turn, autonomy and relatedness satisfaction have significant relationships with affective commitment. The perceived usability of these policies was proposed as a moderator of the relationship between the categories and autonomy satisfaction because employees do not always feel free to use the offered arrangements. Results could not confirm a significant moderation. Limitations, future research, and practical implications are discussed.

Keywords: self-determination theory, flexible work arrangements, affective commitment

Abstract deutsch

Die Zusammensetzung der Beschäftigten verändert sich in Bezug auf ihr Alter, Geschlecht und individuelle Bedürfnisse. Zeitlich und örtlich flexible Arbeitsarrangements sind eine Möglichkeit, wie sich die Personalpolitik an diese Veränderungen anpassen kann um das Personal nicht zu verlieren. Mithilfe eines Fragebogens und 226 TeilnehmerInnen wurde anhand einer linearen Regression überprüft, ob diese Arrangements einen positiven Zusammenhang mit affektiver Bindung zur Firma aufweisen. Die Ergebnisse zeigen, dass nur eine Kombination von zeitlichen und örtlichen Flexibilitäten einen positiven Zusammenhang mit affektiver Bindung aufweisen. Die anderen zwei zeitlichen Arrangements weisen keinen signifikanten Effekt auf. Der Zusammenhang wurde mittels Selbstbestimmungstheorie genauer untersucht. Diese Theorie besagt, dass Menschen drei grundlegende Bedürfnisse

haben: das Bedürfnis nach Autonomie, nach Kompetenz und nach Verbundenheit. Die Befriedigung dieser Bedürfnisse soll im Zusammenhang mit positiven Auswirkungen wie verstärkter affektiver Bindung stehen. Mithilfe einer Mediationsanalyse wurde untersucht, ob die flexiblen Arrangements diese Bedürfnisse befriedigen und ob diese Bedürfnisbefriedigungen einen Zusammenhang mit affektiver Bindung aufweisen. Die Ergebnisse zeigen, dass zwei der drei Kategorien von Arrangements eine signifikante Beziehung mit Autonomiebefriedigung haben. Autonomie- und Verbundenheitsbefriedigung wiederum, haben eine signifikante Beziehung mit affektiver Bindung. Die subjektiv empfundene Nutzbarkeit der Arrangements wurde als Moderator für die Beziehung zwischen den Arrangements und Autonomiebefriedigung untersucht. Die Ergebnisse konnten allerdings keinen signifikanten Moderator bestätigen. Einschränkungen der Studie, zukünftige Forschung und praktische Implikationen werden diskutiert.

Schlüsselwörter: Selbstbestimmungstheorie, flexible Arbeitsarrangements, affektive Bindung

English Questionnaire



0% completed

Dear Ladies or Gentleman,

thank you for supporting my master thesis on the subject of „**flexible work**“.
On the following pages you will find questions and statements about your work.
I am inviting you to evaluate those statements within the given response options.
Therefore please, for every question, mark the answer which fits you or your work the most.
Of course your information will be treated confidentially and anonymously.

This questionnaire will approximately take you **5-10 minutes**.

Please mind that teachers, self-employed persons and persons, who work less than 30 hours a week can't be considered in this questionnaire.

If you have any further queries, please do not hesitate to contact me:

a01263247@unet.univie.ac.at

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8% completed

Gender

- ☐ male
☐ female

Age

- ☐ 30 or younger
☐ 31 – 45
☐ 46 – 64
☐ 65 or older

Education level

- ☐ no graduation
☐ compulsory school
☐ completed vocational training
☐ high school diploma
☐ university degree

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17% completed

Do you work at least 30 hours a week?

- ☐ yes
☐ no

Are you self-employed?

- ☐ yes
☐ no

Do you work as a teacher?

- ☐ yes
☐ no

Do you have managerial functions?

- ☐ yes
☐ no

For how long have you been working for your organization?

If self-employed: For how long have you been self-employed?

(rounded in full years)

Next

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26% completed

Please mark the following statement which fits your job the most

- | | | | |
|----------------------------|----------------------------------|-------------------------------------|----------------------------------|
| ☐ | ☐ | ☐ | ☐ |
| I have fixed working hours | I have flexitime with core hours | I have flexitime without core hours | I have trust-based working hours |

Next

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37% completed

Please mark the following statements which fit your temporal flexibility the most

	totally disagree	disagree	neither agree nor disagree	agree	totally agree
I feel free to use the flexible work arrangement without getting disadvantaged	☐	☐	☐	☐	☐
The use of the flexible work arrangement facilitates planning my private life	☐	☐	☐	☐	☐
The use of the flexible work arrangement will in no way jeopardise my future with the company	☐	☐	☐	☐	☐

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Please mark the following statement which fits your job the most

☐	☐	☐	☐	☐
I have a fixed workplace	I have an unbound workplace (e.g. desksharing)	I have telework (e.g. home office) with core hours	I have telework (e.g. home office) without core hours	I work at the customer's side/I am occupationally on the road (e.g. field service)

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60% completed

Please mark the following statements which fit your spatial flexibility the most

	totally disagree	disagree	neither agree nor disagree	agree	totally agree
I feel free to use the flexible work arrangement without getting disadvantaged	☐	☐	☐	☐	☐
The use of the flexible work arrangement facilitates planning my private life	☐	☐	☐	☐	☐
The use of the flexible work arrangement will in no way jeopardise my future with the company	☐	☐	☐	☐	☐

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74% completed

Please mark the following statement/s, which fit/s you or your job the most

	totally disagree	disagree	neither agree nor disagree	agree	totally agree
I feel like I can be myself at my job	☐	☐	☐	☐	☐
At work, I often feel like I have to follow other people's commands	☐	☐	☐	☐	☐
If I could choose, I would do things at work differently	☐	☐	☐	☐	☐
The tasks I have to do at work are in line with what I really want to do	☐	☐	☐	☐	☐
I feel free to do my job the way I think it could best be done	☐	☐	☐	☐	☐
In my job, I feel forced to do things I do not want to do	☐	☐	☐	☐	☐

Please mark the following statement/s, which fit/s you or your job the most

	totally disagree	disagree	neither agree nor disagree	agree	totally agree
I don't really feel competent in my job	☐	☐	☐	☐	☐
I really master my tasks at my job	☐	☐	☐	☐	☐
I feel competent at my job	☐	☐	☐	☐	☐
I doubt whether I am able to execute my job properly	☐	☐	☐	☐	☐
I am good at the things I do in my job	☐	☐	☐	☐	☐
I have the feeling that I can even accomplish the most difficult tasks at work	☐	☐	☐	☐	☐

Please mark the following statement/s, which fit/s you or your job the most

	totally disagree	disagree	neither agree nor disagree	agree	totally agree
I don't really feel connected with other people at my job	☐	☐	☐	☐	☐
At work, I feel part of a group	☐	☐	☐	☐	☐
I don't really mix with other people at my job	☐	☐	☐	☐	☐
At work, I can talk with people about things that really matter to me	☐	☐	☐	☐	☐
I often feel alone when I am with my colleagues	☐	☐	☐	☐	☐
Some people I work with are close friends of mine	☐	☐	☐	☐	☐

Next



87% completed

Please mark the following statement/s, which fit/s you or your job the most

	totally disagree	disagree	neither agree nor disagree	agree	totally agree
I would be very happy to spend the rest of my career with this organization	☐	☐	☐	☐	☐
I enjoy discussing my organization with people outside it	☐	☐	☐	☐	☐
I really feel as if this organization's problems are my own	☐	☐	☐	☐	☐
I think that I could easily become as attached to another organization as I am to this one	☐	☐	☐	☐	☐
I do not feel like 'part of the family' at my organization	☐	☐	☐	☐	☐
I do not feel 'emotionally attached' to this organization	☐	☐	☐	☐	☐
This organization has a great deal of personal meaning for me	☐	☐	☐	☐	☐
I do not feel a strong sense of belonging to my organization	☐	☐	☐	☐	☐

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Thank you for participating!

I would like to thank you for your assistance.

If you have any further queries, please do not hesitate to contact me: a01263247@unet.univie.ac.at

Your answers were saved, you can close this browser window now.

For users of SurveyCircle (www.surveycircle.com): The survey code is: D2VX-DPPY-3HET-NU1P

Validation code for POLLPOOL-users (WWW.POLL-POOL.COM): ZGCBX

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Deutscher Fragebogen



0% ausgefüllt

Einleitung

Sehr geehrte Damen und Herren,

vielen Dank, dass Sie mich bei meiner Masterarbeit zum Thema „**Flexible Arbeit**“ unterstützen.

Auf den folgenden Seiten finden Sie Fragen und Aussagen zu Ihrer Arbeit.

Ich lade Sie ein, diese Aussagen anhand vorgegebener Antwortalternativen zu beurteilen.

Kreuzen Sie dazu bitte für jede Frage die Antwort an, die am ehesten auf Sie oder Ihre Arbeit zutrifft.

Selbstverständlich werden Ihre Angaben anonym und streng vertraulich behandelt.

Die Bearbeitung dieses Fragebogens sollte in etwa **5-10 Minuten** in Anspruch nehmen.

Bitte beachten Sie, dass LehrerInnen, Selbstständige und Personen, die weniger als 30 Stunden in der Woche arbeiten, bei diesem Fragebogen nicht berücksichtigt werden können.

Für Rückfragen stehe ich Ihnen unter folgender E-Mail Adresse gerne zur Verfügung:

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8% ausgefüllt

Geschlecht

- ☐ männlich
☐ weiblich

Alter

- ☐ bis 30
☐ 31 – 45
☐ 46 – 64
☐ ab 65

Höchster abgeschlossener Bildungsgrad

- ☐ kein Abschluss
☐ Pflichtschule oder Realschule
☐ abgeschlossene Berufsausbildung oder Fachschule
☐ Matura/Abitur
☐ Hochschulabschluss

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17% ausgefüllt

Arbeiten Sie mindestens 30 Stunden in der Woche?

- ☐ ja
☐ nein

Sind Sie beruflich selbstständig?

- ☐ ja
☐ nein

Arbeiten Sie als Lehrer/in?

- ☐ ja
☐ nein

Haben Sie Führungsaufgaben?

- ☐ ja
☐ nein

Seit wie langem sind Sie schon für ihre Firma tätig?

Bei Selbstständigkeit: Wie lange sind Sie schon selbstständig?

(gerundet auf ganze Jahre)

Weiter

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26% ausgefüllt

Bitte kreuzen Sie folgende Aussage an, die auf Ihre Arbeit zutrifft

☐
Ich habe fixe
Arbeitszeiten

☐
Ich habe Gleitzeit mit
Kernzeit

☐
Ich habe Gleitzeit ohne
Kernzeit

☐
Ich habe
Vertrauensarbeitszeit

Weiter

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37% ausgefüllt

Bitte kreuzen Sie folgende Aussagen an, die auf Ihre zeitliche Flexibilität zutreffen

	trifft überhaupt nicht zu	trifft eher nicht zu	teils-teils	trifft eher zu	trifft vollkommen zu
Ich habe das Gefühl, die Flexibilität nutzen zu können ohne benachteiligt zu werden	☐	☐	☐	☐	☐
Die Inanspruchnahme dieser Flexibilität erleichtert mir die Planung meines Privatlebens	☐	☐	☐	☐	☐
Die Inanspruchnahme dieser Flexibilität gefährdet in keinsten Weise meine Zukunft in der Firma	☐	☐	☐	☐	☐

Weiter

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47% ausgefüllt

Bitte kreuzen Sie folgende Aussage an, die auf Ihre Arbeit zutrifft

☐	☐	☐	☐	☐
Ich habe einen fixen Arbeitsplatz	Ich habe einen ungebundenen Arbeitsplatz (z.B. Desksharing)	Ich habe Telearbeit (z.B. Home Office) mit Kernzeit	Ich habe Telearbeit (z.B. Home Office) ohne Kernzeit	Ich arbeite beim Kunden/Ich bin beruflich unterwegs (z.B. Außendienst)

Weiter

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60% ausgefüllt

Bitte kreuzen Sie folgende Aussagen an, die auf Ihre örtliche Flexibilität zutreffen

	trifft überhaupt nicht zu	trifft eher nicht zu	teils-teils	trifft eher zu	trifft vollkommen zu
Ich habe das Gefühl, die Flexibilität nutzen zu können ohne benachteiligt zu werden	☐	☐	☐	☐	☐
Die Inanspruchnahme dieser Flexibilität erleichtert mir die Planung meines Privatlebens	☐	☐	☐	☐	☐
Die Inanspruchnahme dieser Flexibilität gefährdet in keinsten Weise meine Zukunft in der Firma	☐	☐	☐	☐	☐

Weiter

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74% ausgefüllt

Bitte kreuzen Sie folgende Aussage/n an, die auf Sie oder Ihre Arbeit zutrifft/zutreffen

	trifft überhaupt nicht zu	trifft eher nicht zu	teils-teils	trifft eher zu	trifft vollkommen zu
Ich habe das Gefühl, dass ich in der Arbeit ich selbst sein kann	☐	☐	☐	☐	☐
In der Arbeit habe ich oft das Gefühl, dass ich Befehle von anderen befolgen muss	☐	☐	☐	☐	☐
Wenn ich es mir aussuchen könnte, würde ich die Dinge in der Arbeit anders machen	☐	☐	☐	☐	☐
Die Aufgaben, die ich in der Arbeit erledigen muss, sind das, was ich wirklich machen will	☐	☐	☐	☐	☐
Ich habe das Gefühl, dass ich meine Arbeit auf die Weise erledigen kann, wie ich denke, dass sie am Besten erledigt werden kann	☐	☐	☐	☐	☐
In meiner Arbeit fühle ich mich gezwungen, Dinge zu tun, die ich nicht machen will	☐	☐	☐	☐	☐

Bitte kreuzen Sie folgende Aussage/n an, die auf Sie oder Ihre Arbeit zutrifft/zutreffen

	trifft überhaupt nicht zu	trifft eher nicht zu	teils-teils	trifft eher zu	trifft vollkommen zu
Ich fühle mich nicht kompetent in meinem Job	☐	☐	☐	☐	☐
Ich beherrsche die Aufgaben in meinem Job sehr gut	☐	☐	☐	☐	☐
Ich fühle mich kompetent in meinem Job	☐	☐	☐	☐	☐
Ich zweifle daran, ob ich fähig bin, meinen Job ordentlich auszuführen	☐	☐	☐	☐	☐
Ich bin gut in den Dingen die ich in meinem Job tue	☐	☐	☐	☐	☐
Ich habe das Gefühl, dass ich selbst die schwersten Aufgaben in meinem Job ausführen kann	☐	☐	☐	☐	☐

Bitte kreuzen Sie folgende Aussage/n an, die auf Sie oder Ihre Arbeit zutrifft/zutreffen

	trifft überhaupt nicht zu	trifft eher nicht zu	teils-teils	trifft eher zu	trifft vollkommen zu
Ich fühle mich nicht wirklich verbunden mit anderen Leuten in meinem Job	☐	☐	☐	☐	☐
In der Arbeit fühle ich mich wie ein Teil einer Gruppe	☐	☐	☐	☐	☐
Ich verstehe mich nicht mit anderen Leuten in meinem Job	☐	☐	☐	☐	☐
In der Arbeit kann ich mit Leuten über Dinge sprechen die mir wirklich wichtig sind	☐	☐	☐	☐	☐
Ich fühle mich oft einsam wenn ich mit meinen Kollegen zusammen bin	☐	☐	☐	☐	☐
Manche Leute, mit denen ich arbeite, sind enge Freunde von mir	☐	☐	☐	☐	☐

Weiter



87% ausgefüllt

Bitte kreuzen Sie folgende Aussage/n an, die auf Sie oder Ihre Arbeit zutrifft/zutreffen

	trifft überhaupt nicht zu	trifft eher nicht zu	teils-teils	trifft eher zu	trifft vollkommen zu
Ich wäre sehr glücklich, den Rest meiner Karriere in dieser Firma zu verbringen	☐	☐	☐	☐	☐
Ich genieße es, mit Außenstehenden über meine Firma zu reden	☐	☐	☐	☐	☐
Es fühlt sich so an, als wären die Probleme der Firma meine eigenen	☐	☐	☐	☐	☐
Ich glaube, dass ich leicht mit einer anderen Firma so verbunden sein könnte wie mit dieser	☐	☐	☐	☐	☐
Ich fühle mich nicht wie ein „Teil der Familie“ in meiner Firma	☐	☐	☐	☐	☐
Ich fühle mich nicht „emotional verbunden“ mit dieser Firma	☐	☐	☐	☐	☐
Diese Firma hat eine große persönliche Bedeutung für mich	☐	☐	☐	☐	☐
Ich habe kein starkes Zugehörigkeitsgefühl zu meiner Firma	☐	☐	☐	☐	☐

Weiter

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Vielen Dank für Ihre Teilnahme!

Ich möchte mich ganz herzlich für Ihre Mithilfe bedanken.

Für Rückfragen stehe ich Ihnen unter folgender E-Mail Adresse gerne zur Verfügung: a01263247@unet.univie.ac.at

Ihre Antworten wurden gespeichert, Sie können das Browser-Fenster nun schließen.

Für Nutzer von SurveyCircle (www.surveycircle.com): Der Survey Code lautet: D2VX-DPPY-3HET-NU1P

VALIDIERUNGSCODE FÜR POLLPOOL-BENUTZER (WWW.POLL-POOL.COM): ZGCBX

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Statement under Oath

I, Lisa Christine Schuster, born 18.04.1994, declare under oath that I have independently authored this thesis with the topic

“The Importance of Need Satisfaction for Flexible Work Arrangements.”

I have not used other than the declared sources. All material used either literally or by content from published or non-published sources are explicitly marked at each point by quoting the source. This thesis has not been submitted to any other examination board in the same or similar form.

Vienna, 22.03.2018

A handwritten signature in cursive script, reading 'Schuster', written in black ink.