STUDIA DOCTORALIA
PSYCHOLOGY AND EDUCATIONAL SCIENCE
UNIVERSITY OF BUCHAREST
VIRTUTE ET SAPIENTIA

Playful work design: A diary study on its correlates in white collar workers

Laura Petrescu

Erasmus University alumnus, Rotterdam, NL

ARTICLE INFO

Article history:
Received 16-April-2018
Accepted 22-August-2018
Available online 01-October-2018

This article should be cited as: Petrescu, L., (2018). Playful work design: A diary study on its correlates in white collar workers. *Studia Doctoralia. Psychology and Educational Science, 15,* 38-53.

Corresponding author at: Erasmus University alumnus, Rotterdam, NL, P.O. Box 1738
3000 DR Rotterdam
E-mail address: laurapetrescu94@gmail.com

ABSTRACT

The present study addresses playful work design as the consistent initiative of employees to integrate game-like elements into their day-to-day work in order to reach their imposed work-related goals. We adapted a short measure for daily playful work design and followed 55 white-collar workers over 5 consecutive working days. We hypothesized that playful work design would be predicted by contextual factors and an individual factor (i.e. job autonomy, manager support for fun and growth need strength). Furthermore, we predicted that, across days, playful work design would relate positively with work engagement and positive affect and negatively with negative affect. Additionally, we tested for the moderation of growth need strength in the relationship between work engagement and playful work design. Results indicated that playful work design was not predicted by job either job autonomy, manager support for fun or growth need strength. We found that playful work design was related positively to work engagement and positive affect, but not related to negative affect. Moreover, growth need strength didn't moderate the relationship between daily playful work design and daily work engagement. We discuss theoretical and practical implications of our findings for the work design literature.

Keywords: *playful work design, work engagement, job autonomy, manager support*

1. INTRODUCTION

How do you determine employees to play at work and just how good is it for them to do so?

In the past, work was clearly dissociated from play. Employees had a rather sombre and unemotional attitude towards it. Nowadays, a much more integrative approach to work is trending: employees feel the need for fun activities

during work time. We found it useful to explore whether initiating such behaviors is related to positive work-related outcomes and, if so, to find a way to support it. Therefore, the concept of playful work design was studied.

By playful work design, we understand the activities which employees initiate to reach their work-related goals, by integrating game-like elements into their day-to-day work. For example, employees can create ways to challenge themselves at work in a playful way or imagine funny stories when dealing with stress.

In this sense, we followed 55 Romanian white-collar workers over 5 consecutive work days. According to their responses to several surveys, playful work design wasn't predicted by the contextual factors (i.e. job autonomy, manager support for fun) or by the individual factor (i.e. growth need strength). This means that neither giving the employees freedom to make their own decisions at work, nor supporting their entertainment at work was the way to promote playful work design. Their need for growth itself didn't lead to increased playful work design either.

Throughout the days, playful work design was related positively to work engagement. This finding suggests that adding game-like elements to work was related to a positive, fulfilling state of mind at the workplace. However, the psychological need of employees to develop themselves personally didn't influence the strength of this relationship. Furthermore, it was found that positive affect, but not negative affect, was related to playful work design. This suggests that feelings of enthusiasm or excitation were connected to one's own initiative to make their work more playful, but the presence or absence of negative emotions such as anxiety and fear didn't influence their playful work design.

Therefore, to facilitate playful work design, it is recommended to support positive emotions, rather than avoid negative emotions (for example, by managers). Moreover, the results imply that employees themselves can take steps to be more engaged at work and experience more positive affect by means of a bottom-up approach: playful work design.

At the workplace, employees are not passive recipients of tasks and attributions, but rather active actors: they can alter the way in which they execute their tasks. In the literature, this phenomenon is referred to as work design: an arrangement which focuses on reaching the set work-related goals and on exploring the possibilities of the employees' work roles (Weick, 1995). It can be a bottom-up approach, which implies that the change starts from the employee, who has the initiative. The concept of work design is seen as the 'how' of reaching desired work-related goals, in terms of tasks, relationships with co-workers, superiors or associates, responsibilities and activities (Parker, 2014). By replacing or restructuring the means to obtain effective work-related goals, one can exercise control over their own work and find innovative ways of dealing with problems. Moreover, the individual manages his/her own physical and intellectual resources, learning process and motives (Frese & Zapf, 1994), thus potentially becoming even more valuable for the company.

A way in which one can design their given work tasks is by incorporating game-like elements in their work. For example, Sarah, an assistant manager, may decide to compete with herself by setting out to finish sending her work-related emails faster than the preceding day and take account of her time record. Or Tim, a teacher who has to correct his students' exam papers, may choose to draw on every A-graded paper a stickman resembling the respective student. In this way, work is assumed to become more entertaining and challenging for the person doing it.

As far as fun activities at work are concerned, the term "workplace fun" has been coined and praised throughout the years. Fluegge (2008) described it through activities of social, interpersonal or task-related nature at work, which imply play or humor and lead to the individual's amusement, enjoyment or pleasure. For more than thirty years, it has been assumed that workplace fun is universal and desirable in organizations (Owler, Morrison, & Plester, 2010). Generally, applicants are intrinsically motivated by fun right from the recruiting stage (Tews, Michel, & Bartlett, 2012) and they also seek fun at work once they enter the organization as employees (Ford, Newstrom, & McLaughlin, 2004). Moreover, making work fun is also beneficial for the employers, because it leads to positive outcomes in the organization, such as motivation and flexibility, by enabling them to find meaning and pleasure at their job (Fleming, 2005). All in all, fun is an indispensable element in the workplace and it can also be a way of dealing with one's tasks, thus satisfying the employees' expectations about what the job will consist of and engaging them at work, too.

Building on the previous research on work design and workplace fun, this paper will explore a new concept: playful work design. It is conceptualized as a consistent initiative of employees to integrate game-like elements into their day-to-day work, in order to reach their imposed work-related goals. In this sense, individuals who engage in playful work design expand their existing tasks in entertaining and challenging ways. In this study, playful work design is a means of increasing the challenge job demands (Tims, Bakker, & Derks, 2012). Challenge job demands are viewed by workers as obstacles to be overcome in order to learn and achieve (Cavanaugh, Boswell, Roehling, & Boudreau, 2000) and approached by voluntarily adding value to the products one is working on, in a creative manner. At the individual

level, challenge job demands are perceived as opportunities to potentially improve mastery and future gains (Crawford, LePine, & Rich, 2010). Following this logic, research on playful work design could provide insights into the mechanisms through which employees become energetic and dedicated to their work.

The objective of the study is to address two significant research gaps: which employees engage in more playful work design and what fosters this behavior. The importance of these objectives lies in the idea that a clear delimitation between work and pleasure does not belong to the current paradigm anymore. "Work-life balance" was seen in the past as a zero-sum game in which enjoyment and pleasure are considered only during out-of-work activities, while work is serious and implies a sombre attitude towards it. Nowadays, the trend makes way for the more applicable "work-life fit" (Galinsky & Matos, 2011). This means that employees feel the need to integrate their interests and preferences into their workplaces; fun is an integral part of work. By studying these needs and activities of employees, new light would be shed into the process of making work more fun and challenging.

Beyond building theory in the area of playful work design, the study also has practical implications in Organizational Psychology and Human Resources Management practices, especially in the organizational climate and work-life fit policies. Specifically, the present model can constitute the basis for professionals to identify such behaviors at work and to meet the needs of their employees, due to a better understanding of the interactions between attitudes at work and playful behaviors. Moreover, following recent work organization trends of increasing uncertainty and dynamism in the workplace (Grant & Parker, 2009), more and more attention in research and practice is given to motivating employees, instilling in them a sense of meaning and allowing them to develop and use their decision-making skills regarding how they do their job.

In the following sections of the paper, the structure is as follows: first, I reviewed the extant literature relevant for playful work design and its relation to the variables included in the study, which shapes the research questions and the proposed model around playful work design. Then, the methods of the study were presented, followed by the statistical analyses and their interpretations. Finally, conclusions and implications were formulated.

Conceptual framework

In this paper, the following three research questions are addressed: i) How are the people that usually engage in more playful work design? ii) What attitudinal variables is daily playful work design related to? and iii) What does daily playful work design signal in people, in terms of their affect?

The first research question reflects between-person differences that may explain playful work design, in general: job autonomy, manager support for fun and growth need strength. The degree of autonomy is largely attributable to one's type of job and position in the hierarchy of the company, while manager support for fun is less general, because it depends on the employee's manager's strategies and his or her overall attitude toward having fun at work, regarding a specific department or role. In opposition, growth need strength is seen as a more stable characteristic of the employee, independent of any group membership, because it represents a superior psychological need. All in all, job autonomy as a stable and general job characteristic, manager support for fun as a contextual characteristic and growth need strength as an interpersonal characteristic can be seen as a pyramid, from the general aspect of one's work to the more particular ones.

The second and third research question reflect state within-person differences that may relate to daily playful work design. The second research question concerns the relation between playful work design and the extent to which people keep themselves engaged at work, on a day-to-day basis. An additional question arises in regard to the possibility of growth need strength to moderate the relation between playful work design and work engagement. Finally, the third research question points at the relation between playful work design and positive and negative affect, in their daily fluctuations.

Job autonomy

Job autonomy is described in the literature as the amount of freedom perceived by the employees at their job, regarding their choice in work structures and procedures (Hackman & Oldham, 1976). In this sense, having job autonomy may encourage and enable employees to design their own work, as this allows for a sense of importance in the decision-making processes in which they are involved. Accordingly, it has been shown that job autonomy enhances intrinsic motivation and learning (Hackman & Oldham, 1980), which are outcomes that can subsequently drive playful behavior at work.

Autonomy is also one of the core psychological needs that are being satisfied when challenge job demands are taken on and fulfilled (Van den Broek, Vansteenkiste, & De Witte, 2008). In particular, a job that encourages autonomous initiatives and allows for making decisions according to one's own ability is considered to have a high level of job autonomy, which may be the basis for approaching challenge job demands in creative ways. Therefore, the following is expected:

H1a: *Higher job autonomy is positively associated with more playful work design.*

Manager support for fun

Manager support implies creating conditions that facilitate the employees' feelings of meaningfulness. It can be effective for altering the employees' perspectives on work (Christian, Garza & Slaughter, 2011). After the concept of general manager support, manager support for fun was defined in the literature as "the extent to which managers allow and encourage employees to have fun on the job" (Tews, Michel & Stafford, 2013). There is a growing body of research literature on the benefits of engaging work groups in recreational activities and making the workplace fun: reduced turnover, increased enjoyment at work, commitment and increased performance (Tews, Michel, & Stafford, 2013). These results can be achieved by encouraging coworker socialization, assigning employees amusing job tasks or organizing parties, such as office parties and birthday parties (e.g. McDowell, 2004). However, working in a fun culture doesn't necessarily mean that all work is done in a game-like manner, but rather that it creates the context which sustains fun experiences, thus increasing their likelihood of occurrence (Fleming, 2005). Because of this influence that managers have over their subordinates' perception of work and, subsequently, of their own tasks, we hypothesize that, when employees know that their fun activities are given importance at work, they are more engaged with their tasks, in a playful manner. Therefore, the following is hypothesized:

H1b: *Manager support for fun is positively associated with playful work design.*

Growth need strength

Growth need strength represents the extent to which individuals attribute importance to personal development and challenge (Hackman & Oldham, 1980). It is an interpersonal characteristic which reflects the psychological need to actively seek to improve as a person. Moreover, it is assumed that having a high level of growth need strength makes one more likely to seek the fulfillment of this need around them. Work being a crucial aspect in most people's lives, the workplace is also where growth need strength can be satisfied by the employee.

Oldham and Hackman (2010) addressed the question of whether employees with high growth need are more likely to make changes to their working context so that they increase their challenges. However, to our knowledge, the concept has not yet been explicitly linked with work design or other similar attempts at changing the context in which one works. The present study aims to partially answer Oldham and Hackman's question, viewing playful work design as an attempt to increase one's challenge job demands, in a creative manner. Therefore, we hypothesize that, if someone has this intrinsic need of exploring their opportunities and try out new endeavor to expand their knowledge, they are more likely to engage themselves into expanding their repertoire of interesting activities at work. The following is hypothesized:

H1c: *Growth need strength is positively associated with playful work design.*

Work engagement

Work engagement consists of an attitudinal state related to work, characterized by vigor, dedication and absorption (Schaufeli, Bakker, & Salanova, 2006). Employees who are engaged with their jobs are typically energetic at work and connect with their work, attributing personal meaning to it. Consequently, being engaged at work involves using a high level of job resources and dealing with high job demands (Bakker, Hakanen, Demerouti, & Xanthopoulou, 2007). Following this logic, increasing challenge demands by approaching present tasks in a different and creative manner is likely to make one more engaged. Furthermore, working in a fun environment can improve the attitudes of employees toward work, in a positive sense (Ford, McLaughlin, & Newstrom, 2003).

In turn, viewing the relation between work engagement and playful work design starting with the former, engaged employees are more likely to be open to new information, more proactive and more intrinsically motivated (Bakker, 2011), which, in turn, might make them more willing to voluntarily look for innovative means of solving their tasks. Overall, we expect that when people are more invested in their work activities and give it purpose, on a day-to-day basis, they are more likely to be involved in finding innovative and playful ways of dealing with those specific activities. It was expected that:

H2a: *Day-level playful work design is positively related to day-level work engagement.*

As suggested by Sonnentag (2003), individual variables such as growth need strength might be moderators of the relationship between job design according to one's preference and meaning of it and motivational outcomes and might influence the degree of work design one applies to the job. This proposition is especially relevant for this paper, because work engagement serves as a motivational outcome. Moreover, by making an activity more playful, one gives it at least the temporary purpose of fulfilling the growth need strength, seen in the propensity of employees for personal development and for exploring opportunities at work. Based on these assumptions, we formulated the following hypothesis:

H2b: *High levels of growth need strength strengthens the positive relationship between day-level playful work design and day-level work engagement.*

Positive and negative affect

How one feels like at work imprints their decisions concerning the actions to take in the respective setting and the way in which they involve themselves in various activities (Fisher & Ashkanasy, 2000). In the literature, affect is predominantly split into positive and negative and each of these two dimensions is considered either low or high. The dimensions are opposite of one another, yet don't only represent the absence of the other: positive affect reflects an open and optimistic view on the present situation a person is involved in, while negative affect conveys hustle and worry related to the situation (Watson & Tellegen, 1985). The positive and negative aspects of affect are measured on different scales, because people can have multiple attitudes, directed at one or more objects, individuals or events, at the same time. Positive affect can go from depression, sadness (low) to enthusiasm (high) and negative affect can go from calmness (low) to anxiety or tension (high).

Moreover, affect can also be conceptualized as a state mood at work through another set of dimensions: hedonism and activation (Weiss & Cropanzano, 1996). Hedonic tendencies are, by definition, marked by one's giving in to momentary pleasures and enjoyment. In other words, hedonism implies play and fun in its most simple and direct way. Moreover, activation, the other dimension of affect, is the mobilizing aspect of someone's state mood. It is most apparent when it enables individuals to use their resources in order to come up with new ideas and products, thus innovating their way of working, even on a small scale. Because of these two complementary mechanisms, we hypothesize that both types of affect be related to the frequency at which employees are engaged in playful work design:

H3a: *Day-level positive affect is positively related to day-level playful work design.*

H3b: *Day-level negative affect is negatively related to day-level playful work design.*

2. METHODOLOGY

Sample and procedure

Participants were 55 white-collar workers across Romania, from various industries, gathered through snowball sampling and via Facebook posts. Considering the diversity of jobs had by the respondents, we consider the systematic error associated with this nonprobability sampling technique minimal.

We find most relevant to study this concept within a sample of white collar workers, as their work is not repetitive and they have the opportunity to change the way in which they do their job, as long as they complete their tasks. The condition for participating in this study was not being involved in any major restructuring of the company, because otherwise variables considered relatively stable, such as job autonomy or manager support for fun, might fluctuate severely from day to day and because the situations would not constitute samples of typical behaviors at work, for the participants involved.

All employees were informed about the purpose of the study and asked to participate voluntarily. After filling in all the responses, they would automatically enter the draw for a prize. Instructions were given about the completion of the baseline and daily surveys on Monday and then only the daily survey each of at least 3 consecutive working days. The daily surveys were sent across a week in May 2017, through an individualized link to Qualtrics for each participant, via email, for each person who filled in the baseline survey. I also kept in touch with most of the participants, sending reminders and replying to messages.

The baseline survey contained scales of job autonomy, manager support for fun, growth need strength and demographic data (age, gender). Moreover, it contained questions about the type of contract (permanent or temporary), number of working hours per week and amount of quantitative job demands, to obtain more accurate information about the characteristics of the sample and about their job demands, as eventual control variable, to check whether employees with higher job demands have less time or availability for playful job design. Consequently, the daily survey for Monday contained a long scale of playful work design, daily work engagement and positive and negative affect.

The daily data entries from Tuesday to Friday were about the abridged version of the long daily playful work design, daily work engagement and positive and negative affect. All the items in the baseline and short surveys were available in the Romanian language, obtained through back-to-back translation.

Out of all the people signing in for the study through the baseline survey, 50 diaries with 5 entries and 5 diaries with 4 entries were obtained. Of all 55 participants, N = 10 participants were male (17.9%) and N = 45 were female (80.4%). The mean age of the participants was M = 31.35 (SD = 8.95), which is representative for the general working population, as the ages ranged from 21 to 51. The majority of participants (47, 83.9%) had a permanent employment contract and the rest (N = 8, 14.3%) had a temporary one. Finally, the average of working hours per week per person was 38.17 (SD = 6.62).

Instruments

Job autonomy was measured by Breaugh's (1999) 9-item scale, containing 3 sub-scales: work method autonomy (e.g. "I am free to choose the method(s) to use in carrying out my work"), work scheduling autonomy (e.g. "I have control over the scheduling of my work") and work criteria autonomy (e.g. "My job allows me to modify the normal way we are evaluated so that I can emphasize some aspects of my job and play down others"). For the purpose of this study, we used the overall job autonomy factor. The rating is made on a Likert response scale from 1 (strongly disagree) to 7 (strongly agree). Cronbach's alpha was high: α = .91.

Manager support for fun was measured through a 5-item scale of Tews et al. (2014). Example items were: "My managers try to make working fun", "My managers care about employees having fun on the job". The respondents indicated the extent to which they agreed with each statement using a 5-point response scale ranging from 1 (strongly disagree) to 5 (strongly agree). A high Cronbach's alpha (α = .93) was found.

Growth need strength was measured through a sub-scale of Hackman and Oldham's (1976) Job Diagnostic Survey. The items involved characteristics which can be present in any job and were measured on a scale from 1 (Would like having this only a moderate amount or less) to 10 (Would like having this extremely much). Example items were "stimulating and challenging work" and "chances to exercise independent thought and action in my job". Cronbach's alpha was high: α = .83.

Daily work engagement was assessed with the short 9-item version of the Utrecht Work Engagement Scale (Schaufeli, Bakker, & Salanova, 2006), adapted as a daily state (Brevaart, Bakker, Demerouti, & Hetland, 2012). These versions included three items for the engagement dimensions: vigour (e.g. "Today, I felt bursting with energy."), dedication (e.g. "Today, I was enthusiastic about my job.") and absorption (e.g. "Today, I was immersed in my work."), measured on a scale from 0 (strongly disagree) to 6 (strongly agree). We computed an overall daily work engagement score score for each day. Cronbach's α's were high, ranging from .88 to .95 during the 5 days.

To assess playful work design, an extensive scale was developed in collaboration with the Work and Organizational Psychology research group of the Institute of Psychology at Erasmus University Rotterdam and then adapted for the daily measure. It was made up of 32 items (e.g. "Today, I invented new goals or rules to make a task more interesting for me."), scaled from 1 (never) to 5 (always) and adapted to daily behaviours for this study (α = .96). Out of these items, 4 most internally consistent and face valid were chosen for the abridged scale (Appendix A), which was then included in the following daily surveys, with high Cronbach's alphas ranging from α = .86 to α = .92 for the 5 daily surveys. For the analysis of playful work design for the first day, the data of these 4 items was considered out of the 32. Moreover, the general playful work design score was made up of the daily scores and used in the analysis. The Cronbach's alpha for this scale was also high: α = .92.

Positive and negative affect were measured with the Positive and Negative Affect Scales (PANAS; Watson, Clark, & Tellegen, 1988), every day. They were two 10-item mood scales, with scales from 1 (very slightly to not at all) to 5 (extremely), measuring affect in the respective days, with high reliability (α ranging from .86 to .94 and from .80 to .87, respectively, for the 5 days). The items were adjectives describing positive or negative feelings or emotions, such as "interested", "excited" and "proud" for positive affect and "irritable", "afraid" and "ashamed" for negative affect.

Quantitative job demands composed the control variable and were measured with 4 items, scaled from 1 (never/hardly ever) to 5 (always), with a scale of the second version of the Copenhagen Psychosocial Questionnaire (Pejtersen, Kristensen, Borg, & Bjorner, 2010). An example of item is "Do you get behind with your work?". Cronbach's alpha was high: α = .83.

Data analysis

A diary design was chosen, because we wanted to observe the fluctuation of the variables on a daily basis, as well as the interpersonal differences in relation to the unstable variables, applicable to the same group of employees. The diary method offers insight into natural life contexts, as opposed to laboratory settings. Moreover, the results of this study were less affected by the retrospective bias than the survey study results usually are (Ohly, Sonnentag, Niessen, & Zapf, 2010).

For each study participant, data was available at two levels: at the day level and at the person level. Job autonomy, manager support for fun, growth need strength, playful work behavior (as the average between the day-level playful work behavior, per person) and quantitative job demands were between-subject variables, as measured to answer questions related to differences between individuals. On the other hand, day-level work engagement, positive affect, negative affect and playful work behavior were all measured within-persons, as we were interested in the fluctuations in those variables for each case.

The data were analyzed with multiple regression for the first three hypotheses. Then, multilevel modeling for longitudinal data (Heck, Thomas, & Tabata, 2014) was applied for the rest of the hypotheses, because the variables which are involved in the respective analyses are continuous and they

belong to repeated measures data. Moreover, the multilevel model can handle missing data (Hox, 2002), such as those of the 5 participants who only filled in the small survey for 4 days out of 5. The day variable (computed while switching from the wide to the long format of the data) was added to the analyses as a fixed variable, so that I could control for the 'good day' effect, for the case in which the day of the responses, in the sequence of workdays, influenced the outcomes or the relationships between variables. Multilevel modeling was performed with maximum likelihood estimation, as repeated measurements were nested within individuals. The data may be viewed on 2 levels, with the repeated measurements (the daily-level data, N = 270 occasions) at the first level and the within-person data at the second level (N = 55 participants). Controlling for this, the method was more conservative than ordinary least squares regression analysis. Moreover, because of the focus on within-person processes, the day-level variables daily playful work design, daily positive affect and daily negative affect were centered on their person-level mean when analyzed as predictors. The SPSS (IBM Corp., Armonk, NY, USA) 20 software package was used for testing the study hypotheses.

3. RESULTS

Table 1 shows means, standard deviations and zero-order correlations between the continuous study variables. Age, working hours per week and quantitative job design were not significantly related to the dependent variable (general playful work design; see Table 1) and were thus not included in further analyses. As expected, quantitative job demands were low, as the participants were white-collar workers. Playful work design, work engagement and manager support for fun scores were average. The average of growth need strength was high.

Variability over time

We calculated the intraclass correlation for each first-level variable, in order to determine the amount of variance which can be attributed to the different levels of analysis (Hox, 2002). Results revealed that 67.8% variance in daily playful work design, 38.9% variance in positive affect, 30.4% variance in negative affect and 37.1% variance in daily work engagement can be attributed to between-person variation. These results indicate that there are considerable proportions of variance which can be explained by within-person fluctuations. Therefore, the application of multilevel analysis is supported.

Test of hypotheses

To test the first three hypotheses, I performed a multiple regression with job autonomy (hypothesis 1a), manager support for fun (hypothesis 1b) and growth need strength (hypothesis 1c) as independent variables and general playful work design as the dependent variable, after checking the necessary assumptions. All the assumptions specific for the multiple regression were met (Field, 2009). Table 2 illustrates this regression model. Overall, the model accounted for 4.6% of the variance in general playful work design and was a nonsignificant fit of the data: $F(3,51) = 0.82$, $p = .487$. Consequently, each of job autonomy ($t(55) = -0.94$, $p = .352$), manager support for fun ($t(55) = 1.08$, $p = .287$) and growth need strength ($t(55) = 1.13$, $p = .263$) did not individually predict general playful work design. Therefore, hypotheses 1a, 1b and 1c were not supported.

To test whether day-level playful work design is significantly related to day-level work engagement (hypothesis 2a), multilevel modeling analyses were conducted. I compared four models: a Null (intercept-only) model, Model 1 (where day is added), Model 2 (where, apart from day, day-level playful work design was added) and Model 3 (where growth need strength is also added, to test if it can be further considered a moderator). By including the day variable as measurement moment, I control for the possibility that the relationship between the day-level variables exist due to simultaneous variations between days.

The models are summarized in Table 3. It includes the unstandardized estimates, standard errors and t values. Also, intercept variances at the day-level (Level 1) and at the person-level (Level 2) are displayed and explained variance is calculated. The results of the null model suggest that the development of a multilevel model is warranted, as intercepts vary significantly across people (Wald $Z = 3.86$, $p < .001$). In Model 1, the day variable was not related to day-level work engagement. This means that day-level work engagement is not influenced by when the day itself is in the sequence of the workdays. Model 2 reveals day-level playful work design to be positively related to day-level work engagement. Model 3 suggests that after adding the day, day-level playful work design and growth need strength as predictors, the intercepts still vary significantly within people (Wald $Z = 10.36$, $p < .001$) and between people (Wald $Z = 4.16$, $p < .001$). Throughout, the models show that the day doesn't significantly affect the relationship between the day-level variables. Additionally, after controlling for other predictors in the model, growth need strength doesn't affect day-level work engagement ($\gamma = 0.03$, $p = .830$) when it is added to the model as a preliminary step for testing the moderating effect.

To test whether growth need strength moderates the relationship between day-level playful work design and day-level work engagement (hypothesis 2b), I explored whether growth need strength interacted with the size of the within-person slope (i.e., the slope defining the relationship between day-level playful work design and day-level work engagement), by adding a randomly varying slope. The results of Model 4 are shown in Table 4. The remaining intercept variance is still significant (Wald $Z = 4.19$, $p < .001$), which indicates that even after adding all the predictors to the model, there is still variance in intercepts that could be explained within-person, by adding additional person-level variables. The slope variance (0.07) is not significant (Wald $Z = .582$, one-tailed $p = .28$). This suggests that the slopes don't vary significantly across people in the sample. Growth need strength being a between-person variable, so a model cannot be further developed to explain the variability in slope defined by the day-level playful work design and day-level work engagement across people, by introducing the cross-level interaction (Hox, 2002). Therefore, hypothesis 2b is not supported.

Moving on to hypotheses 3a and 3b, I examined a Null (intercept-only model), Model 1 (where day is again added), Model 2 (including day and day-level positive affect) and Model 3 (including day and day-level negative affect). The results of the multilevel analyses are shown in Table 5. At Level 1, the day influences day-level playful work design, correlating to it negatively, and this influence remains throughout the analyses. After controlling for the 'good day effect', the results suggest that day-level positive affect significantly correlates with day-level playful work design, but day-level negative affect doesn't significantly correlate with day-level playful work design. After adding all predictors to the models, the intercepts still vary significantly within-person and between-person: Wald $Z = 10.37$, $p < .001$ for within-person variance and Wald $Z = 4.83$, $p < .001$ for within-person variance in Model 2; Wald $Z = 10.37$, $p < .001$ for within-person variance and Wald $Z = 4.79$, $p < .001$ for between-person variance in Model 3. Therefore, hypothesis 3a is supported and hypothesis 3b is not supported.

Table 1. *Means, standard deviations and correlations among the study variables*

	Means	*SD*	1	2	3	4	5	6	7	8	9	10
1 Age	31.36	8.93										
2 Working hours/week	38.17	6.62	.34*									
3 Quantitative job demands	2.43	0.77	.08	.32*								
4 Job autonomy	5.16	1.17	-.00	-.10	-.03							
5 Manager support for fun	2.88	1.18	-.50**	-.28*	-.08	.40**						
6 Growth need strength	6.33	0.96	-.01	-.08	.01	.08	-.04					
7 General playful work design	2.42	0.91	-.22	-.16	-.06	-.06	.10	.14				
8 Day-level playful work design	2.42	1.05	-.19	-.06	-.06	-.07	.08	.12	.65**			
9 Day-level work engagement	4.40	1.28	-.09	-.07	-.05	.29	.23	.04	.26	.39**		
10 Day-level positive affect	3.09	0.86	-.17	-.05	-.02	.18	.10	.21	.40**	.43**	.76**	
11 Day-level negative affect	1.40	0.46	-.17	.09	.26	-.11	.01	.04	.20	.12*	-.15*	-.06

Note. First-level data (9-12) was averaged across days; N = 55 participants.
** $p < .01$; * $p < .05$.

Table 2. *The linear model of predictors of general playful work design, with 95% confidence intervals*

	B	Standard Error of B	Standardized Coefficient	P
Constant	1.69 (-2.74, 3.65)	0.98		.090
Job autonomy	-0.01 (-0.04, 0.01)	0.01	-.14	.940
Management support for fun	0.02 (-0.02, 0.07)	0.02	.16	.287
Growth need strength	0.03 (-0.02, 0.08)	0.03	.16	.263

Note. $R^2 = .05$; N = 55 participants.

Table 3. *Multilevel estimates for models associating person-centered day-level playful work design with work engagement*

Model and variable	Estimate	SE	T	- 2 * LL	diff - 2 * LL (df)	Level 1 variance (SE)	Level 2 variance (SE)
Null model				855.13		1.03 (0.10)	0.61 (0.16)
Intercept	4.40	0.12	36.08**				
Model 1				854.81	0.32 (1)	1.03 (0.10)	0.61 (0.16)
Intercept	4.32	0.18	24.23**				
Day	0.02	0.04	0.57				
Model 2				807.87	46.94** (1)	0.84 (0.08)	0.69 (0.17)
Intercept	4.24	0.17	24.50**				
Day	0.05	0.04	1.33				
Day-level playful work design	0.60	0.11	5.65**				
Model 3				807.82	0.05** (1)	0.84 (0.08)	0.69 (0.16)
Intercept	4.06	0.85	4.75**				
Day	0.05	0.04	1.33				
Day-level playful work design	0.60	0.11	5.65**				
Growth need strength	0.03	0.13	0.21				

Note. LL = log likelihood; diff = difference; N = 55 employees; N = 270 observations.

** $p < .01$.

Table 4. *Multilevel estimates for the model including a randomly varying slope for growth need strength in the prediction of work engagement*

Model and variable	Estimate	SE	t	- 2 * LL	Level 1 variance (SE)	Level 2 variance (SE)
Model 4				807.41	0.82 (0.08)	0.70 (0.17)
Intercept	4.05	0.85	4.75**			
Day	0.05	0.04	1.34			
Day-level playful work design	0.59	0.11	5.14**			
Growth need strength	0.03	0.13	0.21			

Note. LL = log likelihood; diff = difference from Model 3; N = 55 employees; N = 270 observations.

** $p < .01$.

Table 5. *Multilevel estimates for models associating person-centered day-level positive and negative affect with day-level playful work design*

Model and variable	Estimate	SE	T	- 2 * LL	diff - 2 * LL (df)	Level 1 variance (SE)	Level 2 variance (SE)
Null model				618.98		0.35 (0.03)	0.74 (0.15)
Intercept	2.42	0.12	19.84**				
Model 1				614.92	4.06** (1)	0.35 (0.03)	0.75 (0.16)
Intercept	2.57	0.14	17.90**				
Day	-0.05	0.02	-2.02*				
Model 2				594.21	20.71** (1)	0.31 (0.03)	0.75 (0.16)
Intercept	2.57	0.14	18.12**				
Day	-0.05	0.02	-2.05*				
Day-level positive affect	0.27	0.06	4.66**				
Model 3				611.94	2.98** (1)	0.34 (0.03)	0.75 (0.15)
Intercept	2.62	0.15	17.93**				
Day	-0.07	0.03	-2.52*				
Day-level negative affect	-0.18	0.11	-1.73				

Note. LL = log likelihood; diff = difference; N = 55 employees; N = 270 observations.

** $p < .01$, * $p < .05$.

4. DISCUSSION

The aim of the present study was to determine the correlates of playful work design, in the context of Romanian white-collar workers. Playful work design was conceptualized as the integration of game-like elements into employees' day-to-day work, in order to reach their imposed work-related goals. Specifically, I examined the relationship of playful work design averaged across days with job autonomy, manager support for fun and growth need strength. Moreover, on a daily level, I examined the relationship of playful work design with work engagement, positive affect and negative affect and inspected the possibly moderating role of growth need strength in the relationship between playful work design and work engagement.

Prediction of general playful work design

Job autonomy lead to increased intrinsic motivation in Hackman and Oldham's (1980) study, so we expected that this would determine employees to initiate diverse activities at work to fulfill their tasks, adding their own fun touch to them. Moreover, assigning funny tasks to employees makes them enjoy work more (McDowell, 2004), so I expected that when employees were more supported for fun by their manager, they would display more playful work design. Furthermore, based on Oldham and Hackman's (2010) proposition that employees with high growth need strength should be expected to initiate change in their tasks themselves, I also tested the prediction of playful work design by growth need strength. However, contrary to expectations, neither job autonomy nor manager support for fun or growth need strength predicted playful work design in this study. In particular, the fact that job autonomy didn't predict the frequency of the employees' playful work design indicates that, at least among Romanian white-collar workers, being more responsible for one's own work and having the freedom to adjust one's own tasks to their needs and preferences doesn't considerably influence the extent to which they add game-like elements to their work. In other words, more often than not, job autonomy was not used as a means to make one's work more playful, even when the employees are aware of their autonomy. An alternative explanation is that employees didn't resort to playful work design according to the permission and support to do so at their workplace, because they didn't see work as the appropriate environment for play, considering the average to low means of playful work design of the participants. Moreover, it might have been the case that they didn't find ways to use play for their specific tasks, since it was no common practice mentioned in any formal documents or officially suggested.

Moreover, the extent to which employees felt supported by their managers to have fun at the workplace didn't influence their playful work design. The lack of support for hypothesis 1c reinforces the idea that employees' need to grow was not fulfilled by them incorporating game-like elements to their tasks. This reasoning doesn't necessarily imply that people didn't wish to develop themselves on a personal level or even play at work. Indeed, Owler, Morrison and Plester's (2010) research shows that employees seek and enjoy fun activities at work. Rather, the results suggest that playful work design cannot be determined by the studied general job characteristic (job autonomy), contextual characteristic (manager support for fun) and interpersonal characteristic (growth need strength). Possibly, other general, contextual or interpersonal characteristics play a role in predicting playful work design. Another possibility is that other individual characteristics, such as personality, predict playful work design.

The relationship between playful work design and work engagement

According to expectations, playful work design was positively associated with work engagement, across days. This finding suggests that adding game-like elements to work relates with feelings of vigor, dedication and absorption at work (Bakker, Schaufeli, Leiter, & Taris, 2008). Therefore, the employees can make themselves more engaged at work by changing their work themselves, which is in accordance with the job crafting literature (Tims, Bakker & Derks, 2012). As play is in general inherently pleasure-based (Isen & Reeve, 2005), playful work design would appear to be tied to work engagement, as is also suggested by this study. Moreover, it is worth noting that the relationship is maintained regardless of how far into the working week people are.

Furthermore, I expected that growth need strength would explain possible differences in the strength of the relationship between playful work design and work engagement, as Sonnentag (2003) suggested it could potentially moderate the relationship between bottom-up job design and work-related motivational outcomes. Results of multilevel analyses indeed indicated that there was much between-person variability to be explored. This means that the relationship between playful work design and work engagement might differ between people. However, growth need strength didn't moderate the relationship between playful work design and work engagement. In other words, the personal and psychological needs of people to develop themselves doesn't influence the strength of the relationship between playful work design and work engagement. Moreover, contrary to the widespread belief that one who fulfills their psychological needs is more involved in activities (Ryan & Deci, 2000), growth need strength doesn't lead to

more work engagement. An alternative explanation is that, because of the low sample size, it might have been difficult to find a cross-level interaction (Mathieu, Aguinis, Culpepper, & Chen, 2012).

The relationship between affect and playful work design

As expected, positive affect was related to playful work design, across days. This signifies that feelings of enthusiasm or excitation are connected to one's own initiative to make their work more playful. This result is in accordance with Fisher and Ashkanasy's (2000) previous findings that affect relates to one's choice in what actions they become involved in. However, negative affect was not related to playful work design on a daily level. Thus, the presence of positive affect such as excitation and enthusiasm predicted playful work design, while negative affect such as shame or agitation didn't. The results also reflect, yet again, that positive and negative affect are not only opposite, but function in ways which are different from each other (Watson, Clark, & Tellegen, 1988).

Moreover, it is worth noting that the day of the responses had a significant effect over day-level playful work design. In this sense, the more the days of the week progressed, the less people engaged in playful work design. A possible explanation for this could be that, as the week goes by, more and more tasks arise unpredictably and determine the employees to not take the time to experiment and transform their way of work progressively.

Methodological considerations and avenues for future research

Four issues in this thesis require further consideration. First, the following is a note about the particularity of the pool of participants and its relevance in context: the data belonged to Romanian white-collar workers from various industries and walks of life. In general, Romanians are conservative, as they have a national culture rooted in survival and traditional values (Inglehart & Welzel, 2005). Moreover, under harsh socioeconomic conditions, the self-expression values are undermined by survival values (Inglehart & Baker, 2000). Such values are different from secular-rational cultures such as those in Western Europe, so their view on work and work-related activities might also be different, which make the conclusions of this study more difficult to generalize to other populations. Therefore, it might be the case that they didn't associate work with play as much as employees from other countries would. The mean of daily playful work design, M = 2.42 (SD = 1.05) on a scale from 1 to 5 is low to moderate, but these scores might also be reported relative to their own perception of the extent to which playful work design is allowed in Romania. Lastly, if the participants were not used to performing work-related tasks in a game-like manner, their work engagement and affect might have been influenced by other activities rather than playful work design, that I didn't consider and control for.

Secondly, an issue to be considered is that the results yielded great variability within and between people. For this reason, I encourage further research to add to the model expanded through this paper. There may be some other important personal characteristics making one more prone to be engaged in playful work design, which we haven't considered, such as personality, and some contextual and managerial aspects that may influence the manifestation of playful work design.

Thirdly, all day-level variables were measured at one time point sequentially each day. Although I haven't assumed causality in the relationships between day-level variables, the nature of the mixed model involved analyses which considered several variables as outcomes and others at predictors. Therefore, further studies should explore causal relations and examine the reversed effects of, for example, day-level playful work design and day-level positive affect.

Finally, a limitation of this study concerns the construct validity of the general daily playful work design scale. It was calculated by averaging the scores of the responses to the daily playful work design scale, for each participant. Therefore, it is assumed to be accurate for the week in which data was collected. However, the respective data may not be representative of the participants of the study across a longer period of time, such as 3 months or longer. This is also because work-related attitudes and affect depend highly on the various events happening in their lives (Bakker & Oerlemans, 2011). The current study focuses on changes in the measured variables in short periods of time and not across months or across one's entire work at a specific company. Careful interpretation of the results is thus advisable.

Theoretical and practical implications

All in all, this paper makes three important theoretical contributions. Firstly, it introduces the understudied concept of playful work design, as the phenomenon of going about one's pre-defined work objectives in a game-like manner. Secondly, the place of the concept is explicitly established in a model comprising of emotion-based reactions, attitudes and personal needs. Thirdly, a new scale of daily playful work design was designed, which can be used in future research.

The major strength of this study resided in its longitudinal design: because it was a diary study, variables such as playful work design and work engagement could be measured at several time points, thus making the data reliable. In this sense, 270 surveys were filled in and the

response rate throughout the days is high: 98.18%. Out of 55 people, 5 filled in the survey only 4 out of 5 days.

Moreover, clear variable patterns could be analyzed over time, one in relation to the other, thus reflecting the changes in time.

The fact that the predictions of playful work design by job autonomy, manager support for fun and growth need strength were not supported doesn't make these results less valuable for practice. Indeed, people expect their work to be fun and enjoyable even before beginning work (Tews, Michel, & Bartlett, 2012), but neither giving them freedom to make their own decisions at work, nor supporting their entertainment at work is the way to promote playful work design. Moreover, employees' need for growth itself doesn't lead to increased playful work design.

As far as the fluctuations of the day-level variables and their relationships are concerned, being more engaged in one's own work and experiencing positive affect on a certain day appears to make one more likely to add play-like elements to their work. This finding can be relevant to human resource managers, as it shows that daily affect fluctuations of employees can affect their behavior, thus highlighting the importance of a positive atmosphere at work and of workplace elements that elicit different emotions. When being involved in playful work design, employees were often also experiencing positive affect. However, negative affect was not related to playful work design, on a daily basis, which suggests that eliciting positive emotions might be more beneficial than trying to avoid negative ones.

Further analyses showed that as the work week goes by, employees are involved less involved in playful work design. This finding is especially important for managers, who could purposely create a more positive environment towards the end of the week to support playful work design, not by supporting the employees' fun at the workplace, for instance by finding ways to elicit employees' positive affect during work.

A major take-home message of this article is that employees themselves can take steps to be more engaged at work and experience more positive affect by means of a bottom-up approach: playful work design. Therefore, creating ways to challenge yourself at work in a playful way and imagining funny images or stories when dealing with stress are ways for an employee to become more engaged.

REFERENCES

Bakker, A. B., & Oerlemans, W. (2011). Subjective well-being in organizations. The Oxford handbook of positive organizational scholarship, 178-189.

Bakker, A. B., Hakanen, J. J., Demerouti, E., & Xanthopoulou, D. (2007). Job resources boost work engagement, particularly when job demands are high. Journal of educational psychology, 99(2), 274.

Bakker, A. B., & Demerouti, E. (2007). The job demands-resources model: State of the art. Journal of managerial psychology, 22(3), 309-328.

Bakker, A. B., Schaufeli, W. B., Leiter, M. P., & Taris, T. W. (2008). Work engagement: An emerging concept in occupational health psychology. Work & Stress, 22(3), 187-200.

Bakker, A. B. (2011). An evidence-based model of work engagement. Current Directions in Psychological Science, 20(4), 265–269.

Bakker, A. B., Albrecht, S., & Leiter, M. (2011). Work engagement: Further reflections on the state of play. European Journal of Work and Organizational Psychology, 20(1), 74-88.

Breaugh, J.A. (1999). Further investigation of the work autonomy scales: two studies. Journal of Business and Psychology, Vol. 13 No. 3, 357-73.

Breevart, K., Bakker, A., B., Demerouti, E., & Hetland, J. (2012). The measurement of state work engagement: A multilevel factor analytic study. European Journal of Psychological Assessment, 28, 305-312.

Cavanaugh, M. A., Boswell, W. R., Roehling., M. V., & Boudreau, J. W. (2000). An empirical examination of self-reported work stress among U.S. managers. Journal of Applied Psychology, 85, 65-74.Christian, M.S., Garza A.S. & Slaughter J.E. (2011). Work engagement: A quantitative review and test of its relations with task and contextual performance. Personnel Psychology,64, 89-136.

Crawford, E. R., LePine, J. A., & Rich, B. L. (2010). Linking job demands and resources to employee engagement and burnout: a theoretical extension and meta-analytic test. Journal of Applied Psychology, 95(5), 834-848.

Field, A. (2009). Discovering statistics using SPSS. Sage publications.

Fisher, C. D., & Ashkanasy, N. M. (2000). The emerging role of emotions in work life: An introduction. Journal of Organizational Behavior, 123-129.

Fleming, P. (2005). Workers' playtime? Boundaries and cynicism in a "culture of fun" program. The Journal of Applied Behavioral Science, 41(3), 285-303.

Fluegge, E. R. (2008). Who put the fun in functional? Fun at work and its effects on job performance (Doctoral dissertation, University of Florida).

Ford, R. C., McLaughlin, F. S., & Newstrom, J. W. (2003). Questions and answers about fun at work. People and Strategy, 26(4), 18.

Ford, R. C., Newstrom, J. W., & McLaughlin, F. S. (2004). Making workplace fun more functional. Industrial and Commercial Training, 36(3), 117-120.

Frese, M., Zapf, D. (1994). Action as the core of work psychology: a German approach. In Triandis, H. C., Dunnette, M. D., & Hough, L. M. (Ed.), Handbook of Industrial and Organizational Psychology. Vol. 4 (pp. 271-340). Palo Alto, CA: Consulting Psychologists Press.

Galinsky, E., & Matos, K. (2011). The future of work-life fit. Organizational dynamics, 40(4), 267-280.

Grant, A. M., & Parker, S. K. (2009). Redesigning work design theories: the rise of relational and proactive perspectives. The Academy of Management Annals, 3(1), 317-375.

Hackman, J. R., & Oldham, G. R. (1976). Motivation through the design of work: Test of a theory. Organizational behavior and human performance, 16(2), 250-279.

Hackman, J. R., & Oldham, G. R. (1980). Work redesign. Reading, MA: Addison-Wesley.

Heck, R. H., Thomas, S. L., & Tabata, L. N. (2014). Multilevel and longitudinal modeling with IBM SPSS. Routledge.

Hox, J. (2002). Multilevel analysis: Techniques and applications. Erlbaum, Publishers: London.

Inglehart, R., & Baker, W. E. (2000). Modernization, cultural change, and the persistence of traditional values. American sociological review, 19-51.

Inglehart, R., & Welzel, C. (2005). Modernization, cultural change, and democracy: The human development sequence. Cambridge University Press.

Isen, A. M., & Reeve, J. (2005). The influence of positive affect on intrinsic and extrinsic motivation: Facilitating enjoyment of play, responsible work behavior, and self-control. Motivation and emotion, 29(4), 295-323.

Mathieu, J. E., Aguinis, H., Culpepper, S. A., & Chen, G. (2012). Understanding and estimating the power to detect cross-level interaction effects in multilevel modeling. Journal of Applied Psychology, 97(5), 951.

McDowell, T. (2004). Fun at work: Scale development, confirmatory factor analysis, and links to organizational outcomes. (Unpublished doctoral dissertation). Alliant International University, San Diego, CA.

Oldham, G. R., & Hackman, J. R. (2010). Not what it was and not what it will be: The future of job design research. Journal of Organizational Behavior, 31(2-3), 463-479.

Ohly, S., Sonnentag, S., Niessen, C., & Zapf, D. (2010). Diary studies in organizational research. Journal of Personnel Psychology.

Owler, K., Morrison, R., & Plester, B. (2010). Does fun work? The complexity of promoting fun at work. Journal of Management & Organization, 16(03), 338-352.

Parker, S. K. (2014). Beyond motivation: Job and work design for development, health, ambidexterity, and more. Annual Review of Psychology, 65, 661-691.

Pejtersen, J. H., Kristensen, T. S., Borg, V., & Bjorner, J. B. (2010). The second version of the Copenhagen Psychosocial Questionnaire. Scandinavian Journal of Public Health, 38(3), 8-24.

Ryan, R. M., & Deci, E. L. (2000). The darker and brighter sides of human existence: Basic psychological needs as a unifying concept. Psychological Inquiry, 11(4), 319-338.

Schaufeli, W. B., Bakker, A. B., & Salanova, M. (2006). The measurement of work engagement with a short questionnaire: A cross-national study. Educational and Psychological Measurement, 66(4), 701–716.

Tims, M., Bakker, A. B., & Derks, D. (2012). Development and validation of the job crafting scale. Journal of Vocational Behavior, 80(1), 173-186.

Tews, M. J., Michel, J. W., & Bartlett, A. L. (2012). The fundamental role of workplace fun in applicant attraction. Journal of Leadership and Organizational Studies, 19, 105–114.

Tews, M. J., Michel, J. W., & Stafford, K. (2013). Does fun pay? The impact of workplace fun on employee turnover and performance. Cornell Hospitality Quarterly, 54(4), 370-382.

Tews, M. J., Michel, J. W., & Allen, D. G. (2014). Fun and friends: The impact of workplace fun and constituent attachment on turnover in a hospitality context. Human Relations, 67(8), 923-946.

Van den Broeck, A., Vansteenkiste, M., & De Witte, H. (2008). Self-determination theory: A theoretical and empirical overview in occupational health psychology. In

McIntyre, S., & Houdmont, J. (Ed.), Occupational Health Psychology: European perspectives on research, education and practice (pp. 63-88). Nottingham University Press.

Watson, D. & Tellegen, A. (1985). Toward a consensual structure of mood. Psychological Bulletin, 98, 219–202.

Watson, D., Clark, L.A., & Tellegen, A. (1988). Development of brief measures of positive and negative affect: the PANAS Scale. Journal of Personality and Social Psychology, 54(6), 1063–1070.

Weick, K. E. (1995). Sensemaking in organizations (Vol. 3). Sage.

Weiss, H.M. & Cropanzano, R. (1996). Affective events theory: a theoretical discussion of the structure, causes and consequences of affective experiences at work. Research in Organizational Behavior, 18, 1-74.

Wrzesniewski, A., & Dutton, J. E. (2001). Crafting a job: Revisioning employees as active crafters of their work. Academy of Management Review, 26(2), 179-201.Borman, W. C., & Motowidlo, S. J. 1997. Task performance and contextual performance: The meaning for personnel selection research. Human Performance, 10: 99 –109.