**Individualized work arrangements and socio-economic factors in relation to motivation to continue working: A multilevel study of municipal influences**

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**ABSTRACT**

This paper introduces a socio-economic perspective on the relationships of idiosyncratic deals (i.e., i-deals) with motivation to continue working beyond retirement. On the basis of work adjustment theory, we expected that i-deals enable employees to engage in innovative behavior and professional development, through which they experience more work engagement, subsequently facilitating higher motivation to continue working. Moreover, on the basis of signaling theory, we introduced two socio-economic factors to explain when i-deals are most effective in the context of the current study among teachers: municipal child population growth and municipal unemployment. A study among 1,210 teachers in the Netherlands was conducted to test the mediation and moderation model. Results show positive indirect relationships of growth i-deals with motivation to continue working through innovative work behavior, professional development and work engagement, while indirect relationships were negative for accommodative i-deals. Moreover, child population growth boosted the relationships of i-deals, while unemployment accentuated the effects of professional development. The study contributes to the literature by showing the importance of socio-economic factors in explaining the relationships of i-deals and individualized HRM.

**Keywords:** Idiosyncratic deals, i-deals, motivation to continue working, socio-economic factors, population growth, unemployment

RUNNING HEAD: I-DEALS AND CONTINUING WORKING

Workplaces around the world will increasingly be composed of older workers (Ebbinghaus, 2006). Organizations have growing awareness of the need to motivate workers to continue working beyond their retirement (Bal et al., 2012). With projected labor shortages in some sectors, such as healthcare and education, more organizations are trying to retain their older workers and work beyond their statutory retirement age. Moreover, people are increasingly reaching their retirement age healthily, and may desire to continue working and contribute to society. If organizations want to manage this well, an individualized approach to the issue of working beyond retirement is necessary as older employees not only differ from younger employees in their motivation at work, but also from other older employees (Bal & Jansen, 2015; Kooij et al., 2008; Riekhoff, 2019). In the current study, we focus particularly on idiosyncratic deals (henceforth i-deals), which denote the individual work arrangements negotiated between an employee and the organization (Rousseau, 2005), and have been shown to be particularly important for older workers (Bal & Boehm, 2019; Bal et al., 2012; Oostrom, Pennings & Bal, 2016).

Despite the knowledge that i-deals are important in relation to retirement, there are still important gaps in the literature. First, there is little empirical understanding of *why* i-deals are important in motivating employees to continue working. Bal and colleagues (2012) found that i-deals relate positively to motivation to continue working, and that these relationships were accentuated in departments with supportive cultures towards older workers. However, so far there has been no research investigating mediating mechanisms, which is important because it may help organizations manage the process of i-deals more carefully in their organizations (Bal & Boehm, 2019; Liao et al., 2016). To do so, we build on work-adjustment theory (Baltes et al., 1999) to explain how i-deals affect retirement outcomes. Work adjustment theory predicts that people are motivated and performing in their work under conditions of high correspondence (or fit) between the employee and the job (Baltes et al., 1999). Accordingly, we explain how i-deals allow people to adjust better in their work, and thereby obtaining greater motivation to continue working.

Second, research on predictors of motivation to continue working has focused either on individual-level factors, such as i-deals (e.g., Wang & Shultz, 2010), or on societal-level factors (e.g., De Preter et al., 2013; Radl, 2013), but has hardly taken into account the interplay of these factors (*cf.* Johns, 2018). In other words, employee motivation is likely to result from work experiences *as well as* the socio-economic environment around the employee (Dingemans et al., 2017). For instance, retirement decisions are influenced by regional unemployment (Alavinia & Burdorf, 2008; Munnell et al., 2008). We use signaling theory (Connelly et al., 2011; Spence, 1973) to argue that socio-economic factors play an important role in signaling to employees whether negotiation of i-deals is beneficial. Hence, socio-economic factors function as signals to employees about the relevance of their initiatives at work in relation to their decision whether or not to continue working beyond retirement.

The current paper investigates the mediated relationships of i-deals with motivation to continue working among a sample of 1,210 teachers in the Netherlands. The present study combines work adjustment theory (Baltes et al., 1999) as well as signaling theory (Spence, 1973) to serve as theoretical lenses to investigate the interplay among i-deals and socioeconomic context to explain employees’ motivation to continue working. We use municipal-level socio-economic data to ascertain the influence of two socio-economic factors in the work of teachers: municipal child population growth and municipal unemployment, which are important as they indicate both the need for teaching jobs in the future, as well as the available supply of teachers within a municipality. Figure 1 shows the conceptual multilevel model.

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Insert Figure 1 about here

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This paper makes multiple contributions to the literature on i-deals, retirement, and HRM. First, the paper explores the process through which i-deals relate to motivation to continue working, thereby refining our understanding of the reasons why i-deals may have long-term benefits for employees and organizations (Liao et al., 2016). While Bal et al. (2012) have shown that i-deals relate positively to motivation to continue working, the current study extends this research. It investigates mediators in this relationship, thereby elucidating the mechanisms that underpin why employees are more highly motivated to continue working if they are able to negotiate i-deals. Understanding how i-deals relate to motivation to continue working also offers insights into individualized HRM, or how i-deals add to formal HR-policies (Bal & Dorenbosch, 2015; Rofcanin et al., 2019). This study shows how i-deals relate to employee attitudes and behavior.

Moreover, the study also shows that the strength of the relationships of i-deals are embedded in the broader socio-economic context where one works. The paper contributes to understanding the influences of the socio-economic context. It has long been argued that context is important (Johns, 2018), yet there are few studies that integrate context both theoretically and empirically.

**THEORY AND HYPOTHESES**

Figure 1 shows the conceptual model underpinning this research. We develop both a mediation model, and two contextual factors that moderate the relationships under study. We differentiate between two types of i-deals (growth and accommodative; Bal, 2017) that should encourage motivation to continue working. We introduce two mediating steps in these relationships. First, we expect that i-deals spur employees to engage in innovative work behavior and professional development. Innovative work behavior is defined as mundane and voluntary actions by employees in their units or organization by introducing new ways of working that enhance processes and functioning (Morrison & Phelps, 1999). Professional development activities are defined as those activities performed by employees to enhance their abilities to conduct their work successfully and to grow in one’s career. Development activities are concrete activities that employees undertake to enhance their skills and may be both general skills as well as domain-specific skills, such as in the case of the current study aimed at teachers in school (Van der Heijden et al., 2015). When employees engage in these behaviors, they are expected to become more engaged at work, through which they are more highly motivated to continue working.

The study is conducted among Dutch teachers, whose retirement-related decisions are likely to result because of i-deals *and* the socioeconomic context. In the Dutch context, two factors are likely to serve as important signals for teachers about the usefulness and attractiveness of continuing working. On the one hand, growth of the total population of children may mean greater influx of children into schools, while on the other hand, unemployment may create more competition for teaching jobs, and thus a lower attractiveness of continued working. Hence, these two factors were selected as important moderators in the mediation model.

Stimulating older workers to continue working after their retirement is on the agenda of many organizations (Wang & Shultz, 2010). One of the ways through which employers may enhance motivation is through i-deals (Bal et al., 2012). As aging is associated with greater heterogeneity in work-related needs and preferences (Bal & Boehm, 2019; Bal & Jansen, 2015; Kooij et al., 2008), i-deals respond to the individualized approach that is necessary to retain and motivate older employees. I-deals describe the individualized work arrangements that employees negotiate with their organizations (Rousseau, 2005; Rousseau et al., 2006). Standardized arrangements are described in collective labor agreements (in addition to national regulation and law). Often, such frameworks offer general guidance towards employee rights, incentives and renumeration, working hours, and development budgets, but the precise agreements have to be negotiated between the individual employee and the organization. I-deals are often about the translation of general guidelines into concrete practices and agreements, and about complementary opportunities, such as development, training, and flexibility in working hours (Rousseau et al., 2006). Research has shown that i-deals are positively related to motivation to continue working (Anderson & Morgan, 2017; Bal et al., 2012).

Theoretically, i-deals align with work adjustment theory (Baltes et al., 1999). Work adjustment theory predicts that employee behavior results from correspondence between the abilities of the employee and the requirements of a job (Edwards, 2008). I-deals are proposed to lead to greater work adjustment, as their individualized nature entails a personalized and flexible way of adjusting to work demands (Bal et al., 2012). Greater adjustment is also important to conduct the job sustainably, and this may be conducted through negotiation of i-deals or individualized job crafting (Kooij et al., 2017). Thus, a work adjustment perspective on i-deals predicts that i-deals allow employees to obtain greater fit between themselves and their jobs, so that they can invest their time and energy into important things at work, such as learning and creativity. However, employees may have different motives to negotiate i-deals (Bal, 2017; Lee et al., 2015).

There are two types of i-deals which are relevant in the context of continued working: growth and accommodative i-deals (Bal & Vossaert, 2019). While most i-deals research has focused on i-deal content (i.e., *what* kind of individualized deals employees negotiate with their employers; Rosen et al., 2013), recent research has shown that it is important to understand *why* employees negotiate, and what aims they have for initiating i-deal negotiation (Bal & Vossaert, 2019). Growth i-deals are defined as the idiosyncratic arrangements negotiated by employees aimed at advancement in one’s organization and career, while accommodative i-deals are defined as idiosyncratic arrangements negotiated to repair a mismatch in one’s job (Bal & Vossaert, 2019). Both are important in the context of retirement decision making, as growth i-deals may facilitate older workers’ needs for new opportunities and learning, while accommodative i-deals help them in coping with age-related losses. Accommodative i-deals focus on individualized agreements that prevent workload from becoming too burdensome, or to combine work with private life. Workers may have different reasons for using accommodative i-deals, such as a health issues which prevent them from investing fully in their work and careers (Kooij et al., 2008), or a greater focus on family life and non-work activities (Greenhaus & Kossek, 2014; Mainiero & Sullivan, 2005).

Theoretically, growth i-deals may enhance adjustment, as they are aimed at developing employees’ skills, through which they are better able to cope with their work demands, and will be more highly motivated to continue working. Accommodative i-deals, however, are less likely to do so, as workers who negotiate accommodative i-deals may be focused on gradual or temporary disengagement from work, prioritization of other areas in life such as family and volunteering work, decreased workloads and more flexibility (Bal & Jansen, 2015; Kooij et al., 2017). As these i-deals may also be negotiated among workers who are struggling to cope with job demands, they will also be less likely to be motivated to continue working.

**Mediating Mechanisms**

We argue that i-deals relate to motivation to continue working through two key mechanisms. I-deals have been shown to be related to engagement-related outcomes, such as commitment (Hornung et al., 2008), and organizational citizenship behaviors (Anand et al., 2010). In line with work-adjustment theory (Baltes et al., 1999), growth i-deals enable employees to create a better job fit, which subsequently relates to the ability to conduct work in a more sustainable way (Bal et al., 2012; Van der Heijden et al., 2015). As a result, employees who have successfully negotiated growth i-deals, will be more likely to be innovative at work and develop themselves professionally. It is likely that growth i-deals will be positively related to innovative work behaviors as a work-adjustment perspective postulates that employees with i-deals are actively shaping their environment, thereby innovating their own jobs to improve fit (Kooij et al., 2017). Moreover, work adjustment theory also predicts that high correspondence achieved through i-deals, create positive psychological states that lead to positive behavior and attitudes of the employee (Baltes et al., 1999). This may include feelings of obligation and commitment to reciprocate to the organization, thereby engaging in making innovative suggestions (Ng & Feldman, 2015).

We also expect that growth i-deals will spur professional development, as employees with growth i-deals will be facilitated to develop themselves. Professional development is important in the context of the current study focusing on teachers (Desimone et al., 2002), as well as in the context of continued working (Polat et al., 2017), as development enhances employees’ skills as well as motivation in the job (Van der Heijden et al., 2015).

Accommodative i-deals are expected to be negatively related to innovative work behavior and professional development, as they are aimed at maintenance of current functioning rather than expansion of skills at work and move their focus away from work (Bal & Vossaert, 2019). Accommodative i-deals tend to be negotiated to reduce demands and workload, and are focused on work adjustment on the basis of lower workload, in order to be able to cope with job demands and not burning out. As a consequence, employees who have negotiated accommodative i-deals are more likely to invest their time and energy elsewhere (e.g., in their family life or their personal health; Greenhaus & Kossek, 2014). Therefore, they will be less likely to exert energy into engaging in innovative behaviors and professional development, as the i-deals they have negotiated indicate a withdrawal from their work roles, and a work adjustment towards lowering their role in their organizations. Hence, we expect accommodative i-deals to be associated with lower investments in innovation and development. In sum, Hypothesis 1 is:

*Hypothesis 1a: Growth i-deals are positively related to innovative work behaviors and professional development activities.*

*Hypothesis 1b: Accommodative i-deals are negatively related to innovative work behaviors and professional development activities.*

Subsequently, we expect innovative work behavior and professional development to be related to higher work engagement (Schaufeli & Bakker, 2004). It is well established that when employees are able to adjust their work in line with their preferences, they experience more work enjoyment (Baltes et al., 1999). Through growth i-deals, employees actively create better correspondence with their jobs through innovative behavior and skill development. Successful innovative behavior and developmental experiences at work further enhance intrinsic motivation (Van der Heijden et al., 2015). Hence, work adjustment theory predicts that higher correspondence resulting from growth i-deals (vs. accommodative i-deals) leads to more work enjoyment (Baltes et al., 1999). I-deals are expected to be important for enhancing work behaviors for retirement preparation such as innovative behavior and development (Polat et al., 2017), which will subsequently relate to greater work engagement.

While previous research has shown that innovative behavior and development are outcomes of engagement, there is also ample evidence that suggests that engagement is the outcome of work behavior. For instance, Simbula and Guglielmi (2013) found reciprocal relationships between work engagement and OCB, while Hakanen et al. (2008) found that the reciprocal relationships of engagement and personal initiative were more or less similar over time. In the context of the current study, engagement is likely to result from work behaviors that have been the consequence of negotiated i-deals. Employees who have negotiated growth i-deals to be innovative in their work and develop themselves, will become more engaged as a result. In contrast, people who have negotiated accommodative i-deals engage less in innovative behavior and professional development, and due to having priorities elsewhere, they are likely to be less engaged. We therefore expect that:

*Hypothesis 2: (a) Innovative work behavior and (b) professional development activities are positively related to work engagement.*

Furthermore, work engagement is likely to be positively related to motivation to continue working. In line with work-role attachment theory (Carter & Cook, 1995), employees who are highly engaged in their work, will be more highly motivated to continue those work roles, and leaving a job would create dissatisfaction (see also Topa et al., 2009). Hence, H3 is:

*Hypothesis 3: Work engagement is positively related to motivation to continue working.*

Combining the first three hypotheses, we expect a positive indirect effect of growth i-deals on motivation to continue working. As shown previously, i-deals are positively related to motivation to continue working (Bal et al., 2012). We advance understanding of these relationships and theorize that innovative work behavior, professional development activities, and work engagement act as mediators in these relationships. More specifically, in line with work-adjustment theory (Baltes et al., 1999), growth i-deals enable employees to engage in innovation of their tasks and jobs, and to develop themselves to create a better job fit. In contrast, accommodative i-deals decrease demands on employees, and are related to disengagement from work roles, and therefore lower innovative work behavior and professional development. Innovation and development are likely to result in higher work engagement, which subsequently enables employees to become more highly motivated to continue working. While it may be the case that employees who want to continue working beyond their retirement are more likely to negotiate i-deals, our current theoretical model aligns most closely to the work adjustment model (Baltes et al., 1999). This model posits that adaptations to one’s work environment (e.g., i-deal negotiation) allows individuals to adapt their behavior at work, which creates positive psychological states and consequently higher motivation at work (Bal et al., 2012). Hence, this leads to hypothesis 4:

*Hypothesis 4: There are (a) positive indirect effects of growth i-deals and (b) negative indirect effects of accommodative i-deals on motivation to continue working via innovative work behavior, professional development, and work engagement.*

**Socio-Economic Factors as Moderators**

In addition, we expect that the mediated relationships between i-deals and motivation to continue working are moderated by socio-economic factors as research highlights the importance of contexts in shaping attitudes and behavior at work (Johns, 2018). Socio-economic factors constrain and create opportunities that not only influence organizational behavior and but also shape its meaning by moderating relationships (Johns, 2018).

Thus, motivation and decisions to continue working beyond retirement are not just resulting from one’s work experiences, but are also influenced by the wider environment, including socio-economic context factors (Radl, 2013). Theoretically, socio-economic factors act as labor market signals (Connelly et al., 2011; Spence, 1973), which convey information to people about the likelihood of their behaviors to result in desired outcomes. Moreover, our premise is that, through signals, the socioeconomic environment shapes individuals’ perception on desired outcomes in general and on how to decide on retirement specifically (Polat et al., 2017). Many studies have shown that social knowledge does not reside within individuals, but are shared by communities into representations that are interpreted by individuals (e.g., Markov, 2000; Roland-Lévy & Berjot, 2009).

In the context of postponing retirement (Wang & Shultz, 2010), two socio-economic principles are relevant for people in determining whether they continue working. First, people need to ask themselves whether there will be *demand* for their jobs in the future (i.e., the pull-factor towards employment; Lazear, 1979). Second, the intensity of competition matters for people, or how many other workers could potentially take over their jobs (i.e., a push-factor out of employment; Lazear, 1979). In economic terms, these represent the demand for labor and the supply of workers and describe the two main theoretically relevant, yet distinct, indicators for individual decision making and behaviors (Lazear, 1979).

In the current study of Dutch teachers, two socio-economic factors are particularly relevant for future job perspectives: child population growth and unemployment. Child population growth refers to the growth or decline of young children over the recent years, and thus represents the demand side for labor. Unemployment refers to the percentage of adults receiving unemployment benefits (Coleman & Rowthorn, 2011; Statistics Netherlands, 2017), and represents the supply side of workers. These factors are especially important at the level of the local *municipality* that teachers work in, as extensive research has shown that teachers (especially at primary and secondary educational level) tend to work close to their homes, and generally do not move when changing jobs. Thus, they generally show low mobility in terms of changing employers outside of their local municipality (Barbieri, Rossetti, & Sestito, 2011; SBO, 2011; Falch & Strom, 2004). Hence, socio-economic factors that influence teachers in making decisions about their retirement are most likely to result from their own communities (i.e., the municipality in which their school is located).

We expect child population growth and municipal unemployment to have differential effects on the relationships under study. Municipal child population growth indicates the demand side for labor, and has a proximal, direct effect on teachers work experiences. As child population growth or decline directly translates into the classroom, with higher or lower student numbers, this proximity of growth or decline in demand may affect teachers directly in their information about their jobs, how they experience their work and whether they invest in their work (i.e., how they apply negotiated i-deals). Hence, municipal child population growth is likely to constitute an important context in relation to the effects of i-deals on work behaviors (i.e., in the left part of the conceptual model; see Figure 1). In contrast, municipal unemployment represents a more distal and objective economic factor that is not directly visible, and can only be inferred externally via news and statistics (Chadi, 2014; Dahling et al., 2013). Hence, it will be less likely to affect job behavior, but it will be an important context factor for how one evaluates the job. Hence, it is likely that municipal unemployment operates not before, but in response to employee behavior following i-deals. In other words, we expect unemployment to affect relationships of behaviors at work with engagement and indirectly with motivation to continue working.

There is ample evidence that employees have awareness of socioeconomic factors around them, and are also influenced by such factors (e.g., Coile & Levine, 2011; Chadi, 2014; Dahling et al., 2013; Lusardi & Mitchell, 2009). Awareness of changes in child population is readily available to teachers, as they are faced on a day-to-day basis with either declining or growing class sizes (Barbieri et al., 2011; SBO, 2011). Moreover, research has shown that people may be influenced by unemployment, even if they are not unemployed themselves (Di Tella et al., 2003; Luechinger et al., 2010). This ‘fear’ factor (Di Tella et al., 2003) indicates that people are aware of their socioeconomic environment and are also psychologically influenced by such contextual factors.

**The Impact of Municipal Child Population Growth**

Child population growth indicates whether the number of children is growing or in decline in the municipality of employment. Child population decline is highly visible to teachers as it determines the inflow to schools, and in areas of growth or decline of work, teachers may be faced with larger, smaller or even disappearing classes (SBO, 2011; Falch & Strom, 2004). Population decline is also important as it poses significant risks for increasing demand and continuation of employment (Coleman & Rowthorn, 2011). Growth of child population may, therefore, act as an important signal to teachers that in the (near) future, there will be significant demand for employment, which makes investments in their jobs and careers more salient.

In line with signaling theory, in municipalities where child population is growing, teachers receive positive signals from the environment about the socio-economic context. It also indicates that in the future, there will be sufficient employment, rendering it useful when they invest in innovative behavior and development as a result of i-deals. In municipalities with child population growth, there will be need for additional teachers, and teacher shortages are one of the main issues the educational sector in the Netherlands is facing currently (Rijksoverheid, 2017). In those regions, it may be more straightforward if one has negotiated i-deals to make optimal use of them in the workplace, as there may be generally more negotiation power for individuals. Hence, this also allows those individuals with i-deals to actually make use of them, and translate its benefits to the workplace. I-deals in this way function as indicator of employee competence, boosting their positive relationships with outcomes (Ho & Kong, 2015).

Moreover, negotiation of i-deals is costly (Lee et al., 2015). Negotiation costs time and energy, and exposes the individual to greater vulnerability, as the employee gets into a position of special treatment in comparison to others (Bal, 2017). Such special treatment may have benefits, but also come with the costs of envy and jealousy among coworkers (Marescaux et al., 2019; Ng, 2017). It is therefore likely that people take into account the labor opportunities in the future when negotiating i-deals.

For growth i-deals, teachers will be less likely to engage in innovative behavior and professional development following i-deals in municipalities with child population decline. Even though employees might have negotiated growth i-deals in these municipalities, external signals, such as child population decline, indicate that the value of growth i-deals may be limited, as there is considerable risk of decline of future employment opportunities. In municipalities with child population growth, employees receive signals that their investments in work (e.g., through growth i-deals) will pay off in the future, and that they can actually use their i-deals in the workplace. Thus, child population growth is likely to boost the relationships of growth i-deals with outcomes.

There is also a substantial risk that the investments of negotiating i-deals are offset by a future lack of demand for teachers. Instead, employees may be using i-deals primarily for accommodative purposes (Bal & Vossaert, 2019). Therefore, for accommodative i-deals, we expect weaker negative relationships when child population growth is high. In the context of child population growth, it may be less risky to negotiate accommodative i-deals as employers will be more dependent on retaining their current staff. However, in the case of child population decline, these workers are merely confirmed in their perceptions that investments are too costly, and that they should disengage from their work roles (Topa et al., 2009). Hence, for accommodative i-deals, it is likely that high population growth will weaken their negative relationships, and low population growth will accentuate the negative relationships. In sum, we expect that:

*Hypothesis 5: Child population growth moderates the relationships between (a) growth and (b) accommodative i-deals and innovative work behaviors and professional development activities, with (a) stronger positive and (b) weaker negative relationships when child population growth is high.*

**The Impact of Municipal Unemployment**

Finally, we expect municipal unemployment to moderate the relationships between innovative work behaviors and professional development activities and work engagement. While child population growth represents the demand-side for employment, unemployment represents a supply-side effect of employment (Spence, 1973), representing the relative utility of investments in relation to outcomes. We focus on municipal unemployment, which is important in relation to postponing retirement. High unemployment may signal higher competition for teaching jobs in the labor market, when unemployed teachers may take over teaching jobs, or when people retrain to become a teacher, something that is incentivized through government subsidy (Rijksoverheid, 2017). In contrast, when unemployment is low, it may indicate to individuals that there may be little competition for teaching jobs, sufficient possibilities for employment beyond one’s retirement age, including employment outside one’s sector, and finally a potential necessity to continue working, especially in areas with teacher shortages, where older teachers may continue working to deliver meaningful contributions to the education of children.

Therefore, unemployment may signal job insecurity, as others are available to fill potential vacancies (Di Tella et al., 2003). High unemployment may create uncertainty among employees about their possibilities to be able to continue working (Alavinia & Burdorf, 2008). In this context, people may invest in themselves to enhance their employment opportunities which reduces uncertainty and enhances perceptions of control (Diehl et al., 2018; Lind & Van den Bos, 2002). It is therefore expected that innovative behavior and professional development are particular useful for employees in a context of high municipal unemployment, as it reduces their uncertainty about the possibilities to continue working, and it improves their relative position in comparison to others (Dahling et al., 2013). In other words, under conditions of general resource scarcity and relative deprivation, opportunities to engage in innovative behavior and professional development (attained via i-deals) are particularly valued and, thus, more closely tied to work engagement. Thus, we expect that:

*Hypothesis 6: Municipal unemployment moderates the relationships of (a) innovative work behavior and (b) professional development activities with work engagement, with stronger relationships when municipal unemployment is high.*

**Methods**

**Procedure and Participants**

The study was conducted among teachers in the Netherlands. Email addresses of 4,908 teachers were obtained from a Dutch teachers association. In 2013, teachers were invited to take part in a digital survey. 1,210 respondents completed the questionnaires (response rate 25%). 31% of the respondents taught at primary schools (children of 4-12 years), 24% worked in secondary education (12-18 years), 18% worked at vocational schools (>15 years), and the other 27% worked at multiple schools, or were self-employed. Respondents worked in schools across 226 municipalities in the Netherlands, (Mean respondents per municipality = 5.35; range 1-93). Mean employee age was 50 years. We included workers of all ages and did not only include older workers for two reasons. First, it is not well established at what age people start planning for their retirement. In the context of the Netherlands, employees are primed with their retirement age when they receive their annual pension statement sent by their pension fund, and thus it is likely that pension planning starts at an earlier age that usually expected (Topa et al., 2009). Second, we included workers of a variety of ages, because if individuals, regardless of their age, are unmotivated to continue working, this acts as an important signal for organizations that interventions are needed. Understanding motivation to continue working is therefore not only of relevance among workers approaching their retirement, but also among younger workers.

**Individual-Level Measures**

All items, unless stated otherwise, were measured on 5-point scales (1 = not at all; 5 = to a large extent). *Growth* and *Accommodative I-deals* were measured with scales from Bal and Vossaert (2019). Bal and Vossaert (2019) have shown the various types of validity of these measures. Examples of negotiated i-deals in the educational sector were identified from previous research (Bal, 2017). They included i-deals such as a personalized fund to pursue a PhD, a leadership training, task enrichment, and additional leave. Growth i-deals (α = .90) were measured with five items, examples being “I have made individual arrangements with my supervisor to grow in this organization”, and “My supervisor and I arranged my work the way I want it”. Accommodative i-deals (α = .87) were measured with four items. Examples are “My supervisor and I made individual arrangements to prevent my work from being too burdensome”, and “My supervisor and I have made individual arrangements which ease the combination of work and private life”.

*Innovative Work Behavior* (IWB; α = .89) was measured with an adapted 5-item scale from Morrison and Phelps (1999; using the five items with the highest factor loadings). An example item is “I often try to institute new work methods that are more effective for the organization”. *Professional Development Activities* (PDA) were measured using five items, which were rated on a dichotomous scale (0 = no; 1 = yes). The measure was self-constructed to measure the most used development activities for teachers across primary, secondary, and university education. To construct the scale, we searched through the most relevant literature on education in the Netherlands (Desimone et al., 2004; Rijksoverheid, 2017, SBO, 2011). The items were developed to assess domain-specific developmental activities, to align as closely as possible to the reference frame of our participants. The items included engagement during the last year in professional development, participation in work-related training, and attendance in work-related conferences. Moreover, two items assessed whether the respondent had completed or was working towards a PhD, and whether the respondent read work-related scientific or popular journals on a frequent basis. This measure is in line with measures of development (e.g., Armstrong-Stassen & Ursel, 2009), and constituted an objective assessment of development. Teacher development is incentivized through government subsidies. Particularly incentives to obtain a doctoral degree are high on the agenda of the government, as indicated by various financial stimuli offered (e.g., through the NRO, 2020; and the NWO, 2020; with a yearly budget of 6.2 million euro for teacher training and development). A sum score based on the total number of yes responses was created (Range 1-5, M = 3.04).

*Work Engagement* (α = .92) was measured with the shortened 6-item scale of engagement (Schaufeli & Bakker, 2004), assessing the two core dimensions of engagement: vigor and dedication (Polat et al., 2017). Responses were generated on a 7-point scale (1 = never; 7 = daily). *Motivation to Continue Working* (MCW; α = .96) referred to the motivation to work beyond one’s retirement age. Retirement age refers to either of two situations: for anyone born after 1955, this will be the age of 67, whereas for anyone born in 1955 or earlier, this will refer to the retirement age, as indicated by their pension funds (see also Bal et al., 2012; Polat et al., 2017). Moreover, employees may have early retirement packages, as being offered through collective agreements. They will be aware of such arrangements and can make voluntary choices about continuing working or retiring early or at the statutory retirement age, as this is communicated in annual pension letters. We did not differentiate between continuing working within the same organization, or engaging in paid or voluntary work, as the measure reflected a broad array of possibilities for individuals to continue working. If employees are able to negotiate i-deals that enable them to continue working in another organization, or to engage in voluntary work beyond their retirement, it would contribute to a broader societal relevance of investments in employees, hence broaden the meaning of i-deals to skill development which may be transferrable to work outside one’s current employment. MCW was measured using four items from Polat et al. (2017). An example item is “I am highly motivated to continue working after my retirement age”.

**Municipality-Level Measures**

The survey asked respondents to which school they were affiliated, and in which municipality this school was based. In the Netherlands, schools and universities are state-financed, and public education institutions (our study only included state schools) receive the same funding for each child, depending on educational level (i.e., primary, secondary or vocational/university education; Rijksoverheid, 2019). In total, the Netherlands has 390 municipalities, and we received responses from 226 municipalities. A municipality usually consists of a city with smaller villages around it integrated into the larger municipality. The population size ranged from 1,515 (Rozendaal) to 755,605 (Amsterdam), and was on average 37,383 in this study. The level of municipality was chosen as the primary work environment of teachers in the Netherlands. On average, teachers tend to be geographically immobile, and prefer to work in or around the city they live in (SBO, 2011). Hence, in influencing retirement-related decisions, it is not just national economic factors, but especially *local* economic factors that will influence their motivations. Data were taken from the official bureau for statistics in the Netherlands (Statistics Netherlands, 2017). We focused on municipal child population growth and unemployment as outlined above.

*Child Population Growth* was measured as the growth or decline in percentage of the municipal population below 5 years of age during the four years preceding the study took place (in 2013). Four years were chosen as it indicates the age from which children attend school in the Netherlands. Birth rates would not have sufficed as (both regional and national) migration affects population size as well, and measuring the population of children directly was a more appropriate indicator of true population size. We calculated the number of children below 5 years of age as a percentage of the total municipal population in 2013 (in 2009 and 2013), and subtracted the percentage in both years to obtain relative growth or decline during the four years preceding the study. On average, child population growth was 5.61% (range -2.64 to 8.97).

*Municipal Unemployment* was measured as the number of people between 20 and 65 years on benefits (unemployment and social welfare) as a percentage of the total municipal population in that age range (at 1/1/2013). In the current study, general municipal unemployment is investigated, and not teacher unemployment. While the latter may constitute the amount of teachers who are currently available, the former constitutes a broader selection of people who may in the (near) future be available for teaching jobs, such as through re-education towards teaching qualifications, which is increasingly offered through government programs (e.g., Rijksoverheid, 2017). Moreover, specific statistics on teacher unemployment were not available via Statistics Netherlands at the level of municipalities. On average, municipalities have 22% of the population having social benefits and not working fulltime (range 9.54 to 35.01). This number is considerably higher than conventional unemployment statistics, which tend to leave out those people who are in various types of benefits other than unemployment benefits.

**Control Variables**

In the analyses, the following control variables were included: gender (0 = male; 1 = female), age (in years), children (0 = no; 1 = yes), education (highest finished degree of the respondent; 1 = primary school; 5 = university degree), weekly contract hours, organizational tenure (in years) and contract status (0 = temporary, 1 = permanent). Six participants (0.5% of the total sample) had only finished primary education, four of whom were 52 years and older, and most likely having obtained teaching qualifications through certificates rather than established vocational training degrees at colleges or universities. We controlled for these factors, because there are theoretical and empirical reasons to assume that the control factors might influence the outcomes, and especially motivation to continue working. Gender may affect MCW, as women tend to retire earlier than men, whereas older workers and workers with lower education are less likely to continue working (Dingemans et al., 2017). Other factors, such as contract status and tenure may also play a role in retirement decisions (Wang & Shultz, 2010), as part-time working employees, temporary workers, and employees with a longer tenure may be more likely to retire early (Topa et al., 2009). Hence, we controlled for these factors, but we also conducted robustness checks and tested our models without the control variables.

**Analysis**

The data have a multi-level structure as individuals were nested in municipalities, and multilevel analyses were conducted in MPlus 7.4 (Muthén & Muthén, 2015). Between-unit variance was significant for both municipal child population growth F(853, 216) = 290.03, *p* < .001, and for municipal unemployment F(853, 216) = 108.20, *p* < .001, indicating that there was enough variance between municipalities in child population growth and unemployment to justify multilevel analyses. Multilevel path analyses were used to test the full model including indirect effects. Independent variables were standardized before creating interactions, and for significant interactions, slopes and indirect effects were estimated at 1SD below and above the mean of the moderator.

We first conducted a Confirmatory Factor Analysis (CFA) to test for the factor structure of the multi-item scales. Professional development activities were left out as it was a formative construct. A five-factor model including growth and accommodative i-deals, innovative work behavior, work engagement and motivation to continue working, reached acceptable fit (χ2 = 1465.76 ; *p* < .001; *df* = 242; RMSEA = .07; CFI = .94; SRMR = .04). This model also obtained better fit than a model in which all i-deals items were constrained to load on one factor (Δχ2 = 1048.99, Δ*df* = 4, *p* < .001), as well as a model in which all items were constrained to load on one factor (Δχ2 = 13090.86, Δ*df* = 10, *p* < .001). Hence, it can be concluded that the factor structure was valid, and all items loaded significantly on the factors.

Finally, we calculated the average variance extracted to test for the proportion of variance that is explained due to random error (Fornell & Larcker, 1981). The average variance extracted scores should be >.50, and Table 1 presents our multi-item measures, for which all average variance extracted scores were beyond .63, thereby supporting the convergent validity of the measures. Table 1 shows the correlations.

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Insert Table 1 here

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**Results**

First, we tested a partial mediation model including the hypothesized model, with direct paths of i-deals to engagement, and from IWB and PDA to motivation to continue working. This model fitted significantly better (χ2 = 28.36, *df* = 3, *p* < .001) than a reversed causal model, including partial mediation (χ2 = 53.11, *df* = 8, *p* < .001; Δχ2 = 24.75, *p* < .001), as well as a model with i-deals leading to engagement, leading to innovative work behaviors and professional development activities, and finally to motivation to continue working (χ2 = 103.68, *df* = 4, *p* < .001; Δχ2 = 75.32, *p* < .001). Hence, the mediated model reached better fit in comparison to other models. To test the robustness of our model, we also tested a model without control variables. Results of this analysis showed that the significance levels of all coefficients remained unchanged, showing the stability of the results with and without controls.

Table 2 shows the results of the multilevel path analyses of the full model including moderators. Growth i-deals were positively related to both IWB (b = .325, *p* < .001), and to PDA (b = .205, *p* < .001), thereby supporting H1a. Accommodative i-deals were negatively related to both IWB (b = -.123, *p* < .001) and to PDA (b = -.128, *p* < .001), thereby also supporting H1b. Furthermore, both IWB (b = .078, *p* < .05), and PDA (b = .120, *p* < .01) were positively related to work engagement, supporting H2a and H2b. Table 2 also shows that work engagement was positively related to motivation to continue working (b = .312, *p* < .001), thus supporting H3.

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Insert Table 2 here

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Table 3 shows the indirect effects. The indirect effect of growth i-deals on motivation to continue working via IWB and work engagement was significant (b = .008, *p* < .05), as well as via PDA and work engagement (b = .001, *p* < .05). The total indirect effect of growth i-deals to motivation to continue working was also positive and significant (b = .119, *p* < .001). This supports H4a for growth i-deals. The indirect effect of accommodative i-deals to motivation to continue working via IWB was negative (b = -.003, *p* < .05), as well as via PDA (b = -.005, *p* < .05). The total indirect effect of accommodative i-deals on motivation to continue working was negative (b = -.023, *p* < .05). Hence, H4b is also supported.

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Insert Table 3 here

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Table 2 shows that child population growth did not moderate the relationship of growth i-deals with IWB (b = .045, *ns*), but it moderated the relationship of growth i-deals with PDA (b = .063, *p* < .05). Figure 2 shows the interaction pattern. The relationship between growth i-deals and PDA was more strongly positive under conditions of high child population growth (b = .268, *p* < .001), while the relationship was less strong for municipalities with low child population growth (b = .142, *p* < .01), which supports H5a. The conditional indirect effects (shown in Table 3) also show that growth i-deals are related to higher motivation to continue working in municipalities with high child population growth (b = .015, *p* < .05), whereas the indirect relationship was nonsignificant when child population growth was low (b = .000, *ns*).

Child population growth also moderated the relationship between accommodative i-deals and IWB (b = .082, *p* < .05). Figure 3 shows the interaction pattern. The relationship was nonsignificant for high child population growth municipalities (b = -.041, *ns*), while it was negative under conditions of low child population growth (b = -.205, *p* < .001). Table 3 also shows that the indirect effect of accommodative i-deals on motivation to continue working was negative for low child population growth municipalities (b = -.009, *p* < .05), while it was nonsignificant for high child population growth municipalities (b = .003, *ns*). This partially supports H5b. The moderating effect of child population growth on the relationship between accommodative i-deals and PDA was nonsignificant (b = -.022, *ns*), thereby rejecting H5b for PDA.

Unemployment did not moderate the relationship between IWB and work engagement (b = .061, *ns*), and therefore, H6a is rejected. Unemployment moderated the relationship between PDA and work engagement (b = .126, *p* < .01). Figure 4 shows the interaction pattern. This shows that professional development activities are positively related to work engagement when unemployment is high (b = .219, *p* < .001), and not when unemployment is low (b = -.035, *ns*). The conditional indirect effects (Table 3) also show that professional development is more strongly related to motivation to continue working in high unemployment municipalities (b = .052, *p* < .05) than in low unemployment municipalities (b = .022, *p* < .05). This supports H6b.

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Insert Figures 2-4 here

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**DISCUSSION**

This study investigated why and how i-deals relate to higher motivation to continue working. Based on work adjustment theory (Baltes et al., 1999; Edwards, 2008), we postulated that i-deals are negotiated by employees to enhance fit at work and better adjust to the demands of their jobs, and we provided the first evidence that i-deals are related to higher motivation to continue working via innovative behavior, development, and work engagement. Work adjustment theory can be used to explain how and why employees who negotiate i-deals are also more likely to be motivated to continue working beyond their retirement. Hence, our first main contribution is that we elucidate the process by which i-deals relate to motivation to continue working. While previous research has ascertained the value of individualized approaches to motivating workers towards their retirement (Anderson & Morgan, 2017; Bal et al., 2012; Kooij et al., 2017), our study contributes to this by showing the crucial roles of innovative behavior, development and engagement in this process. Thus, researchers may benefit from a better understanding of *how* individualized perspective may benefit long-term motivation. Through growth i-deals, people may develop themselves and reap the benefits in their daily work practices (e.g., by becoming more innovative in how they conduct their daily jobs), and thereby enhancing their motivation in the long run.

This also aligns with motivation theories, such as expectancy theory. This would assume that someone’s motivation to continue working is determined by someone’s expectations that continuing working will reap actual benefits for the individual. As i-deals enhance someone’s capabilities, self-confidence and control (Liao et al., 2016; Ng, 2017; Rousseau, 2005), people feel more highly drawn to expend effort in one’s job, by for instance becoming more innovative and developing oneself, which has positive motivational consequences, including engagement and a desire to continue working. Our study thus shows the empirical underpinning of this process, which thus far has not been investigated empirically yet.

Moreover, the study also investigated two key socio-economic factors that influence the relationships under study. On the basis of signaling theory (Connelly et al., 2011; Spence, 1973), we showed that employees in deciding whether or not to postpone retirement do not just rely on their work experiences, but also on the wider socio-economic environment. The relationships of i-deals were influenced by municipal child population growth, while the relationship between professional development and work engagement was moderated by municipal unemployment. Relationships of growth i-deals with development were strengthened in those municipalities with child population growth, while the negative relationships of accommodative i-deals with innovation were attenuated by child population growth. Hence, i-deals are especially beneficial when employees perceive that their investments due to negotiating i-deals will pay off in the future, as there will be enough demand for their teaching skills. As negotiating i-deals is costly and involves risk taking (Bal & Boehm, 2019; Lee et al., 2015), employees have to assess the risk of having i-deals in relation to the possibilities generated in their environment to translate the benefits of i-deals into the workplace. In the context of child population growth, they may thus perceive lower risks, and engage more in innovative behavior and professional development.

Finally, municipal unemployment is important in the context of innovation and development. Whereas employees may assess the risks of changing their behaviors as a result of i-deals depending on the demand for their work in the environment, once they have initiated innovative behavior and develop themselves professionally, they may also take into account the broader competition for teaching jobs in the future. Municipal unemployment indeed moderated the relationships between professional development activities with work engagement, showing that the relationships were positive only in municipalities with high unemployment. This effect can be explained on the basis of signaling theory. Unemployment signals to employees that others may take over their jobs, and hence, development creates an advantage in comparison to those who are currently unemployed (Di Tella et al., 2003).

By empirically showing the relevance of socio-economic factors, we also contribute to earlier research, such that it is not only organizational culture that matters for the effects of i-deals (Bal et al., 2012), but also the wider socio-economic context *outside* the organization. This study is the first one to show empirically that by developing their resources employees increase their external market value in times of unemployment. So we add to the, too much internally oriented, resourced-based view of the firm an external macro-perspective. Our main contribution, therefore, is that we highlight the importance of socio-economic context in theorizing on the implications of i-deals in the workplace. Previous research has ignored thus far this context, and we show that people, in responding to i-deals, take both into account supply and demand characteristics of the local labor market. So far, scholars have pointed towards this theoretical assumption (e.g., the multilevel model of i-deals of Liao et al., 2016), but we are the first to empirically show that socio-economic context *does* matter in affecting the relationships of i-deals with work outcomes.

**Theoretical Implications**

This study has implications for theory on i-deals, retirement, and HRM. First, the study shows that i-deals are not only related to current motivation in one’s job, but are also related to motivation to continue working beyond one’s retirement. I-deals spur employees to innovative behavior and development, through which they enjoy their work more, subsequently relating to higher long-term motivation. The positive relationships of i-deals with motivation to continue working are further strengthened when there is demand for work (i.e., high child population growth). This creates a situation where investments in i-deals pay off, where employees can develop themselves and become more highly motivated to continue working.

Our study also shows it is important to differentiate on the basis of type of i-deal. Growth i-deals help people to develop themselves and add to long-term motivation, while accommodative i-deals may help people to deal with age-related losses (Kooij et al., 2017), which may have negative ramifications for their motivation to continue working. The study also shows that accommodative i-deals were negatively related to outcomes such as innovation, development and motivation to continue working. Accommodative i-deals may however have positive relationships with other outcomes, such as work-life balance (Hornung et al., 2008). Hence, the literature on i-deals would benefit from incorporating wider perspectives on the differential effects of i-deals for long-term motivation.

While i-deals may help with motivation to continue working, this not necessarily means older workers will actually continue working. Older employees may be classified as ‘reluctant leavers’ (Hom et al., 2012) when they display high motivation to continue working, but are nonetheless not offered the possibilities to do so. Especially in education, this might be a major problem, when teacher shortages are occurring. Hence, it is important to continuously assess the motivation to continue working among employees, and not just when employees approach their retirement. When organizations monitor this continuously, they are also able to offer i-deals, incentives and development to enable employees to continue working in a healthy and motivating way.

Moreover, our study shows that HRM-interventions in organizations (such as i-deals) are dependent upon the wider context, such as the socio-economic environment, in which organizations and employees are embedded. HRM-research, therefore, has to take into account that (individualized) practices will have differential effects depending on the socio-economic context. Our study showed that i-deals are especially effective when there is actually a growth in demand for work. Hence, HR-literature may focus more on the socio-economic context in establishing the effects of policies and practices. It is often observed that HR-interventions may not be as successful as predicted. Our study contributes to such understanding by showing that interventions (e.g., i-deal negotiation) can be less successful in economic difficult circumstances. While this might seem counterintuitive, it can be better understood as a process whereby interventions pay off when people actually see opportunities, and when there is sufficient demand for their labor. Future HR-research would therefore benefit from taking a more macro-perspective on HR-related issues beyond organizations, as this more accurately explains employee behavior and motivations. It is important that this is not just conducted theoretically as most theoretical models include context factors, but also empirically.

The socioeconomic context is important because it conveys signals to people which help them make sense of their behavior (Spence, 1973). Signals from the immediate municipal environment about the demand for teaching jobs and the availability of other employees, are important indicators for employees to make sense of whether their investments will pay off in the future. Hence, theory on i-deals and retirement should take into account both the context *within* and *beyond* the organization to assess people’s motivation and behavior.

In sum, our study elucidates *why* i-deals are important in the context of retirement-related decision making. Theory, therefore, should take into account individual agreements made by employees, because they help employees create a more personalized fit with their job, through adaptation of their jobs. This helps them to engage in more meaningful behavior (e.g., innovative behavior and development), which stimulate work enjoyment and long-term motivation. However, employees do not make their decisions about continuing working beyond retirement in isolation. In line with signaling theory, they use cues from the wider socioeconomic environment to make sense of their employment status and investments made. Future research should also take this into account when designing studies and theorizing possible effects of i-deals and HR-interventions more widely.

**Limitations and Future Research Suggestions**

A first limitation of this study is that a part of the model was based on surveys, which were collected at the same time. Alternative pathways could therefore not be completely excluded. It is only via rigorous longitudinal designs that it is possible to further ascertain the direction of the relationships in the model. We also investigated motivation to continue working rather than actual decisions to continue working beyond retirement. While the current sample was approaching retirement (with a mean age of 50), measuring motivation to continue working is valid for a number of reasons. Motivation to continue working is important, because they may influence later decisions to actually continue working. A lack of motivation indicates low willingness to continue working, and this may also be associated with a more general demotivation at work (Armstrong-Stassen & Ursel, 2009). Moreover, the measure for development consisted of a dichotomous variable, which has limitations. For future research, it may be advised to use other measures for development, to capture the variety in development experiences, such as the quality of development (Van der Heijden et al., 2015).

Another limitation pertains to the choices for socio-economic factors. In the current study of a sample of teachers, municipal child population growth and unemployment are important socio-economic context factors that relate directly to the work of teachers. However, there may also be other relevant factors that may influence teachers and other employees in their work-related decisions, such as affordability of housing (Kossek et al., 2003), availability of other jobs in the region (Munnell et al., 2008), or age norms about early retirement of continuing working (Dingemans et al., 2017). Hence, future research could also investigate other socio-economic factors that influence the relationships under study.

Finally, the survey was based on self-report measures. While we used valid measures for the survey, common method bias could have existed in the data. We provided extensive tests for the possibility of CMV, including CFAs and AVE. However, we recommend that variables to be measured using other sources, such as i-deals, which can also be rated by supervisors granting i-deals.

**Practical Implications**

This study has implications for both employees and organizations. First, for employees who face stronger pressure to continue working, it is instrumental to negotiate growth i-deals with their employer, such that they are enabled to be innovative in their work and to develop themselves. Moreover, while accommodative i-deals may help employees with balancing age-related declines with the requirements of one’s job, these arrangements are not sufficient to be able to be motivated to continue working. Accommodative i-deals, however, may have positive long-term effects for employees which have not been tested in this study. For instance, reduced workloads may help individuals to focus on other areas in life, such as voluntary work or care for elderly parents. Hence, the positive effects of accommodative i-deals may not be visible *inside* organizations, but may also extend beyond organizations.

Moreover, for organizations focusing on employee retention, i-deals can be an important tool to achieve such aims. Yet, i-deals may also have negative ramifications when they are associated with preferential treatment (Rousseau et al., 2006), or when they lead to perceptions of unfairness or envy among colleagues (Marescaux et al., 2019; Ng, 2017). Hence, i-deals need to be perceived as fair to be successful in organizations (Rousseau et al., 2006). For instance, managers can be trained in ensuring fairness in distributing and managing i-deals with subordinates (Bal & Vossaert, 2019). Moreover, employees can be offered the possibility to negotiate i-deals (such as in yearly performance appraisals) to ensure their long-term motivation at work. While some older workers may primarily desire accommodative i-deals, it is also important that growth i-deals are used, as these are related to innovation and development.

**Conclusion**

The aim of this study was to assess how i-deals relate to motivation to continue working and how socio-economic factors moderate these relationships. Using a sample of 1,200 teachers in the Netherlands, we showed that growth i-deals may boost motivation to continue working via innovation, development and engagement, while accommodative i-deals hamper motivation to continue working. We also showed that socio-economic factors moderate these relationships, and that benefits of i-deals depend on whether the socio-economic context signals opportunities (e.g., municipal child population growth) or risks (e.g., high municipal unemployment) to individuals.

**Data Availability Statement**

Raw data were generated at the university of the first author (at the time of data collection). The data that support the findings of this study are openly available in OSF at http://doi.org/[DOI 10.17605/OSF.IO/CEF9S].

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Table 1: Means, Standard Deviations, Reliabilities and Correlations of the Study Variables

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | M | SD | AVE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| 1 | Gender | .55 | -- |  | -- |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 | Age | 50.06 | 10.83 |  | -.21\*\* | -- |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3 | Children | .73 | .98 |  | .01 | -.15\*\* | -- |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 | Education | 4.19 | .68 |  | -.04 | .01 | -.02 | -- |  |  |  |  |  |  |  |  |  |  |  |
| 5 | Contract Hours | 32.18 | 8.65 |  | -.27\*\* | -.09\*\* | -.07\* | -.00 | -- |  |  |  |  |  |  |  |  |  |  |
| 6 | Organizational Tenure | 14.61 | 10.72 |  | -.14\*\* | .56\*\* | -.16\*\* | -.01 | .01 | -- |  |  |  |  |  |  |  |  |  |
| 7 | Contract Status | .91 | -- |  | -.04 | .12\*\* | .07\* | -.05 | .21\*\* | .22\*\* | -- |  |  |  |  |  |  |  |  |
| 8 | Growth I-deals | 2.78 | .97 | .62 | .00 | .01 | .08\*\* | .03 | .08\* | -.00 | .07\* | **.90** |  |  |  |  |  |  |  |
| 9 | Accommodative I-deals | 2.40 | .95 | .61 | -.04 | .07\* | .08\*\* | -.01 | -.06 | .01 | .06 | .58\*\* | **.87** |  |  |  |  |  |  |
| 10 | Child Population Growth | 5.61 | 1.16 |  | -.05 | -.01 | -.03 | -.07\* | -.01 | -.02 | -.06 | .02 | -.01 | -- |  |  |  |  |  |
| 11 | Municipal Unemployment | 22.03 | 5.36 |  | -.06\* | .06\* | .01 | -.04 | .07\* | .08\*\* | .01 | -.00 | -.01 | .27\*\* | -- |  |  |  |  |
| 12 | Innovative Work Behaviors (IWB) | 3.29 | .80 | .63 | .01 | -.06\* | .08\*\* | .06 | .15\*\* | -.01 | .04 | .27\*\* | .06\* | -.02 | .01 | **.89** |  |  |  |
| 13 | Professional Development Activities (PDA) | 3.04 | 1.08 |  | .05 | -.01 | .02 | .17\*\* | .17\*\* | .01 | .12\*\* | .15\*\* | -.02 | .02 | -.02 | .23\*\* | -- |  |  |
| 14 | Work Engagement | 5.84 | 1.19 | .64 | .10\*\* | -.06\* | .01 | .05 | .05 | -.08\* | -.04 | .25\*\* | .11\*\* | .04 | -.06 | .18\*\* | .19\*\* | **.92** |  |
| 15 | Motivation to Continue Working | 2.10 | 1.14 | .88 | -.02 | -.07\* | .04 | .05 | -.01 | -.15\*\* | -.18\*\* | .17\*\* | .07\* | -.02 | -.07\* | .13\*\* | .04 | .30\*\* | **.96** |

*Note. N* = 1,210. Gender: 0 = male; 1 = female. Contract Status: 0 = temporary; 1 = permanent. \* *p* < .05, \*\* *p* < .01. Reliabilities in bold along the diagonal.

Table 2: Results of Multilevel Path Analyses

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Innovative Work Behavior | Professional Development Activities | Work Engagement | Motivation to Continue Working |
| *Control Variables* |  |  |  |  |
| Gender | .106 | .156\* | .143\* | -.119 |
| Age | -.001 | -.003 | -.001 | .006 |
| Children | .083\*\* | .015 | -.022 | .036 |
| Education | .114\* | .165\*\*\* | .014 | .065 |
| Contract Hours | .017\*\*\* | .013\*\* | .003 | .000 |
| Organizational Tenure | .002 | .002 | -.005 | -.013\*\*\* |
| Contract Status | -.018 | .215\* | -.243\* | -.564\*\*\* |
| *Independent Variables* |  |  |  |  |
| Growth I-deals | .325\*\*\* | .205\*\*\* | .218\*\*\* |  |
| Accommodative I-deals | -.123\*\*\* | -.128\*\*\* | -.005 |  |
| Child Population Growth | -.026 | .048 | .054 | -.016 |
| Regional Unemployment | .011 | -.029 | -.068 | -.067 |
| *Mediators* |  |  |  |  |
| Innovative Work Behaviors |  |  | .078\* | .109\* |
| Professional Development Activities |  |  | .120\*\* | -.018 |
| Work Engagement |  |  |  | .312\*\*\* |
| *Interaction Effects* |  |  |  |  |
| Growth I-deals \* Child Population Growth | .045 | .063\* |  |  |
| Accommodative I-deals \* Child Population Growth | .082\* | -.022 |  |  |
| Innovative Work Behaviors \* Municipal Unemployment |  |  | .061 |  |
| Professional Development Activities \* Municipal Unemployment |  |  | .126\*\* |  |
|  |  |  |  |  |
| *R2 within* | .14 | .08 | .13 | .13 |
| *R2 between* | .02 | .15 | .51 | .77 |

*N* = 1210; \* *p* < .05, \*\* *p* < .01, \*\*\* *p* < .001.

Table 3: Indirect Effects and Conditional Indirect Effects with Bootstrapping

|  |  |  |
| --- | --- | --- |
|  | Bootstrapping | |
|  | Unstandardized Estimate | 95% Confidence Interval |
| *Specific Indirect Effects* |  |  |
| Growth I-deals → IWB → Work Engagement | .025\* | [.006, .044] |
| Growth I-deals → IWB → Work Engagement → MCW | .008\* | [.002, .014] |
| Growth I-deals → PDA → Work Engagement | .016\* | [.003, .029] |
| Growth I-deals → PDA → Work Engagement → MCW | .001\* | [.001, .009] |
| Accommodative I-deals → IWB → Work Engagement | -.010 | [-.018, -.001] |
| Accommodative I-deals → IWB → Work Engagement → MCW | -.003\* | [-.005, .000] |
| Accommodative I-deals → PDA → Work Engagement | -.010 | [-.025, -.005] |
| Accommodative I-deals → PDA → Work Engagement → MCW | -.005\* | [-.008, -.002] |
| IWB → Work Engagement → MCW | .024\* | [.006, .043] |
| PDA → Work Engagement → MCW | .037\*\* | [.014, .061] |
|  |  |  |
| *Total Indirect Effects* |  |  |
| Growth I-deals → MCW | .119\*\*\* | [.092, .146] |
| Accommodative I-deals → MCW | -.023\* | [-.043, -.003] |
|  |  |  |
| *Conditional Indirect Effects* |  |  |
| Growth I-deals → PDA → Work Engagement → MCW *Child Growth 1 SD below the mean* | .000 | [-.006, .006] |
| Growth I-deals → PDA → Work Engagement → MCW *Child Growth 1 SD above the mean* | .015\* | [.003, .027] |
| Accommodative I-deals → IWB → Work Engagement → MCW *Child Growth 1 SD below the mean* | -.009\* | [-.017, -.001] |
| Accommodative I-deals → IWB → Work Engagement → MCW *Child Growth 1 SD above the mean* | .003 | [-.002, .009] |
| PDA → Work Engagement → MCW *Unemployment 1 SD below the mean* | .022\* | [.004, .041] |
| PDA → Work Engagement → MCW *Unemployment 1 SD above the mean* | .052\* | [.011, .094] |

*N* = 1210; \* *p* < .05, \*\* *p* < .01, \*\*\* *p* < .001. IWB = Innovative Work Behavior; MCW = Motivation to Continue Working; PDA = Professional Development Activities.

Figure 1: Conceptual Model of the Study



Figure 2: Interaction Effect between Growth I-deals and Child Population Growth in Relation to Professional Development Activities

Figure 3: Interaction Effect between Accommodative I-deals and Child Population Growth in Relation to Innovative Work Behavior

Figure 4: Interaction Effect between Professional Development Activities and Municipal Unemployment in Relation to Work Engagement