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The collection addresses a number of key issues, including:

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- How flow can be measured in the workplace
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- The relationship between task features and flow opportunities at work

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current issues in work and organizational psychology
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Flow at Work

Edited by CLIVE FULLAGAR and ANTONELLA DELLE FAVE

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current issues in work and organizational psychology

# Flow at Work

## Measurement and Implications

**Edited by CLIVE FULLAGAR and ANTONELLA DELLE FAVE**

ROUTLEDGE

# FLOW AT WORK

Flow can be defined as the experience of being fully engaged with the task at hand, unburdened by outside concerns or worries. Flow is an enjoyable state of effortless attention, complete absorption, and focused energy. The pivotal role of flow in fostering good performance and high productivity has led psychologists to study the features and outcomes of this experience in the workplace, in order to ascertain the impact of flow on individual and organizational well-being, and to identify strategies to increase the workers' opportunities for flow in job tasks.

This ground-breaking new collection is the first book to provide a comprehensive understanding of flow in the workplace that includes a contribution from the founding father of flow research, Mihaly Csikszentmihalyi. On a conceptual level, this book clarifies the features and structure of flow experience, and provides research-based evidence of how flow can be measured in the workplace on an empirical level, as well as exploring how it impacts on motivation, productivity, and well-being. By virtue of its rigorous but also practical approach, the book represents a useful tool for both scientists and practitioners. The collection addresses a number of key issues, including:

- Core components of how the idea of flow differs from experience in the work context
- Organizational and task-related conditions fostering flow at work
- How flow can be measured in the workplace
- The organizational and personal implications of flow
- The relationship between task features and flow opportunities at work

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# FLOW AT WORK

## Measurement and Implications

*Edited by Clive Fullagar and Antonella Delle Fave*

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# CONTENTS

# PREFACE

The chapters in this book are examples of academic debates regarding flow and research that attempts to address some of these issues. There are many questions that still need to be addressed if flow is to find its way into the pantheon of variables that are at the center of the work experience. Nonetheless, we feel that this book constitutes a good start.

In Chapter 1, Clive Fullagar, Antonella Delle Fave, and Steve Van Krevelen outline the history, definition, and development of the construct of flow. We place the conceptualization of flow into the psychological context of the time, pointing out how flow shifted the focus of academic scrutiny away from trying to understand why we engage in activities toward an analysis of the actual experience of absorption. The chapter describes how academic research has applied the construct of flow to an understanding of intense and positive involvement in work. The chapter outlines congruent theoretical frameworks that broaden our understanding of flow in the workplace and identifies organizational and individual predictors and outcomes of the experience. We proceed to outline some questions that remain and need to be addressed if flow is to establish itself as a central construct in the literature on the psychology of work.

Chapter 2, by Anja Schiepe-Tiska and Stefan Engeser, addresses the issue of measuring flow. These authors start by discussing the many-faceted complexity of flow that raises the issue of whether flow should be measured as a multi- or unidimensional construct. Furthermore, there seems to be some confusion in distinguishing between the preconditions, components, and outcomes of the flow experience. The chapter considers the strengths and weaknesses of a variety of methodologies that have been used to assess flow, including declarative (interviews, surveys, and experience sampling methods) and nondeclarative (neural and psychophysiological) measures. The authors point out how these methodologies have produced evidence that both supports and refutes theoretical conceptualizations of flow. Specific examples

# 6

# THE CONSEQUENCES OF FLOW

*Susana Llorens and Marisa Salanova*

## Introduction

The concept of flow in organizational settings is receiving an increasing amount of attention from researchers, most of their studies being focused on modern organizations. One of the reasons for this growing interest is the driving force of positive psychology, which can be defined as the scientific study of optimal human functioning, the aim of which is to build positive qualities – that is, virtues and strengths (Seligman & Csikszentmihalyi, 2000, p. 5). Specifically in the work context, positive organizational psychology (POP) is conceptualized as the scientific study of the healthy and optimal functioning of persons and groups in the organizations, as well as the effective management of psychosocial well-being at work and the development of healthy organizations. Its objective is to describe, explain, and predict the optimal functioning in these contexts and to amplify and potentiate the psychosocial well-being and the quality of job and organizational life (Salanova, Martínez, & Llorens, 2005, 2014). This positive approach has yielded interesting findings about positive psychosocial emotions and experiences, such as flow, in work contexts (Bakker, 2005; Llorens, Salanova, & Rodríguez, 2013; Salanova, Bakker, & Llorens, 2006).

Previous research on flow at work has made it possible to identify different key aspects related to the concept, theoretical models, and measurement. Accordingly, research has identified: (1) the dimensionality of flow experiences at work; (2) the distinction between flow experiences and their prerequisites; and (3) the differences in the frequency of flow experience among occupations (see, e.g., Llorens et al., 2013).

In this chapter, we provide an overview of the main research that has investigated the organizational and individual consequences of flow at work. In particular, we will discuss the impact of flow on well-being, other personal and job resources, and job performance. We will also outline research that has investigated the relationship between flow and well-being and the contribution that flow at work can make to the emerging field of positive organizational behavior.



## What is flow at work?

### *About the concept of flow at work*

Traditionally, flow has been described as an experience occurring while performing any activity that makes people feel good and motivated because they are doing something worthwhile for its own sake. However, this concept has been improved so as to adapt it to other contexts, such as art, sports, daily activities, leisure, or study (e.g., Csikszentmihalyi, 2003; Csikszentmihalyi & LeFevre, 1989; Delle Fave & Bassi, 2000; Delle Fave & Massimini, 2005). Adapted to these contexts, flow "tends to occur when a person's skills are fully involved in overcoming a challenge that is just about manageable. Optimal experiences usually involve a fine balance between one's ability to act and the available opportunities for action" (Csikszentmihalyi, 1997, p. 30).

The application of the *concept* to work settings reveals that, of course, flow could be experienced there in a similar manner. In work settings, flow is conceptualized as an optimal experience that is characterized by three structural dimensions: enjoyment (i.e., the emotional component), absorption (i.e., the cognitive component), and intrinsic interest (i.e., the motivational component).

Focused on work, *enjoyment* refers to a positive judgment about (Bakker, 2008) the quality of working life (see also Veenhoven, 1984). The state of being fully concentrated and engrossed in one's work, whereby time passes quickly and one has difficulties detaching oneself from work, characterizes *absorption* (Ghani & Deshpande, 1994; Lutz & Guiry, 1994; Moneta & Csikszentmihalyi, 1996). *Intrinsic interest* refers to the need to perform a certain work-related activity with the aim of experiencing inherent pleasure and satisfaction in it (cf. Deci & Ryan, 1985; Moneta & Csikszentmihalyi, 1996; Trevino & Webster, 1992). Intrinsically motivated employees are continuously interested in the work they are involved in (Harackiewicz & Elliot, 1998), and they want to continue their work and are fascinated by the tasks they perform (Csikszentmihalyi, 1997) (for a recent review see Llorens et al., 2013).

A great deal of empirical research has found this three-dimensional *structure of flow at work*, which is characterized by enjoyment, absorption, and intrinsic interest, in different samples of workers, such as teachers (Bakker, 2005; Salanova et al., 2006), employees of small and medium-sized companies (Demerouti, 2006), and line managers (Nielsen & Cleal, 2010), as well as information and communication technology users (students and workers; Rodríguez, Schaufeli, Salanova, & Cifre, 2008). Despite this consistence, research has pointed to the existence of just two (enjoyment and absorption) rather than three dimensions of the flow experience at work (Ghani & Deshpande, 1994; Rodríguez, Cifre, Salanova, & Åborg, 2008; Skadberg & Kimmel, 2004). For example, multigroup confirmatory factor analyses

(MCFA) provided evidence that flow experience is composed of only two related but different dimensions – namely, enjoyment and absorption – in different work settings (tile workers and secondary school teachers, Llorens et al., 2013), tested by the WOLF Inventory (Bakker, 2001). The two-dimensional model fitted the data better than the three-dimensional one.

### *A model of flow at work*

If there is some mismatch as regards the dimensionality of flow in work contexts, another relevant question refers to the *conditions needed to promote* flow at work. Although originally there was some confusion about the experience of flow and its prerequisites (Csikszentmihalyi, 1975, 1990, 1997), researchers are now aware of the need to distinguish the flow experience itself from its prerequisites and its consequences (Bassi & Delle Fave, 2012b; Chen, Wigand, & Nilan, 1999; Guo & Poole, 2009; Kawabata & Mallett, 2011; Keller & Bless, 2008; Keller & Blomann, 2008; Mesurado, 2009; Pearce, Ainley, & Howard, 2005). Applied to work contexts, the *model of flow at work* emerges as an alternative allowing us to differentiate between the experience and the antecedents of flow at work (Llorens et al., 2013).

Based on the *flow channel model* (Csikszentmihalyi, 1975) and the *experience fluctuation model* (EFM) developed in previous studies (e.g., Csikszentmihalyi & Csikszentmihalyi, 1988; Delespaul, Reis, & de Vries, 2004; Delle Fave & Bassi, 2000; Delle Fave & Massimini, 2005; Eisenberger, Jones, Stinglhamber, Shanock, & Randall, 2005; Massimini, Csikszentmihalyi, & Carli, 1987), this model of flow in work settings assumes that employees would experience flow more frequently when their job demands are perceived as highly challenging, but they also believe that they have the skills to cope with the demands (Llorens et al., 2013). Specifically, the model of flow at work assumes that the flow experience at work is a subjective experience. The model replicates the EFM by identifying eight areas ("channels") which represent eight experiences (i.e., arousal, control, relaxation, boredom, apathy, worry, anxiety, and flow). Like in the EFM, in this model flow is characterized by the perception of high challenges and high skills in terms of intensity. In line with the previous models, in this model of flow at work, high levels of perceived skills and high levels of perceived challenges are necessary prerequisites to experience flow (Salanova et al., 2006). Thus workers who, regardless of their occupation, perceive a balance between high levels of challenge and skills in their jobs, experience flow more frequently than others who perceive different combinations between challenge and skills (for more details, see Llorens et al., 2013).

## The measurement of flow at work

The study of flow at work has an important tradition. Some studies have investigated flow at work by evaluating the intensity of antecedents and experiential components using the experience sampling method (ESM; Csikszentmihalyi & LeFevre, 1989; Delle Fave & Massimini, 2005) and the Flow Questionnaire



(Bassi & Delle Fave, 2012a). Another approach is based on single-administration retrospective instruments, which test frequency rather than intensity of flow and its prerequisites (see Bakker, 2001, 2008; Mäkikangas, Bakker, Aunola, & Demerouti, 2010; Salanova et al., 2006).

To this purpose, Bakker developed an instrument to assess the experience of flow at work, the so-called WOrk-reLated Flow inventory (WOLF; Bakker, 2001, 2008). This single-administration retrospective instrument allows for assessing the frequency of the flow experience over the last six months on a seven-point scale from 0 ("never") to 6 ("every day"). The sixteen items test the three dimensions of the flow experience at work, -– that is, enjoyment (four items), absorption (six items), and intrinsic interest (six items). Lately, a short form of WOLF was developed, with ten items referring to the dimensions of enjoyment (four items), and absorption (six items) (see Llorens et al., 2013).

## Consequences of flow at work

In addition to the experience, prerequisites, and measurement of flow at work, there is also empirical evidence regarding the consequences of flow at work. Although fewer studies were conducted on this aspect, in the following pages we outline the most significant consequences of flow at work, which we have classified into three main categories: well-being, resources, and job performance.

### *How does flow enhance well-being at work?*

Different research studies have highlighted the relevance of flow in the development of well-being at work. Generally speaking, results give evidence for the direct and positive impact of flow on subjective well-being "*by fostering the experience of happiness in the here and now*" from a hedonic perspective (Moneta, 2004, p. 116). We consistently found that flow is positively related to subjective well-being and positive emotions (Bloch, 2002), positive mood (Fullagar & Kelloway, 2009), active coping and commitment (Salanova, Martínez, Cifre, & Schaufeli, 2005), less burnout (Lavigne, Forest, & Crevier-Braud, 2012), task engagement (Ainley, Enger, & Kennedy, 2008), job satisfaction (Maeran & Cangiano, 2013), and high energy levels (Demerouti, Bakker, Sonnentag, & Fullagar, 2012).

Specifically, a phenomenological analysis of interviews carried out on a sample of thirty-six employees of a public organization highlighted that flow experiences are associated with a good quality of life in modern everyday existence (Bloch, 2002). Accordingly, flow "*appeared as pervasive states coloring the interviewees' world of action, feeling and thinking. These states were characterized by specific experience of reality, of self and of time*" (p. 120). In this context flow plays the role of a framework for the development of more positive and specific emotions and feelings, such as joy, ecstasy, excitement, happiness, and pride.

Similarly, in a longitudinal study aimed at investigating the experience of forty architecture students by means of ESM over a semester, hierarchical linear modeling

showed that flow is related to subjective well-being and positive mood (Fullagar & Kelloway, 2009). More specifically, students who experienced higher values of flow in terms of intensity reported being momentarily in a more positive mood in terms of hedonic well-being.

In another study conducted on 770 workers from different occupational sectors (education, production sectors), higher frequency of the dimensions of flow (higher perceived competence, absorption, and intrinsic satisfaction) was related to the perception of a more positive environment, psychosocial well-being, and reduced ill-being. More specifically, flow at work was positively related to the perception of more job resources at work (i.e., autonomy, feedback, and task variety) and psychosocial well-being in terms of active coping and organizational commitment, but negatively related to burnout (exhaustion and cynicism) and anxiety. Workers who experience flow at work more frequently therefore seem to perceive a better job context with more job resources and experience better well-being – that is, a greater frequency of active coping behaviors, more commitment to the organization, and lower levels of burnout and anxiety related to the task (Salanova, Martínez, Cifre, et al., 2005).

Flow has also been negatively related to burnout in two independent studies on Canadian workers (Lavigne et al., 2012). In Study 1, a cross-sectional design and path analysis were used with 113 young workers to show the mediating role of flow at work between harmonious passion and burnout, especially in the dimensions of inefficacy and cynicism. Results suggested that the more harmonious passion is reported at work, the higher frequency of flow is experienced. As a consequence, less burnout (i.e., cynicism and inefficacy) is observed. In the second longitudinal study with 325 participants working for the Quebec government, harmonious passion for work was positively related to flow experiences at work as reported six months later and after controlling for Time 1's flow experiences (in terms of concentration, control, and autotelic experience's intensity). Thus, flow experiences at work at Time 2 were negatively related to inefficacy, cynicism, and emotional exhaustion at work at Time 2. That is, the more flow is experienced in terms of intensity, the less burnout is found.

Applied to the learning context, a study with a preprofessional sample of secondary school students aged between fifteen and eighteen years showed that higher ratings of challenge and skill are positively related to another indicator of well-being: task engagement (Ainley et al., 2008). Results showed that flow groups experienced, as a consequence, more engagement and focusing throughout the task compared to the non-flow groups working on a short learning activity – that is, a writing task using an interactive computer program called "Between the Lines."

Satisfaction at work (as a measure of well-being) has also been claimed to be a consequence of flow at work. Maeran and Cangiano (2013) developed a model of flow where this psychological state was considered critical in redesigning interventions in the workplace in order to promote job satisfaction. Their results showed the strong impact of flow as a key predictor of job satisfaction.



Another diary study examined the moderating role of both recovery efforts at work (i.e., a process that repairs the negative effects of strain) and detachment from work in the relationship between flow experience at work and energy perceived when the work is finished (Demerouti et al., 2012). In a sample of eighty-three participants, multilevel analyses revealed the benefits of flow for (1) increasing the energy after work when employees failed to recover during work breaks, and (2) increasing the levels of vigor in the employees at the end of the day when they left the workplace. Generally speaking, flow is a positive experience that produces benefits for employees' well-being. The impact of flow is a key element for employees' levels of energy after work and at the end of the day when at home, particularly the dimensions of enjoyment and absorption (Demerouti et al., 2012).

To sum up, taking into account research about the positive effects of flow on well-being and following the 'broaden-and-build theory' (Fredrickson, 2001), we suggest, by analogy with positive emotions, that flow produces this positive effect since (1) it allows people to broaden their momentary thought–action repertories and build resilience (Fredrickson, 1998, 2001; Fredrickson & Branigan, 2005), and (2) in a similar way to positive emotions, flow could regulate negative emotions (Fredrickson, Mancuso, Branigan, & Tugade, 2000) and foster positive spirals of well-being (Fredrickson & Joiner, 2002).

### *Flow and other personal and job resources*

Further expanding the analogy with Fredrickson's broaden-and-build theory, flow states could generate more positive resources at work (i.e., personal and job resources) through different kinds of positive spirals, such as the emotional contagion of flow (Bakker, 2005), organizational climate and efficacy beliefs (Salanova et al., 2006), social support, opportunities for professional development, supervisory coaching (Mäkikangas et al., 2010), and finally flow prerequisites – that is, challenge and skills over time (Rodríguez, Salanova, Cifre, & Schaufeli, 2011).

In a similar line, a study on a sample of music teachers and their students (Bakker, 2005) provided evidence in favor of the emotional contagion of the flow experience. Specifically, a positive relationship between the frequency of music teachers' flow experiences and the frequency of flow among their students was detected. It seems that "this flow contagion occurs because of the automatic imitation of cheerful and happy teachers, but also the more conscious crossover of teachers' dedication to their work." Hence, one of the consequences of flow is that flow causes flow (Bakker, 2005, p. 38).

Furthermore, there is a large body of research that shows reciprocal effects between job and personal resources and flow, thereby suggesting the development of positive cycles or spirals. In fact, these studies offer evidence in favor of the notion that job resources and flow mutually influence each other: resources enhance flow, but flow also promotes job resources. The positive relationships of flow with organizational and personal resources at work emerged in a longitudinal study with secondary school teachers (Salanova et al., 2006). More specifically, results showed

a reciprocal influence between the flow experience and organizational resources (in terms of climate orientation indicators, such as social support, innovation, rules, and goals) and personal resources (i.e., efficacy beliefs) over time. That is, organizational and personal resources tested at the beginning of the academic year (Time 1) facilitated work-related flow at work eight months later, at the end of the academic year (Time 2). Findings also showed that the frequency of flow (i.e., frequency in absorption, enjoyment, and intrinsic work motivation) at work tested at Time 1 had a positive influence on personal and organizational resources at Time 2. In fact, this study showed that flow develops over time when personal and organizational resources are available, and also that the experience of flow in the present influences the gaining of organizational and personal resources in the future by generating a positive spiral over time.

Similarly, a longitudinal study conducted over three months on 335 employees from an employment agency based on latent growth curve and mixed model analyses showed that job resources (i.e., social support, opportunities for professional development, and supervisory coaching) were positively related to flow at work. Thus, these findings suggest that: (1) the frequency of job resources and flow are positively related to each other over time, and (2) their changes over time again provide evidence for mutual cycles of change (Mäkikangas et al., 2010).

These reciprocal relationships were also detected between flow and its prerequisites – that is, challenge and skills – over time. In a two-wave longitudinal study conducted among 258 secondary school teachers, results showed that the flow experience was a consequence and also an antecedent of perceived challenge and skills (Rodríguez et al., 2011). More specifically, the higher the frequency of prerequisites (perceived high challenge and skills) of flow at Time 1, the higher the frequency of flow over time, which in turn increases the frequency of the prerequisites (high challenge and skills) in a positive cycle.

## *Flow as a driver of performance*

The fact that flow plays a key role across life domains (for a review see Delle Fave, Massimini, & Bassi, 2011; Massimini & Delle Fave, 2000) and in the development of well-being and resources is clear, but there is also empirical evidence that flow could enhance positive results in terms of performance, such as organizational spontaneity (Eisenberger et al., 2005), in- and extra-role performance (Bakker, 2008), creative performance (MacDonald, Byrne, & Carlton, 2006; Yan, Davison, & Mo, 2013), service quality (Kuo & Ho, 2010), and group performance from a collective point of view (Admiraal, Huizenga, Akkerman, & Dam, 2011; Aubé, Brunelle, & Rousseau, 2014; Bakker, Oerlemans, Demerouti, Slot, & Ali, 2011).

However, some studies suggested that the association of flow with greater positive mood and higher performance specifically emerged among workers reporting a high need for achievement (Eisenberger et al., 2005). A study conducted among sales employees and sales support employees revealed that employees in the flow context (high values of both skills and challenges) experience greater positive mood



(e.g., the extent to which workers felt happy at work) and organizational spontaneity (e.g., the extent to which employees looked for ways to improve the effectiveness of their work) than other combinations of skill and challenge only when employees have a high need for achievement (i.e., achievement orientation, such as working to improve one's skills and desiring frequent feedback).

On the other hand, in a study of 1,346 employees distributed in seven samples from different occupational groups and companies, flow experience was related to job satisfaction, and to job performance in its two dimensions: in-role (i.e., formal work performance) as well as extra-role (i.e., behavior that exceeds normal task fulfillment by going the extra mile) performance. In this respect, it seems that happy employees who get "into the flow" at work are also more satisfied and perform better in their role and extra-role behaviors (Bakker, 2008).

Flow has also been connected to a specific type of performance, namely creative performance. Flow is an experience of an activity as being intrinsically rewarding, under which "individuals tend to be curious, cognitively flexible, willing to take risks, and persistent in the face of barriers – characteristics that should facilitate the development of new and potentially useful ideas" (Baera, Oldhama, & Cummings, 2003, p. 571). To evaluate these aspects, a study was carried out among forty-five university students who worked on a group composition task during three meetings (MacDonald et al., 2006). The completed compositions were recorded and rated for quality and creativity by the participants and by a group of twenty-four specialists in music education. Using an Experience Sampling Form (ESF; Csikszentmihalyi & Csikszentmihalyi, 1988) the results showed that as group flow increased, so did the rating for creativity given by the specialists. Also, specialists rated the compositions of those groups that experienced higher values of flow more positively than those provided by the groups who experienced lower values of flow.

Data collected from 232 users of Web 2.0 virtual communities were used to test a model where the flow experience (i.e., perceived enjoyment and attention focus) mediates the relationship between knowledge sharing behavior (i.e., knowledge seeking and knowledge contributing) and employee creativity at work (Yan et al., 2013). Findings showed that both types of knowledge behaviors can lead to a state of flow and can further result in creativity at work.

Group flow and group performance have also been studied, and the results are consistent with those obtained for individual contexts. In a study involving eighty-five teams of college students who participated in a project management simulation, flow predicted 12% of the variance in team performance, and this relationship was fully mediated by members' commitment to team goals (Aubé et al., 2014). Furthermore, the exchange of information among the members played a crucial role in increasing team performances. Specifically, the more team members communicated while doing their work, the stronger the relationship between flow and team performance.

In another study on collective measures, results from structural equation modeling in a two-wave longitudinal lab on 250 participants working in fifty-two groups showed that collective efficacy beliefs predict collective flow (tested in terms of

frequency) over time in a reciprocal relationship. These results highlighted the role of collective flow in increasing collective efficacy beliefs in a gain cycle over time (Salanova, Rodríguez, Schaufeli, & Cifre, 2014).

Another study, combining survey and experimental methods where participants played a paddleball game, gave evidence for the impact of collective flow. Results showed that social flow experiences were perceived as more enjoyable compared to solitary flow experiences. Specifically, participants who played in interdependent teams reported more joy in flow than individuals performing less interdependently or alone (Walker, 2010).

Finally, a positive relationship between team flow and team performance was detected among soccer teams (Bakker et al., 2011). Multilevel analyses revealed that environmental resources (autonomy, social support from the coach, and performance feedback) were positively related to flow, which in turn was positively related to the performance of each player in the team during the match. These findings suggest that certain characteristics of flow at the team level (in terms of transformation of time, clear goals, autotelic experience) appear when the match results in a draw or is won than when the match is lost. Furthermore, results showed that performance feedback and support from the coach predicted flow during the soccer game, which in turn was positively related to self- and coach-ratings of performance.

## Conclusions

The main aim of this chapter was to provide an overview of the research investigating the organizational and individual consequences of flow at work. Specifically, the chapter discussed the impact of flow on well-being, resources, and job performance. The relationship between flow and well-being and the contribution that flow at work can make to the emerging field of positive organizational behavior were also addressed. Throughout the chapter we have summarized the state of the art of the concept, models, and measurement of flow at work according to recent research in the field. There is empirical evidence in favor of the idea that investing organizational and job resources is the key to enhance flow at work and consequently to achieve higher well-being, more resources, and better performance. Different positive consequences of flow have been shown to be mainly oriented toward these three aspects.

The main conclusions of the chapter are the following: (1) the concept of flow as an optimal experience can be transposed in the work contexts, within the theoretical framework of positive psychology at work; (2) the model of flow at work, which assumes that flow is experienced when both high challenges and skills are perceived, constitutes a reliable way to differentiate between the experience and the antecedents of flow at work; (3) the WOLF inventory is one way to test flow at work where frequency rather than intensity of flow is tested to capture the essence of flow at work; (4) flow is positively related to subjective well-being and positive emotions, positive mood, active coping, commitment, task engagement, job satisfaction, energy levels, and the good life in modern everyday existence; (5) through positive cycles, spirals, or emotional contagion, the flow experience also enhances the perception of more positive (personal and job-related) resources at work; particularly, flow is positively related to organizational climate, task and social resources, efficacy beliefs, and also more flow (flow causes flow); (6) flow is also responsible for the development of performance in terms of organizational spontaneity, in- and extra-role performance, creative performance, service quality, and group performance, and (7) finally, recent research gives evidence in favor of the relevance of social (or collective) flow.



These are the main contributions of this chapter dealing with the consequences of flow in work settings. We plan to further expand our research, focusing on ways to promote job environments that allow employees to experience positive experiences such as flow. This positive experience will foster other positive consequences at work – that is, employees' well-being, better perceptions of job and personal resources in the work contexts, and better performance in a general way.

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# 7

# APPLICATIONS OF FLOW TO WORK

*Giovanni B. Moneta*

In the early 1970s, Mihaly Csikszentmihalyi interviewed surgeons, rock climbers, composers, dancers, chess players, and athletes, asking them to report their experience when they engaged in the most challenging phases of their preferred endeavors, and he reported the findings in the seminal book *Beyond Boredom and Anxiety* (1975/2000). The interviews produced a wealth of textual descriptions that, although coming from persons with different backgrounds and working in different domains, shared six main themes: (1) focused *concentration* on the present activity, with centering of attention on a narrow stimulus field (e.g., "When I start, I really do shut out the world"), (2) *merging of action and awareness* ("I am so involved in what I am doing . . . I don't see myself as separate from what I am doing"), (3) *loss of self-consciousness* (e.g., "I am less aware of myself and my problems", (4) *sense of control* over one's own actions (e.g., "I feel immensely strong"), (5) *unambiguous feedback* from the activity (e.g., "You don't feel you have all sorts of different kinds of demands, often conflicting, upon you"), and (6) *autotelic experience* – that is, the sense that the activity is an end in itself, and hence runs independently of external rewards (e.g., "The act of writing justifies poetry"). Csikszentmihalyi named *flow* the simultaneous enactment of these six themes, and set out to search for its origins and consequences. In the early 1990s, Csikszentmihalyi (1996) investigated through interviews the experiences that ninety-one outstanding individuals had prior to conceiving novel ideas and seeing them recognized by peers as innovations. Intense and recurrent flow at work emerged as the main theme underlying each innovation across the domains of science, art, and business.

In the past two decades, researchers in the fields of organizational psychology and management have increasingly focused on the occurrence of flow in the work context across a wide range of occupations and organizational contexts, including scientists (Quinn, 2005), medical doctors (Delle Fave & Massimini, 2003), software engineers (Debus, Sonnentag, Deutsch, & Nussbeck, 2014), and school teachers