

## CHAPTER 6

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# IN SEARCH OF CHALLENGE

## Flow at Work and the Development of Occupational Expertise

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In this chapter, we focus on the development and testing of a model that involves constructs seen under the umbrella of challenge, conceptualized by Mainiero and Sullivan (2006) as an individual's need to learn, grow, and find stimulation in one's work. In particular, we propose and test a mechanism of antecedents of occupational expertise, defined as proficiency in

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one's work role by means of possessing up-to-date skills, knowledge, and dexterities (Van der Heijde & Van der Heijden, 2006). Establishing expertise is one way for individuals to fulfill their need for challenge (Mainiero & Sullivan, 2006). In today's rapidly changing work environment, the development of expertise is important not only as a motivational force, but also as a means for individuals to remain employable (Baruch & Bozionelos, 2011; Bozionelos & Bozionelos, 2015). Likewise, employee expertise is important to organizations because it is associated with performance and competitive advantage (Harms & Brummel, 2013; McQuaid & Lindsay, 2005). Despite the relevance of expertise for individual and organizational effectiveness, there is limited knowledge regarding its antecedents (Bozionelos et al., 2016; van der Heijden, Gorgievski, & De Lange, 2016).

We explore the macro-level construct of learning climate and the micro-level construct of learning value of the job as potential antecedents of occupational expertise. The learning value of the job is specific to the job itself and whether the demands and opportunities contained within the confines of a particular job provide nutrient for development of skills and knowledge (Van der Heijden, 2006). In contrast, the learning climate is a characteristic of the wider organizational environment and refers to the extent to which organizational policies (e.g., information sharing, communication between teams and departments), practices (e.g., formal and informal training opportunities, rewards), and mentalities (e.g., tolerance for learning-related errors) facilitate the creation, acquisition, and transfer of knowledge by employees (Marsick & Watkins, 2003; Nikolova, Van Ruysseveldt, De Witte, & Van Dam, 2014). The learning value of the job and organizational learning climate are clearly different constructs (e.g., Evers, Van der Heijden, & Kreijns, 2016; Van der Heijden, 2006). For example, there can be jobs with low learning value within organizations with strong learning climates and vice versa (see Van der Heijden, 2006). Challenge is associated by many with learning and growing by means of taking difficult job assignments and projects (Mainiero & Sullivan, 2006), while for others learning serves as a means of confirming their identity (Mainiero & Sullivan, 2006). Hence, both learning related variables in the model are clearly linked with challenge.

Additionally, we propose that flow, defined as a state in which the individual is fully absorbed and engaged in what he or she is doing (Csikszentmihalyi, 1990; Csikszentmihalyi, Abuhamdeh, & Nakamura, 2005), mediates the relationship between organizational learning climate and learning value of the job, respectively, and occupational expertise. Considering that a condition for the experience of flow is to constantly seek, or be offered, challenges, the experience of flow is clearly a necessary condition for challenge (Bakker, 2005; Csikszentmihalyi, 1990). Under the experience of flow learning reaches its peak (Bakker, 2008; Csikszentmihalyi, 1990); hence,

flow should maximize the benefits of learning for the development of occupational expertise.

Finally, we propose that the family-to-work interference moderates the relationship between organizational learning climate and learning value of the job, respectively, and occupational expertise. In prior research, it has been found that the interference between the family and the work domain has substantial effects on work experiences and career outcomes (Boyd, Keeney, Sinha, & Ryan, 2015). We suggest that responsibilities and obligations in the non-work domain affect one's ability to benefit from learning experiences offered by the job or encouraged by a positive organizational learning climate.

Beyond having challenge as an overarching element, hence contributing to the consolidation of the kaleidoscope career metaphor, the study adds to extant literature in a number of ways. First, despite learning climate being an established construct, there is a dearth of studies looking at its implications for employee outcomes (Eldor & Harpaz, 2016; Kyndt & Dochy, 2013). Second, there is also a shortage of empirical studies on the presumed benefits of the job as a learning resource for employees' developmental outcomes (Van der Heijden et al., 2016). Both flow at work and occupational expertise are treated as outcomes of learning in the model, and they bear value for employees, employers, and the society in general. Third, there is still limited knowledge about antecedents of employability and its dimensions (Bozionelos et al., 2016; van der Heijden et al., 2016). Employability is the construct that is of most concern in the contemporary career-related literature (Baruch, Szucs, & Gunz, 2015) and has been so for a substantial amount of time (Bozionelos, 2001). Professional expertise is the largest dimension of employability (Van der Heijde & van der Heijden, 2006). Hence, gaining knowledge regarding antecedents of professional experience will be a valuable addition to the literature. Fourth, despite being a highly researched construct, family-to-work interference (and its reverse, work-to-family interference) has not been investigated for its relationships with learning and the outcomes of learning. Hence, the study contributes by assigning to family-to-work interference the important role of moderator in the way micro- and macro-level learning variables relate to important contemporary outcomes, such as flow and occupational expertise. In addition, family-to-work interference pertains to another parameter of the kaleidoscope career metaphor, balance (Mainiero & Sullivan, 2005; 2006); hence, the study also serves as a bridge for two out of the three elements of the kaleidoscope career model (KCM). Fifth, the study contributes by utilizing the conservation of resources (COR) theory as theoretical backdrop, a theory that has been developed within the context of stress (Hobfoll, 1988, 1989), but whose applicability in the work setting (Halbesleben, Neveu, Paustian-Underdahl, & Westman, 2014) and to interference between the

work and the family domain (ten Brummelhuis & Bakker, 2012) has only recently drawn attention. Finally, there is still limited knowledge on important career-related outcomes and their antecedents, including employability and its causes, within the Eastern European cultural cluster, where participants in the study were drawn from (Bozionelos, 2014; Bozionelos & Bozionelos, 2015; Bozionelos et al., 2016). There are considerable cultural differences between the Eastern European cluster and the Anglo-Saxon and the Northern European clusters (e.g., House, Hanges, Javidan, Dorfman, & Gupta, 2004) where most conceptual and empirical research in careers, but also in flow and learning, has been conducted so far. Hence, generalizations of extant knowledge cannot be safely made, unless actual empirical research within that cluster is conducted.

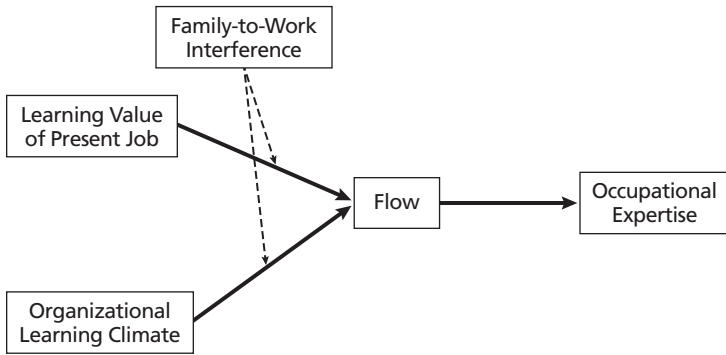
## Theoretical Background

COR theory (Hobfoll, 1988, 1989, 2002) posits that individuals seek to retain, protect, and gain resources. Resources are objects, conditions, energies, or personal characteristics that individuals value either in their own right or because they facilitate attaining valued goals (Halbesleben et al., 2014; Hobfoll, 1988, 1989). Resources, in turn, are distinguished into personal and contextual (Hobfoll, 2002). Personal resources are located within the person (e.g., skills, knowledge, personality traits, intellectual capacity, psychological capacities; Hobfoll, 2002). Hence, occupational expertise is a personal resource.

Contextual resources are located within the individual's immediate environment (Hobfoll, 2002). Therefore, properties of the job, such as its learning value, or characteristics of the wider organizational environment, such as the learning climate, are contextual resources. As seen, the learning value of the job refers to whether the job contains elements (e.g., challenging goals, autonomy, complexity, variety, feedback) that allow practice and extension of the job holder's capabilities that result in gaining new knowledge and skills or updating these (Van der Heijden & Bakker, 2011). Thus the job, by means of its learning value, acts as a resource for the individual employee. Likewise, the learning climate of the organization is a contextual resource, because it reflects encouragement and opportunities for learning within the organization (Mikkelsen & Gronhaug, 1999).

## Model Development

The hypothesized model is shown in Figure 6.1. COR theory posits that access to resources increases the likelihood of acquisition of further



**Figure 6.1** The hypothesized model. Dotted lines represent moderation effects.

resources (Hobfoll, 1989, 2002). This process is referred to as “gain spiral,” meaning that extant resources enable the individual to gain additional resources (Hobfoll, 2001, 2011; ten Brummelhuis & Bakker, 2012), and is supported by empirical work (Weigl et al., 2010). The process of gain spiral often starts from contextual resources that stimulate and foster the generation of personal resources (Hobfoll, 2011; ten Brummelhuis & Bakker, 2012). Hobfoll (2011) stresses that whether employees are able to develop themselves and grow on the job is contingent upon whether the organizational environment provides the relevant opportunities, policies, and mentality. COR theory, therefore, leads to the following hypotheses:

**Hypothesis 1:** *Learning value of the present job (H1a) and organizational learning climate (H1b) positively relate to occupational expertise.*

Flow at work is experienced when employees perceive that they have the resources to meet job demands (Bakker, 2005; Peters, Poutsma, Van der Heijden, Bakker, & de Bruijn, 2014). Workplace contextual resources assist individuals to meet the demands of the job along with enabling their own personal growth (Bakker & Demerouti, 2017; Demerouti, Bakker, Nachreiner, & Schaufeli, 2001). This relationship means that availability of substantial contextual resources in the form of jobs that have learning value and an organizational climate that encourages learning and skills acquisition will make it more likely for individuals to experience flow.

**Hypothesis 2:** *Learning value of the present job (H2a) and organizational learning climate (H2b) positively relate to flow at work.*

Authors suggest that under the experience of flow, learning reaches its peak (Bakker, 2008; Csikszentmihalyi, 1990). It follows that flow should

maximize the benefits of learning towards the development of occupational expertise. People who are absorbed in their work should reach greater expertise because of greater internalization of what they experience and better consolidation of acquired knowledge. In line with the above contemplation, a recent study with students found that those who were more focused and absorbed in their studies achieved better knowledge outcomes (Ketonen et al., 2016).

**Hypothesis 3:** *Flow at work positively relates to occupational expertise.*

Hypotheses 1 to 3 imply an intervening role for flow in the respective relationships. Hence, the following mediating hypothesis is posed:

**Hypothesis 4:** *Flow at work mediates the relationship of the learning value of the present job (H4a) and of the organizational learning climate (H4b) with occupational expertise.*

Interference between family and work life refers to the extent to which the demands imposed by the family sphere take away resources the individual needs in order to meet the demands of the job (ten Brummelhuis & Bakker, 2012). Family-to-work interference imposes substantial psychological strain (Kalliath, Kalliath, & Chan, 2015) that necessitates that individuals utilize existing personal resources (e.g., psychological, attentional, temporal) in order to deal with it (see Hobfoll, 1988). According to COR theory, the process of resource gain may be facilitated or inhibited by environmental conditions (Hobfoll, 2011; ten Brummelhuis & Bakker, 2012). This idea helps account for cases where the principle of gain spiral (i.e., access to resources increases the probability of further resource acquisition) does not seem to work—that is, where resources appear to be in abundance, but no noticeable gains in valued resources are evident (Hobfoll, 2001; Halbesleben et al., 2014). In this line, strong family-to-work interference may inhibit personal resources from translating into gains in personal resources. Hence, a job with high learning value or an organizational climate with strong learning elements may not lead to significant experience of flow if there is substantial interference between family and work life that depletes resources (e.g., time, attention, alertness) that otherwise the individual would pump into performing the job (Demerouti, Bakker, Sonnentag, & Fullagar, 2012). In line with the above reasoning, recent research found that family-to-work interference depleted work-related resources and subsequently reduced job satisfaction (Unruh, Raffenaud, & Fottler, 2016), which is a manifestation of flow (see Bakker, 2008). This conjecture directs to the following hypothesis:

**Hypothesis 5:** *Family-to-work interference negatively moderates the relationship of flow at work with both the learning value of the present job (H4a) and the organizational learning climate (H4b), such that under strong family-to-work interference the relationships are weaker.*

## METHOD

### Participants and Procedure

Participants were 282 (181 males and 101 females) information technology (IT) professionals (people who were involved in the design, development, implementation, maintenance and support of IT products and services) in two European countries, Greece ( $n = 94$ ) and Poland ( $n = 188$ ), which belong to the Eastern European cultural cluster (House et al., 2004). Their line manager completed the questionnaire that assessed occupational expertise. All participants were natives of these countries; hence, they shared similar cultural values while their employing organizations were embedded into similar cultures. This similarity made measurement variance due to differences in work values less likely. For example, the level of performance orientation of a society may influence the way jobs are designed and evaluated, that is, their learning value, but also the extent to which employees pursue development of expertise (see Javidan, 2004). Using respondents from the same cultural cluster reduced the possibility of confounding due to country-level effects.

Data for this study were collected as part of a larger project that sought to develop and validate the construct and measure of employability, including antecedents and consequences. The project employed a random selection of companies in each country who agreed to participate, chosen from the geographic regions that accounted for the majority of IT activity. The total numbers of participant companies was 51 from Greece and 72 from Poland. All IT professionals and their line managers in each of these companies were then approached independently by the research team and were asked to complete the questionnaires on a purely voluntary basis. Questionnaires were primarily completed electronically, but paper-and-pencil forms were also available upon request and were utilized very occasionally. Software or codes imprinted in the paper-and-pencil forms allowed the matching of employees' and their line managers' responses.

Mean age, tenure with current employer, length of total work experience, and educational attainment were 32.88 ( $SD = 8.2$ ) years, 4.18 ( $SD = 8.94$ ) years, 8.22 ( $SD = 7.73$ ) years, and 2.57 ( $SD = 1.26$ ) years, respectively. Of the participants, 144 were single, 120 married or cohabiting, and 18 were divorced or widowed, while most ( $n = 197$ ) had no dependents and the rest had from one



( $n = 57$ ) to three ( $n = 4$ ) dependents. Line managers' (211 males, 67 females and 11 who did not report their sex) mean age was 41.45 ( $SD = 8.42$ ) years.

## Measures

Questionnaires were administered to the respondents in their primary language, after having utilized the translation-back-translation procedure (e.g., Behling & Law, 2000) to ensure semantic equivalence with the original English versions of the scales. Unless otherwise stated, the measurement format was 5-point (1: *not at all*, 5: *to a great extent*).

### *Flow*

This construct was measured with five items (e.g., “I feel a lot of enjoyment in doing my work,” “I do this work without asking myself what will be the result for me”) from Bakker’s (2001) Work-Related Flow scale (WOLF) that has been extensively utilized in the literature (see Fullagar & Delle Fave, 2017). Cronbach alpha was .86.

### *Learning Value of Present Job*

This construct was measured with five items (e.g., “My job enables me to further develop my talents,” “I can learn more and more from my job”) from the scale developed by Van der Heijden and her associates (Van der Heijden et al., 2005; Van der Heijden & Bakker, 2011) that has been validated through extensive research across populations and cultures (Bozionelos et al., 2016; Van der Heijden et al., 2005). Cronbach alpha was .83.

### *Organizational Learning Climate*

This construct was measured with five items (e.g., “If I have a question about my job there is someone available to answer it,” “Everyone here shares information relevant to the job”) from the Learning Climate Questionnaire (Bartram, Foster, Lindley, Brown, & Nixon, 1993). Cronbach alpha was .79.

To confirm the discriminant and convergent validity, hence distinctiveness, of learning value of present job and organizational learning climate measures, a confirmatory factor analysis (CFA) was performed using the MPLUS 7.0 program (Muthén & Muthén, 1998/2012) and employing the maximum likelihood robust method that corrects for non-normality in the data. Model fit was assessed with the consultation of four widely utilized fit indices: the comparative fit index (CFI), the incremental fit index (IFI), the root mean squared error of approximation (RMSEA) and the standardized root mean square residual (SRMR). CFI and IFI values above .90 are considered to indicate acceptable fit, while values above .95



are viewed as indicative of very good fit (Bentler & Bonett, 1980). Values of SRMR below .08 are viewed as indicating good fit (Hu & Bentler, 1999), while values of RMSEA below .10 are viewed as acceptable and below .05 as very good (Hu & Bentler, 1999; Steiger, 1990). The  $\chi^2$  value was also reported, though this test is sensitive to the sample size; hence, with sufficiently large sample sizes, like the one in our study, it is of substantive value only if non-significant. The two-factor model demonstrated acceptable data fit ( $\chi^2 [34, n = 282] = 93.12, p < .001$ ; CFI = .957; TLI = .943; RMSEA = .080; SRMR = .043). Factor loadings ranged from .564 to .859 and were all significant at .001 level. In comparison, the single factor model (all items loading on a single factor) showed very poor fit ( $\chi^2 [27, n = 282] = 371.71, p < .001$ ; CFI = .633; TLI = .510; RMSEA = .213; SRMR = .132). These results clearly suggested that the two measures tapped different constructs.

### *Family-to-Work Interference*

This interference was measured with the five item scale of Netemeyer, Boles, and McMurrin (1996). Sample items include “the demands of my family or spouse/partner interfere with my work-related activities” and “what I want to do at work doesn’t get done because of family demands.” Cronbach alpha was .91.

### *Occupational Expertise*

This variable was measured with five items from the line manager version of the instrument developed by Van der Heijden and her associates (Van der Heijde & Van der Heijden, 2006; Van der Heijden et al., 2005). Line managers rated participants on various aspects of professional expertise using a 6-point response format (1: *not at all*, 2: *not really*, 3: *not very*, 4: *fairly*, 5: *sufficiently*, 6: *extremely*). Sample items include “During the past year, this employee was generally competent to perform his/her work accurately and with few mistakes” and “I have a lot of confidence in this employee’s capacities within his/her area of expertise.” Cronbach alpha was .92.

### *Controls*

Information on each control variable, including participants’ age (assessed using an open-ended question, “What is your year of birth?” and then deducting from the year of data collection), sex (1: male, 2: female), educational attainment (1: secondary school, 2: college/some university, 3: bachelor’s degree or recognized equivalent, 4: master’s degree or recognized equivalent, 5: doctorate), marital status (1: single, 2: married/cohabitating, 3: divorced, 4: widowed), number of dependents, tenure with current employer, and length of total work experience was obtained with single items. These factors may impact the experience of flow (see Ainley, Enger, & Kennedy, 2008; Bakker, 2008) and the development of occupational

expertise (van der Heijden, 2002; van der Heijde & van der Heijden, 2006; van der Heijden & Verhelst, 2002; Wittekind, Raeder, & Grote, 2010). Line managers' age and sex as well as length of time they had worked with each particular participant were collected because these may influence how line managers evaluate their subordinates (Roberson, Galvin, & Charles, 2007).

## RESULTS

Descriptive statistics and intercorrelations are presented in Table 6.1. Curiosity inspection of the correlation coefficients suggested presence of the hypothesized bivariate relationships. In particular, learning value of the present job was significantly related to flow ( $r = .20, p < .001$ ), and so was the organizational learning climate ( $r = .18, p < .01$ ). In addition, flow was significantly positively related to occupational expertise ( $r = .18, p < .05$ ).

Hypotheses were tested with structural equation modeling (SEM) using the MPlus 7 program with the maximum likelihood robust method along with the fit indices described earlier. The measurement model was tested in the first step, followed by the structural model (i.e., significance of path coefficients; Anderson & Gerbing, 1988). Only those controls that demonstrated significant relationships were included in the structural model (e.g., Wu, Tsui, & Kinicki, 2010), while items within factors were allowed to correlate freely in the process. Hypotheses contained specific directional relationships, hence, one-tailed significance testing was utilized.

**TABLE 6.1 Descriptive Statistics and Intercorrelations<sup>a</sup>**

Variable	Mean	SD	1	2	3	4	5	6	7	8
1. Age	32.88	8.20	—							
2. Educational level	2.57	1.26	.10	—						
3. Tenure (in years)	4.18	8.94	.58	.10	—					
4. Dependents	.41	.70	.33	.14	.21	—				
5. Flow	18.82	5.79	.13	.13	.07	.00	—			
6. Occupational expertise	22.45	4.37	.03	.23	.16	-.03	.13	—		
7. Learning value of present job	17.36	3.61	-.13	.06	0.0	-.08	.20	.26	—	
8. Organizational learning climate	17.54	3.56	-.22	.06	-.19	-.11	.18	.24	.35	—
9. Family-to-work interference	14.10	6.79	.01	-.03	-.05	.05	.04	-.14	.03	-.07

Note: Correlations  $\geq .12, .16$ , and  $.19$  are significant at  $.05, .01$ , and  $.001$ , respectively.

<sup>a</sup> ( $n = 282$ )

The measurement model with the four latent factors (learning value of present job, organizational learning climate, flow, and occupational expertise) showed satisfactory data fitting properties ( $\chi^2$  [142,  $n = 282$ ] = 243.22,  $p < .001$ ; CFI = .962; TLI = .955; RMSEA = .050; SRMR = .055). Three alternative measurement models were also estimated: a single factor model (i.e., all items assumed to represent a single underlying construct;  $\chi^2$  [147,  $n = 282$ ] = 1246.66,  $p < .001$ ; CFI = .529; TLI = .452; RMSEA = .163; SRMR = .151); a three-factor model, in which flow and occupational expertise formed distinct factors while learning value of the job and organizational learning climate formed a single factor ( $\chi^2$  [141,  $n = 282$ ] = 325.41,  $p < .001$ ; CFI = .921; TLI = .904; RMSEA = .068; SRMR = .081); and a three-factor model in which learning value and organizational learning climate formed distinct factors while flow and occupational expertise formed a single factor ( $\chi^2$  [135,  $n = 282$ ] = 255.44,  $p < .001$ ; CFI = .948; TLI = .935; RMSEA = .056; SRMR = .088). These models were inferior to the four-factor model.

The structural models were created by adding the hypothesized paths into the measurement model. To test Hypothesis 1, a structural model that included the three latent factors of learning value of the job, learning climate, and occupational expertise was estimated. The model demonstrated satisfactory data fit ( $\chi^2$  [96,  $n = 282$ ] = 172.16,  $p < .001$ ; CFI = .961; TLI = .952; RMSEA = .053; SRMR = .052). Both paths towards occupational expertise, from learning value of the present job ( $\beta = .27$ ,  $z = .3.31$ ,  $p < .01$ ) and from organizational learning climate ( $\beta = .18$ ,  $z = .2.37$ ,  $p < .05$ ) were significant, lending support to H1a and H1b.

To test Hypotheses 2 and 3 flow was added to the structural model. The new model fitted the data reasonably well with only SRMR slightly above the recommended cut-off value ( $\chi^2$  [177,  $n = 282$ ] = 328.31,  $p < .001$ ; CFI = .945; TLI = .935; RMSEA = .055; SRMR = .086). The path from the learning value of the present job towards flow was positive and significant ( $\beta = .23$ ,  $z = 2.37$ ,  $p < .01$ ), which lent support to H2a. By contrast, the path from organizational learning climate towards flow was not significant ( $\beta = .14$ ,  $z = 1.59$ ,  $ns$ ); therefore, H2b was not supported. The path from flow towards occupational expertise was significant ( $\beta = .13$ ,  $z = 1.87$ ,  $p < .05$ ), lending support to Hypothesis 3.

Hypothesis 4 postulated a mediating role for flow in the relationship of learning value and learning climate with occupational expertise. However, the non-significant relationship of learning climate with flow, as already seen in the testing of H2b, indicated that only the first part of hypothesis 4 (H4a) was meaningful to test (Judd & Kenny, 1981). Calculations suggested that the indirect effect of learning value on professional expertise via flow was marginally significant ( $\beta_{\text{indirect}} = .025$ ,  $z = 1.50$ ,  $p < .07$ ). The direct effect was also significant ( $\beta_{\text{direct}} = .26$ ,  $z = 3.68$ ,  $p < .001$ ). Hence, H4a was marginally supported, the findings suggesting partial mediation. Utilization



of challenge. Its contribution lies in informing regarding antecedents of occupational expertise—a key quality nowadays for individuals, employers, and the economy. Further, there is still limited knowledge about the factors that cultivate occupational expertise. Flow at work is the product of the process of meeting challenges, while the development of personal expertise represents a constant challenge for most individuals. The model included two learning related variables, learning value of the job and organizational learning climate, as factors that nourish expertise. Despite the significance of learning in the contemporary work environment, there is still inadequate knowledge on its relationship with employee outcomes. Flow was treated as an intervening factor, both a cause and effect. Flow is a pleasurable state that also has motivating properties (Knight & Waples, 2017), hence, it is of strong present-day importance, too. Finally, an out-of-work factor, demands of personal or family life, was considered, because work life does not exist in a vacuum, but instead it is influenced by what happens outside work.

The results largely, albeit not fully, supported the theoretical arguments. First, the extent to which the job allows consolidation along with updating and expansion of existing skills and knowledge—that is, when it has high learning value—is connected with the achievement of the end challenge factor in our model, occupational expertise. Similarly, organizational environments that cultivate learning in terms of encouraging and allowing experimentation and personal development as well as knowledge sharing and circulation are also conducive to the development of occupational expertise. What we also found was that flow at work is enhanced by jobs with high learning value, meaning that jobs that provide opportunities for learning and evolution of skills and knowledge render employees absorbed in, engaged with, and driven by what they do.

What was also found was that the link of the job's learning value with flow becomes more pronounced when interference from family life is minimal, while a strong spillover from family to work life apparently acts as inhibitor to the nutrient effect of a job with strong learning value. Hence, the beneficial effects of jobs with strong learning value on flow may not be realized when family life and work life impose conflicting demands. In such cases, individuals apparently do not have the resources (such as time, attention, energy) to be fully immersed into their job.

## Implications for Practice

The implication for employers is that providing learning opportunities to employees within their work roles along with encouragement for experimentation and knowledge sharing is instrumental in meeting today's imperative of having a motivated and competent workforce. Apparently, jobs

with high learning value and environments that promote and encourage learning provide employees with the resources and motives to meet the challenge of establishing expertise and to grow at the personal and the professional level, making them happy and genuinely focused in what they do (Bakker, 2005, 2008). Apart from further enhancing the expertise of the workforce, flow at work may have other beneficial consequences (Luthans, Youssef-Morgan, & Avolio, 2015; Thoresen, Kaplan, Barsky, Warren, & de Chermont, 2003). For example, a positive emotional state at the individual level is likely to spill over at team or unit level, with collective increase in morale and motivation (e.g., Newman, Ucbasaran, Zhu, & Hirst, 2014), which in essence means amplification of benefits. It is important to keep in mind that to experience flow there must be a match between the resources and the demands of the job. Substantial discrepancy between the two leads either to burnout or to boredom. It is therefore important that there is a match between employees' personal and organizationally-supplied resources and requirements of the job.

Another implication for employers is that taking an interest by means of facilitating the family life of their employees can be of benefit in meeting the challenges associated with today's business environment. Though taking an active interest into the personal life of employees is a sensitive issue, organizations can still work their way into it by providing assistance to employees to deal with family or other out-of-work matters (e.g., providing counseling services or facilitating access to such services), or facilitating employees' family life (e.g., by helping employees to access day care facilities, offering flexible work schedules or patterns). Such support initiatives, especially when not legally required, can pay off by reducing the tension between family and work life (see Purohit, Simmers, Sullivan, & Baugh, 2015).

The implications for individuals, who may be the most interested parties, are twofold: First, jobs are instrumental in finding and meeting key challenges, such as absorbing work and developing professional expertise. Considering that the job itself, by means of its learning value, is a source of finding and meeting challenge, individuals can themselves take responsibility for enhancing the learning value of their job. They can add elements into their job by means of job crafting, a process via which employees themselves add to and alter tasks, scope, responsibilities, meaning, and variety for their own job (Dik et al., 2015; Wrzesniewski, Berg, & Dutton, 2010).

## Limitations and Future Directions

The study had a number of limitations. Though we presumed causal relationships, the cross-sectional design does not allow certainty on causal order regardless of the data-fitting properties of our model and however logically

and theoretically sound our argumentation may have been (e.g., Bozionelos, 2003). Future research will benefit from longitudinal or experimental designs.

In addition, though we did evaluate occupational expertise by using line managers' assessments, which is a strength of the study, there are still some issues with our measurement. For example, the learning-related factors were assessed by employees themselves, which may impose issues of common method variance. It has to be noted, however, that the relationships between the contextual factors and occupational expertise (that were measured from different sources) were stronger than the relationships of the contextual factors and flow that were all measured from the same source (employees themselves). These facts somewhat alleviate concerns over common method effects (Bozionelos, Bozionelos, Polychroniou, & Kostopoulos, 2014). Moreover, the learning factors were contextual but were measured at the same level as individual-level factors were measured. Future research will thus benefit from the utilization of multi-level designs.

The study was conducted with IT professionals (participants were mostly software developers). Within the IT profession, the requirements for concentration on the task at hand over long work hours are strong. Similarly, the pace of progress within IT makes it imperative for IT professionals to constantly update their skills and knowledge in order to maintain their professional expertise so as to be employable in a highly competitive job market. Within these types of environments, factors such as the learning qualities of the job and organizational encouragement for learning may play a more important role than in industries or occupations with slower pace of change. Future research might seek to replicate our findings in less learning intensive occupations and industries in order to explore whether occupation or industry serves as boundary condition on the generalizability.

Finally, in this study we considered the interaction between family and work in negative terms—family life was treated as a burden for the individual that depletes available resources. However, the spillover between the domains of family and life can also be positive (Greenhaus & Powell, 2006) and, in fact, the two, positive and negative spillover, can co-exist (Chen, Powell, & Cui, 2014; Greenhaus & Powell, 2006). Hence, though we considered only the effects of interference from family towards work, family-to-work enrichment may have also been in operation. From the reverse point of view, flow at work can be a source of enrichment for family life. That is, flow caused by a job with high learning value may create benefits for the personal life of the individual—for example, the positive mood and the energy gains resulting from the experience of flow may be transferred to the family domain (ten Brummelhuis & Bakker, 2012), which may create a feedback loop (Timms et al., 2015). In this respect meeting challenge can itself serve as a resource that by means of a gain spiral brings further challenge. Future



research, therefore, should look in more detail at the interaction between family and work, especially from the perspective of positive spillover.

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