

FLOW EXPERIENCE AND JOB CHARACTERISTICS: ANALYZING THE ROLE OF FLOW IN JOB SATISFACTION

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The construct called “flow,” proposed by Csikszentmihalyi (1975, 1990), represents a milestone in the field of positive psychology. The present study aimed to analyze the role of flow as a critical psychological state in work redesign interventions in order to enhance job satisfaction. Specifically, two hypotheses were tested: (1) to investigate the relationships between the core job characteristics identified by Hackman and Oldham (1975) as motivational potential and the notion of flow in the workplace; (2) to examine the impact of flow toward job satisfaction. A survey-based study was conducted to test the hypotheses. Findings revealed a relationship between flow and some of the core job characteristics; moreover, consistent with predictions, results suggested that flow is a strong predictor of job satisfaction. Overall, these findings have potential implications for broad strategies of work redesign; they also increase our understanding of job satisfaction’s determinants.

Key words: Flow; Experience; Job satisfaction; Job characteristics; Work redesign.

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INTRODUCTION

The flow is a psychological state of maximum optimism and satisfaction, experienced during an activity. It is equivalent to a “complete immersion in the task,” characterized by high involvement and control of the situation, focused attention, lack of boredom and anxiety, intrinsic motivation, altered perception of time and lack of self-judgmental observation (Csikszentmihalyi, 1990). To address the flow experience analysis it is necessary to refer to the study of subjective well-being that, in psychology, has led to the dawn of positive psychology (Seligman & Csikszentmihalyi, 2000). According to Gable and Haidt (2005), positive psychology is “the study of the conditions and processes that contribute to the flourishing or optimal functioning of people, groups and institutions” (p. 104).

Specifically, the development of this school of thought, which aims to investigate happiness, optimism, satisfaction in life and well-being, dates back to the late eighties in the United States. These aspects should be studied not only from the outside, like consequences of social, economic and political conditions, but also from the inside, starting with the personal resources owned by each individual. The *positive psychology* has brought about a real change of perspective by fostering and promoting interventions aimed at employing skills and resources of individuals, rather than reducing or offsetting their limitations.

Positive psychology¹ originated from two perspectives: the *Hedonic* (Kahneman, 1999), which explores the dimensions of pleasure, and the *Eudaimonic* (according to the Aristotelian concept of *Eudaimonia*), generally understood as what is useful to the individual, which enriches the personality prioritizing the analysis of factors promoting the development and realization of individual potential (Ryan & Deci, 2001; Waterman, 1993). The term *Eudaimonia* cannot be considered as a mere synonym of “happiness,” its semantic field is much broader since it involves a process of interaction and mutual influence between individual and collective well-being: individual happiness is achieved in the social sphere. A further explanation is suggested by Seligman and Csikszentmihalyi (2000): “the field of positive psychology at the subjective level is about valued subjective experiences: well-being, contentment, and satisfaction (in the past), hope and optimism (for the future), and flow and happiness (in the present)” (p. 5).

INTRODUCING THE FLOW EXPERIENCE

The concept of flow was proposed by Csikszentmihalyi (1975); according to him, although mankind currently has at its disposal commodities, luxuries and opportunities of which no one, until a few decades ago, could have imagined the existence, we are not happier than the past generations. Csikszentmihalyi, in fact, does not believe that happiness comes from luck or external events, but rather that it is closely tied to our motivations, to the interpretation that each of us gives to events and experiences that characterize our lives. The way we interpret events certainly depends on cultural and social factors but, also and above all, on the meaning we give to our own individual experiences.

As a matter of fact, through the study of behavior in the developmental age, Csikszentmihalyi had found out how people build their own “cultural kit” by means of experience and by learning from the outside world. Thus, information is not passively assimilated from the environment, but rather selected and sorted out according to the standard of “quality experience”; afterwards people will tend to replicate the experience able to produce a positive psychological state avoiding, however, what may lead to stress, anxiety or boredom. These considerations relate to flow because the very people that can better determine the quality of their lives are those who maintain control of their own experiences and tend to face challenges, though not beyond their capabilities (Figure 1). If the requirements to successfully fulfil the activity were too high compared to one’s personal skills, the state experienced would be anxiety. On the contrary, if the task was too easy to complete, the person would be more likely to experience boredom. Instead, apathy is most likely when both the level of challenge and personal skills are low.

As stated by Csikszentmihalyi (1990), this is the best way to approach the state of happiness. The author considers the flow as a mental state that occurs when a person is fully immersed in an activity, characterized by total involvement, focus on the goal, intrinsic motivation, optimism and gratification while performing the task. The experience felt when in the flow state is described as an “optimal experience,” wherein the performance is at its peak and the state of mind is positive. When challenges and skills are both simultaneously above the average, the optimal experience comes out. The flow has gradually spread over several areas of applied psychology: starting from sport (in which is better known as the state of “trance”), and then extended to other contexts such as music (Bakker, 2005), computer interaction (Ghani & Deshpande, 1994),

work (Csikszentmihalyi & LeFevre, 1989; Demerouti, 2006; Salanova, Bakker, & Llorens, 2006) and coaching (Wesson & Boniwell, 2007).

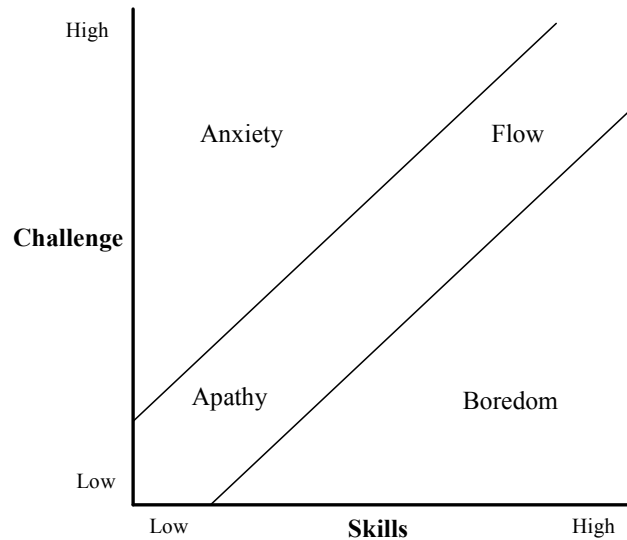


FIGURE 1
A graph showing the required challenge-skill balance to achieve flow
(Csikszentmihalyi, 1990, p. 74).

The dominant feature of the early flow models was the emphasis on the balance (trade-off) between the perceived challenge of the task at hand and the personal abilities and skills to cope with the situation (Csikszentmihalyi, 1975). More recently, the same author (Csikszentmihalyi, 1990, 1993) has operationalized the flow experience into the following nine components.

1. *Challenge — Skill balance*: the task should be achievable and realistic, that is fitting one's own capabilities and skills. Tasks that generate the flow state are positive and pleasing, since they provide an optimal level of new information, which is not in excess. The flow experience differs from boredom (wherein a person's skills far outweigh those requested to carry out the task), anxiety (wherein personal resources are inadequate to face the challenge) and apathy (in which both personal skills and those requested to complete the task are low).

2. *Merging of action and awareness*: concentration and commitment peak. The person is so absorbed in the task that it appears to be performed automatically, without any intrusive thoughts.

3. *Clarity of goals*: the expectations and the way of performing the task are clear. The person is aware of how to carry out the activity. In the optimal experience we have command of our actions, thereby controlling external events. For this to happen it is necessary to have clearly defined the goals.

4. *Unambiguous feedback*: the outcome of the action should be detectable immediately and plainly by the person. The feedback is the signal that enables us to know whether we are achieving (or have achieved) or not our goal and if the situation is under our control. In order to reach the flow dimension/experience the feedback should be immediate and unequivocal.

5. *Concentration on the task at hand*: the flow experience is featured by a high degree of concentration in a limited field of attention (the person does not think about past or future, but rather is focused exclusively on the present condition). His/her attention and energies are employed solely to carry out the task.

6. *Sense of control*: the perception of having everything under control and managing the situation. When people are in flow they feel everything is under their control but as soon as their attention is shifted to control maintenance, they tend to lose this state.

7. *Loss of self-consciousness*: people are so committed in performing the activity not to be concerned about their ego. The self and the activity are fused; when in flow, the person is able to set aside any other thoughts and concerns, focusing uniquely on the task at hand.

8. *Transformation of time*: the perception of time is altered. There is no awareness of its passing, hours feel like minutes.

9. *Autotelic experience*: from the Greek *auto telos* (self-goal). The activity gives an intrinsic pleasure: the experience is worth doing for its own sake. The flow experience is so charming to induce people to seek it whatever the cost. The need for action arises from the intrinsic pleasure, experienced just whilst performing that particular activity. The flow represents a motivational state (optimal) that illustrates what occurs when motivation works at its best.

JOB CHARACTERISTICS AND FLOW

Bakker (2005) defines flow in the workplace as a short lasting “peak experience,” characterized by involvement, pleasure of working and intrinsic work motivation. These states of mind can be considered as cornerstones of the flow experience. In actual fact, involvement refers to the total concentration and immersion in the activity carried out.

The pleasure ensuing from working indicates a very positive judgement about the quality of one’s working life; intrinsic motivation is instead referred to as the need to carry out tasks that produce pleasure and satisfaction to the person during their execution. In order to experience a flow state it is essential for the individual to be fully engaged in the fulfilment of the task, which should be at the same time enjoyable and meaningful for the person. As previously mentioned, Csikszentmihalyi and LeFevre (1989) found how the flow may occur more often in the workplace rather than in leisure time. The authors have tried to give an explanation for this, indicating some possible situational factors (facilitators) that might be related to the advent of flow experiences, such as clarity of goals, direct feedback, control and balance between the capabilities required by the job and those in possession of the person.

It is interesting to note that some of these factors have also been recognized in Hackman and Oldham’s (1975) Job Characteristics Model (JCM): skill variety, task identity, task significance, autonomy and feedback. Behson, Eddy and Lorenzet (2000) found that these characteristics (sometimes with the mediation of the critical psychological states) are valid predictors of motivation and job satisfaction. These five features claim to play a pivotal role in the psychological states that influence motivations and achievements at work. According to the JCM, these dimensions are able to influence three critical psychological states: work significance, work responsibility and knowledge of achieved results.

Within this theoretical framework, the flow could be considered as a critical psychological state capable of determining the relationship between certain job characteristics and well-being among individuals engaged in performing work activities. Actually, although motivation and satisfaction are by far broader constructs than flow, it may be legitimate to analyze more deeply the components related to the flow experience with the job characteristics proposed by Hackman and Oldham (1975, 1980).

Undoubtedly, there are several points in common between these two models: both concern job resources, which are aspects of the work required to achieve the organizational goals, personal growth, and to improve (or reduce) the task demand (Demerouti, 2006). Job resources determine the degree to which people work and express themselves physically, cognitively and emotionally in their work; furthermore, they have been found to be related to participation, organizational commitment and reduced turnover at work.

The comparison between the flow facilitators proposed by Csikszentmihalyi (1999) and the job characteristics model of Hackman and Oldham (1975) emphasizes the contribution of flow concept in occupational psychology. According to Csikszentmihalyi (1997), the flow tends to occur when a person performs a task characterized by clear objectives so that the person knows exactly how to act, without having to ask others for more tips and information regarding what is to be done. If workers are fully aware of how they have to perform the assigned tasks, they are more likely to fall into a flow state. Along similar lines, Hackman and Oldham (1975) argued that a job is characterized by a high task identity when tasks in it are readily identifiable.

Csikszentmihalyi (1997), likewise those psychologists who consider the feedback and information concerning the goodness of the performance as a central and indispensable feature of the work, holds the view that the presence of feedback is an essential condition for the flow experience occurrence. This feedback can be supplied either by supervisors or by colleagues, but can also derive directly from the work itself.

Both Hackman and Oldham (1975) and Csikszentmihalyi (1997) consider sense of control and autonomy to be items at least important, if not essential, in promoting the flow and, more broadly, motivation. Workers autonomy in planning their activities and in determining the work setting is, actually, able to increase motivation in the workplace (Nielsen & Cleal, 2010).

Furthermore, a substantial balance between the personal skills and those required by the task usually characterizes the optimal experience. The difficulty of the tasks required to workers should be neither too high (it may be frustrating) nor too low (activities would become boring). The ideal task to engage in usually occurs when most of the skills owned by the subject are employed in performing the task. Notwithstanding, it should be taken into account how the perception of balance between these components remains fairly subjective and, therefore, less useful in job design interventions. The skill variety represents the diverse array of work activities that require different skills. This dimension, in fact, focuses more on the task itself, rather than on the perception of their abilities. Finally, according to Csikszentmihalyi (1990), best experiences are always implemented "when a person's body or mind is stretched to its limits in a voluntary effort to accomplish something difficult and worthwhile. Optimal experience is thus something we make happen" (p. 3). In line with this, Hackman and Oldham (1980) consider the degree to which work affects the lives or work of others (task significance) as a motivating working feature. At the end of these considerations, it is thus reasonable, at least from a purely theoretical point of

view, to assume some kind of links between job characteristics and flow experiences, and, potentially, a possible influence of the latter on job satisfaction.

JOB SATISFACTION

A large body of research has investigated the extent to which a person is satisfied with his or her job can influence performance at work (Brown & Peterson, 1993; Christen, Iyer, & Soberman, 2006). We commonly refer to job satisfaction as “the pleasurable emotional state resulting from the perception of one’s job fulfilling or allowing the fulfilment of one’s important job values” (Locke, 1976, p. 1342). Job satisfaction was found associated with several positive organizational outcomes, such as citizenship behaviour and organizational commitment (Organ & Ryan, 1995; Williams & Anderson, 1991); furthermore, it reduces absenteeism and turnover amongst employees at work (Kinjerski & Skrypnik, 2008; Randsley de Maoura, Abrams, Retter, Gunnarsdottir, & Ando, 2009; Zatzick & Iverson 2011). Unsurprisingly, people’s satisfaction for their job impacts also on their life satisfaction (Iverson & Maguire, 2000).

Over the past few decades, researchers have endeavoured to understand and investigate the factors that determine and improve job satisfaction. Savery (1989) proposed that intrinsically motivating working conditions (e.g., interesting and challenging work, feeling of achievement) can lead to higher levels of job satisfaction compared to external factors (e.g., remuneration, benefits, rewards). In this regard, the JCM (Hackman & Oldham, 1980, as cited in Judge, Bono, & Locke, 2000) identified job satisfaction as one of the positive organizational outcomes yielded by intrinsically enriched jobs. According to this model, specific job characteristics (e.g., task significance, task identity and skill variety) cause the occurrence of certain critical psychological states such as feelings of responsibility and meaningfulness states that, in turn, yield a greater satisfaction for the job. Past research has indicated that motivation can also be a crucial factor in determining job satisfaction. For instance, intrinsic satisfaction for the job is associated with psychological rewards like the ability to use one’s skills, the sense of challenge and achievement (Mullins, 1996).

THE PRESENT STUDY

Past research attempted to understand the factors that determine people’s satisfaction with their job (e.g., Blegen, 1993; Brown & Peterson, 1993; Spector, 1997). It has been suggested that intrinsic features of the activities performed at work should be better at predicting job satisfaction compared to extrinsic aspects such as remuneration and benefits (Mottaz, 1985). The principal purpose of the present study was to investigate the relationships between the flow experience as described by Csikszentmihalyi (1975) and job satisfaction. In this study, the flow experience was considered as a transitory state, generated mainly by situational characteristics (in line with the results achieved by Fullagar & Kelloway, 2009), but does not exclude the dispositional aspects able to determine the occurrence of such experiences. Specifically, we aimed to understand the importance of the flow experience in the workplace so as to see the kind of contribution that it could give to work redesign interventions. The well-established Job Characteris-

tics Model (Hackman & Oldham, 1975) has been used as a theoretical framework to assess the validity of flow as a critical psychological state capable of influencing job satisfaction.

In an attempt to investigate the impact of flow on job satisfaction, we hypothesized that specific core job characteristics, as described in Hackman and Oldham's (1975, 1976, 1980) model would be positively related to the occurrence of flow experiences in the workplace. Furthermore, in light of the previous considerations, it seems reasonable to hypothesize that the flow experience, as an intrinsically motivating feature of engaging activities, could be positively associated to important organizational outcomes such as job satisfaction.

METHOD

Participants

One hundred and five workers (62 females) in the province of Padua (Italy) completed a survey measuring several aspects of their current job. Participants' age ranged between 21 and 64 years ($M = 39.2$, $SD = 12$). The self-reported questionnaire was administered individually and divided into two different sections: the former measuring the flow experience and the latter assessing job characteristics and job satisfaction. Demographic information was also requested for control purposes. Fifty five percent of respondents held a bachelor's degree, followed by 36.5% of participants who achieved a high school diploma. Most participants had a permanent employment contract (76.3%) and worked full time (82.7%). Over 60% of respondents had clerical jobs, followed by factory workers (20%), whereas executives, managers and entrepreneurs stood at just under 9%, likewise freelancers.

Measures

Flow. The construct of flow was measured through the administration of the Dispositional Flow Scale 2 (DFS-2): an instrument built to provide a dispositional assessment of the flow experience. This scale is composed of 36 items on a five-point Likert scale, four items for each of the nine subdimensions of flow as identified by Csikszentmihalyi (1990, 1993). This scale was administered to measure people's general tendency and frequency to experience flow in the workplace. Specifically, participants were asked to indicate the frequency with which they experienced certain states on a scale from 1, *never*, to 5, *always* (e.g., clarity of goals: "I know clearly what I am doing"; unambiguous feedback: "I am aware of how well I am performing"; sense of control: "I feel a total control of what I am doing"; concentration on the task at hand: "my attention is focused solely on what I am doing"). This instrument may be understood both as a dispositional measure, useful to indicate any interindividual differences in the frequency with which the flow is experienced, and as a measure of the frequency with which the flow is experienced, assuming that it is a construct of state, analyzing at the same time the situational aspects related to it. Besides, a composite index of flow was created by averaging scores across the nine subdimensions.

Perceived job characteristics and critical psychological states. Job characteristics were investigated by using the Italian adaptation of the Job Diagnostic Survey (JDS; Cilia, Maeran, & Martino, 1995; Maeran & Martino, 1996). Sections 2, 3 and 4 were administered both on account of their better suitability for research purposes and to keep under control the length of the questionnaire so as to prevent response set phenomenon owing to the survey method. Within these sections, two items measured each feature. For instance, variety of skills: “the job requires you to use a wide array of skills” and “the work is pretty simple and repetitive” (reversed score), from 1, *strongly disagree*, to 7, *strongly agree*. Additionally, this scale allows to assess the three critical psychological states (meaningfulness of the work, responsibility for the work, knowledge of results) as described in Hackman and Oldham’s (1980) JCM (e.g., meaningfulness of the work: “the work I do on this job is very meaningful to me”; responsibility for the work: “whether or not this job gets done right is clearly my responsibility”). Participants rated the extent to which these statements described their job on a scale from 1, *very inaccurate*, to 7, *very accurate*.

General satisfaction. Participants’ satisfaction for their job was measured with three items from the JDS. These three items were: “generally speaking, I am very satisfied with my job,” “I am generally satisfied with the kind of work I do in this job,” and “I frequently think of quitting this job” (reversed score). Responses to Hackman and Oldham’s (1980) JDS were evaluated on a scale ranging from 1, *strongly disagree*, to 7, *strongly agree*. In order to obtain a further measure of overall satisfaction, a continuum from 1 (*not at all satisfied with my job*) to 10 (*completely satisfied with my job*) was also included in the questionnaire.

RESULTS

The measure of general satisfaction for one’s job was found to be reliable (three items; $\alpha = .83$). Concerning the flow experience, alpha coefficients of the DFS-2 can be seen in Table 1.

TABLE 1
Alpha coefficients for the DFS-2 dimensions

Dimension	Cronbach’s alpha
Challenge — skill balance	.60
Merging of action and awareness	.64
Clear goals	.79
Unambiguous feedback	.65
Concentration on the task at hand	.86
Sense of control	.74
Loss of self-consciousness	.90
Transformation of time	.75
Autotelic experience	.89

Note. $N = 105$, each dimension was constituted by four items.

Job characteristics and flow. In order to test whether certain job characteristics have an effect over the frequency of flow experiences in the workplace, a multiple regression was run

utilizing the five core job characteristics (skill variety, task identity, task significance, autonomy and feedback from the job) as predictors of flow. Overall, the model showed a relatively poor fit, explaining only 18.4% ($R^2_{adj} = 14.3\%$) of the variance in flow scores. However, the overall relationship was significant, $F(5, 99) = 4.478, p = .001$. Specifically, with all the other variables held constant, task significance and feedback from the job were positively related to flow. A summary of the regression results is shown in Table 2. Further analyses using multiple regression were conducted to investigate the impact of the job characteristics on each of the nine flow dimensions. Particularly, task significance was found positively associated with challenge-skill balance, $t(5, 99) = 2.467, p < .02$, concentration on the task at hand, $t(5, 99) = 2.750, p < .008$, sense of control, $t(5, 99) = 2.346, p < .03$, and autotelic experience, $t(5, 99) = 4.160, p < .001$. Besides, feedback from the job was positively related to sense of control, $t(5, 99) = 2.113, p < .04$, and task identity with autotelic experience, $t(5, 99) = 2.022, p < .05$. Overall, these results indicate some associations between the five core job characteristics and the flow experience. In particular, task significance was the feature most frequently predicting flow in the workplace.

TABLE 2
 Multiple regression of the five job characteristics predicting flow

	<i>B</i>	<i>SE(B)</i>	β	<i>t</i>
Skill variety	-.004	0.243	-.011	-0.103
Task identity	.041	0.035	.132	1.396
Task significance	.086	0.030	.283	2.842**
Autonomy	.020	0.031	.071	0.661
Feedback from the job	.068	0.034	.205	1.999*

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

Critical psychological states, flow and job satisfaction. To address the main aim of the study, multiple regression analyses were computed to investigate the extent to which the three critical psychological states and flow experiences had an impact over participants' reported levels of general satisfaction for their job. A two-step hierarchical regression analysis with general satisfaction as dependent variable was computed: in the first block, the three critical states were entered (meaningfulness of the work, responsibility for the work and knowledge of results), whereas in the second block the averaged flow index was entered. The model showed a reasonable fit to data, explaining 50% of the variance in levels of general job satisfaction ($R^2_{adj} = 48.5\%$). The overall relationship between the three critical psychological states and general satisfaction was found significant, consistent with Hackman and Oldham's (1975) model. However, the addition of flow in the second block provided a significant improvement in the predictive power of the model, $\Delta R^2 = 6.5, \Delta F(1, 100) = 14.932, p < .001$, and so is certainly worth adding. Interestingly, the flow index proved to be the best predictor of general satisfaction, $t(4, 100) = 3.864, p < .001$. With regards to individual predictors, each regressor was significantly associated to general satisfaction, apart from knowledge of results, which turned out to be only marginally significant ($p < .10$). Findings relative to the models are reported in Table 3.

TABLE 3
 Hierarchical multiple regression of the three critical psychological states
 and flow experience predicting job satisfaction

	<i>B</i>	<i>B</i>	<i>R</i> ²	ΔR^2
Step 1				
Meaningfulness of the work	0.361	0.338**		
Responsibility for the work	0.627	0.457***		
Knowledge of results	-0.116	-0.086	.50***	
Step 2				
Meaningfulness of the work	0.234	0.219*		
Responsibility for the work	0.585	0.426***		
Knowledge of results	-0.187	-0.139		
Flow experience	1.057	0.307***	.057***	.07***

* $p < .05$. ** $p < .01$. *** $p < .001$.

A similar hierarchical regression was conducted on job satisfaction by adding the nine flow subdimensions in the second block instead of the averaged flow index. Similarly to the previous analysis, the addition of the nine flow components significantly improved the model, $\Delta R^2 = 12.5$, $\Delta F(9, 92) = 3.422$, $p = .001$. Specifically, only autotelic experience was found significantly associated to general job satisfaction, $t(92, 104) = 4.247$, $p < .001$. Correlations (Table 4) between the three critical psychological states and flow were also examined to make sure they measured different constructs. As can be seen, flow is significantly associated with each of the critical states of the JCM; nevertheless, the shared variance with these components does not exceed 30%, thus suggesting, consistently with our predictions, that flow is a distinct and unique psychological state. To summarize, our results seem to be consistent with our main hypothesis, namely, the extent to which people experience flow in the workplace has an impact on their job satisfaction.

TABLE 4
 Correlations between critical psychological states and flow

	1	2	3	4
1. Meaningfulness of the work	–	.703**	.405**	.529**
2. Responsibility for the work		–	.309**	.427**
3. Knowledge of results			–	.361**
4. Flow experience				–

** $p < .01$.

DISCUSSION

The present study focused on flow as a multidimensional construct and on its importance in positive occupational psychology. Particularly, we sought to determine the validity of flow as a

critical psychological state able to mediate the relationship between the five core job characteristics and individuals' job satisfaction. The purpose of this study was indeed to shed light on the importance of this optimal motivational state and to verify its possible contribution toward interventions of work redesign.

As hypothesized, we found that certain job characteristics, such as task significance and feedback from the job, can predict the likelihood with which people experience flow in the work place, although only to a limited extent. As a matter of fact, this study seems to be in line with past research (Demerouti, 2006; Nielsen & Cleal, 2010), suggesting that designing complex and enriched jobs does not necessarily entail a greater occurrence of flow in the workplace. A possible reason for this might be sought in the naturalness and spontaneity of this transitory state, which could be determined by a multitude of variables at the same time. Notwithstanding, it seems that the perception that one's job has a positive impact on other people can lead workers to experience flow more frequently. Along similar lines, it appears that having the opportunity to achieve feedback on one's performance is an intrinsic motivating factor for many people in the workplace.

Moreover, in line with our hypothesis, we found flow to predict people's satisfaction for their job. Interestingly enough, our findings suggest that the flow experience could determine participants' job satisfaction to a greater degree compared with the critical psychological states, which were suggested by Hackman and Oldham (1975, 1976, 1980) as the best predictors of satisfaction in the workplace (i.e., work significance and work responsibility).

One of the main limitations of the present study is the use of cross-sectional data. In fact, there seems to be a heated debate over whether or not using multivariate analyses to test casual models with purely cross-sectional data (e.g., Reichenheim & Coutinho, 2010). Nevertheless, to explore such an extremely natural and transitory state like the flow experience, the use of experimental methods should probably be unfeasible both practically and economically. Another potential limit is that, due to the limited size of the sample, no factor analyses could be conducted to test the structural validity of measures. However, it should be noted that only well-established scales, which had already been validated (Kawabata, Mallett, & Jackson, 2008; Taber & Taylor, 1990), were used in this investigation.

Indeed, the present study represents one of the earliest attempts to demonstrate the importance of the flow experience in determining employees' satisfaction for their job. Furthermore, it explores the extent to which work redesign interventions can favor the occurrence of flow at work. Accordingly, we agree with some strategies that Csikszentmihalyi (2003) offers to human resources managers to stimulate the onset of the flow experiences in organizations, such as: the establishment of goals, which should be communicated effectively; the creation of a feedback system to achieve these goals (from a qualitative and quantitative point of view); relating people's skills (experience, knowledge, skills, attitudes) with their role; relying on their power factors and marginalizing weaknesses; predicting and stimulating spaces for creative expression; using work environments so as to stimulate concentration and creativity, avoiding, at the same time, futile distractions; finding a way to enrich the work with values and significance, selecting and rewarding people who find satisfaction in their job.

Nevertheless, consistently with our findings, we regard flow as an extremely subjective experience. As a consequence, the impact that work redesign interventions may have on it might be limited. Rather, we believe that the flow experience may integrate Hackman and Oldham's

(1975, 1976, 1980) Job Characteristics Model by taking into account the subjectivity of work and the way its features are perceived. Thus, not only can intrinsic job satisfaction be determined by perceived job characteristics, such as autonomy, task variety, and so forth, but it could also be affected by the subjectivity of the experience and the social context in which it occurs. As a matter of fact, it should be taken into consideration that people often work in groups. In so doing, the flow experience, apart from being a solitary experience, can also be something experienced with colleagues (Walker, 2010). Accordingly, certain social conditions might render the activity more or less enjoyable for workers and, eventually, alter the very perception of flow in the workplace. In this regard, future research could be conducted in order to examine the impact that group dynamics have on the occurrence of flow, particularly in the workplace.

NOTE

1. This approach, however, has its roots in the works of Allport (1954) concerning the positive features in each individual, in Maslow's (1968) research about people's health, and in the most recent studies of Cowen and Wyman (1998) regarding resilience in children and adolescents.

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