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RESEARCH PAPER

The Role of Workers' Motivational Profiles in Affective and Organizational Factors

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Abstract We used latent profile analyses to understand how the different forms of motivation proposed by self-determination theory combine with each other and how they relate to some organizational factors (i.e., perceived organizational support and procedural justice) and well-and ill-being indicators (i.e., work engagement, quality of working life, work satisfaction, job anxiety, and burnout). The research draws upon quantitative data collected by means of a questionnaire that was administered to 328 employees (Study 1) and 521 employees (Study 2) from various French companies. Results revealed that workers characterized by the two most autonomous motivational profiles displayed higher levels of work engagement, quality of working life, and work satisfaction, and lower levels of burnout and job anxiety than those with low levels of autonomous motivation, and introjected and external regulations (Low AU/INR/EXR profile), and those with moderate levels of autonomous motivation, moderate to high levels of introjected regulation, and moderate levels of external regulation (Mod AU/INR/EXR profile in Study 1 and Mod AU–High INR–Mod EXR profile in Study 2). Of interest is that the High AU–Low INR/EXR and High AU/INR–Low EXR profiles did not differ on well- and ill-being. In addition, perceived organizational support and procedural justice were associated with a greater probability of belonging to the High AU–Low INR/EXR and High AU/INR–Low EXR profiles, taking the Low AU/INR/EXR profile as a referent. The present research contributes towards a better understanding of the links between workers' motivational profiles and affective and organizational factors.

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1 Introduction

Self-determination theory (Deci and Ryan 2000, 2008) is an important theory within the broader field of positive psychology (Seligman and Csikszentmihalyi 2000). Indeed, this motivational theory focuses on optimal motivation to explain various positive attitudes and behaviors such as well-being and performance. Self-determination theory also goes beyond most positive psychology theories, however, by considering different forms of motivation that undermine optimal functioning (Sheldon and Ryan 2011). Specifically, in a qualitative perspective, self-determination theory distinguishes different types of motivation according to the degree to which workers experience the reasons for putting effort in their work as autonomous (i.e., intrinsic motivation and identified regulation) or controlled (i.e., introjected and external regulations). Historically, most studies have looked at these different types of motivation individually. More recently, however, research has started to assess how the different types of motivation may best combine in certain types of profile, leading to various outcomes. However, these investigations (e.g., Graves et al. 2015; Moran et al. 2012; Van den Broeck et al. 2013) lead to divergent conclusions regarding the importance of autonomous and controlled motivation. For instance, contrary to theoretical predictions (Deci and Ryan 2000), Van den Broeck et al. (2013) found that a motivational profile with high levels of both autonomous motivation and controlled motivation and a motivational profile with high levels of autonomous motivation and low levels of controlled motivation did not differ from one another on well-being. In addition, little research has been conducted in the realm of work to identify the organizational factors that contribute to the development of adaptive motivational profiles. We focus on these two issues in the present paper. More specifically, we first wanted to uncover workers' motivational profiles in both studies and then to examine how these profiles relate to work engagement, quality of working life (Studies 1 and 2), work satisfaction, job anxiety, and burnout (Study 2). Moreover, we also sought to test the role of two organizational factors that may contribute to the development of motivational profiles, namely perceived organizational support (Studies 1 and 2) and procedural justice (Study 2).

2 Self-Determination Theory

Self-determination theory (Deci and Ryan 2000) posits a distinction between different forms of motivation. First, intrinsic motivation involves engaging freely in an activity for its inherent satisfaction, that is, because it is interesting and enjoyable in itself. Second, identified regulation reflects behaviors that are self-initiated even if they are not interesting. For instance, workers display high levels of identified regulation when they put efforts in their job because it has personal significance to them. Third, introjected regulation refers to the regulation of behavior out of internally pressuring forces, such as avoidance of guilt and shame, and the pursuit of self-worth. Finally, external regulation refers to actions controlled by external contingencies (e.g., rewards, punishments, constraints).

Gagné and Deci (2005) argued that a supportive work environment should enhance autonomous forms of motivation, while controlling behaviors should be positively associated with controlled forms of motivation. Consistent with these claims, recent studies showed that perceived organizational support and supervisor autonomy support positively related to autonomous motivation (e.g., Gillet et al. 2013). In addition, Zapata-Phelan et al. (2009) found that procedural justice was significantly and positively associated with work autonomous motivation. Self-determination theory also posits that autonomous motivation should lead to more positive outcomes than controlled forms of motivation. Research has provided evidence for these claims with a number of cognitive, affective, and behavioral outcomes (see Gagné and Deci 2005). For instance, results from van Beek et al. (2011) revealed that workaholic employees were driven by external and introjected regulations, whereas engaged employees were driven by autonomous motivation. However, controlled forms of motivation have not always been found to lead to negative consequences. For instance, Parker et al. (2010) showed that controlled motivation was positively correlated to work engagement. An argument for the potential positive link between controlled motivation and various work outcomes is that workers with high levels of controlled motivation (e.g., introjected regulation) might function optimally only if they also have high levels of autonomous motivation (see Amabile 1993). Recent studies (e.g., Moran et al. 2012; Van den Broeck et al. 2013) using a person-centered approach have confirmed this hypothesis.

Indeed, the multidimensional nature of motivation makes person-centered statistical approaches particularly pertinent. These approaches allow for the variation between motivational variables to be reflected in specific groups with differing motivational profiles (Morin et al. 2011). In other words, a person-centered approach identifies subgroups within a sample that show specific combinations of motivation regulations. By identifying motivational profiles, this approach centers on how the different forms of motivation combine within individuals, while a variable-centered approach does not take into account the fact that employees may simultaneously endorse multiple reasons for doing their job. Using a person-level approach to describe one's motivational orientation thus represents a useful complement to variable-centered investigations (Chemolli and Gagné 2014). Indeed, using a variable-centered approach, one may find a positive link between autonomous motivation and well-being without knowing whether workers who reported high levels of autonomous motivation also exhibited high levels of controlled motivation. Such a situation does not take place with a person-centered approach where all types of motivation are simultaneously taken into account. Moran et al. (2012) also suggested that person-centered methods complement traditional variable-centered techniques by detecting complex interactions between variables; effects that are difficult to capture using methods such as multiple regression. Indeed, it is very complicated to interpret the results of a multiple regression with intrinsic motivation, identified regulation, introjected regulation, and external regulation as independent variables as well as two-, three-, and four-way interactions between these variables in the prediction of dependent variables such as well-being, because different steps should be taken in the regression analysis, numerous regression lines must be plotted, and interaction terms are graphed with high and low scores (generally at one standard deviation above and below the mean; see Aiken and West 1991) respectively.

3 Motivational Profiles

Recent research examining work motivation using person-centered approaches (e.g., Gillet et al. 2010; Graves et al. 2015) corroborated the usefulness of these approaches for studying work motivation. However, the number and characteristics of the various motivational profiles differed across research settings. It is likely that differences in results across these studies may be due to a number of methodological and contextual differences. For instance, the questionnaire used to assess work motivation was different in each investigation. Moreover, Graves et al. (2015) used latent profile analyses (LPA) to identify the motivational profiles in a sample of U.S. managers. Gillet et al. (2010) and Moran et al. (2012) used cluster analyses in samples of French and Chinese workers, respectively, while Van den Broeck et al. (2013) used these analyses in three samples of Belgian employees. The cluster method has been heavily criticized and largely supplanted by the LPA method (e.g., Morin et al. 2011). For instance, whereas cluster analysis is an exploratory technique, LPA is a model-based procedure that provides a more flexible model specification. In addition, the fit indexes provided in LPA enable different models to be compared and informed decisions to be made regarding the most appropriate number of profiles (Marsh et al. 2009). LPA is a person-centered approach, but is also related to factor analysis, in which the covariation of observed variables is explained by latent continuous variables. However, Bauer and Curran (2004) emphasized that the key difference between factor analysis and LPA is that "the common factor model decomposes the covariances to highlight relationships among the variables, whereas the latent profile model decomposes the covariances to highlight relationships among individuals" (p. 6).

Van den Broeck et al. (2013) used global scores of autonomous and controlled motivation to identify workers' motivational clusters. With this method of aggregation across the different forms of motivation, we cannot examine the links between each form of motivation (i.e., intrinsic motivation, identified regulation, introjected regulation, and external regulation) and well- and ill- being. Yet, Gillet et al. (2012) showed that it was important to distinguish between introjected and external regulations as the motivational profile leading to the highest levels of performance was characterized by high levels of introjected regulation but moderate levels of external regulation (see also Graves et al. 2015). In addition, introjected regulation and external regulation may differentially relate to work behaviors. For instance, Gagné et al. (2015) showed that external regulation significantly and positively related to turnover intentions, while introjected regulation was not significantly associated with this dimension. Finally, Chemolli and Gagné (2014) recently showed that evidence for the self-determination continuum was weak and recommended that researchers use the different forms of motivation as separate variables (see also Koestner and Losier 2002). Indeed, using a global score of controlled motivation (i.e., averaging external and introjected regulations) may not be appropriate as introjected regulation is sometimes weakly or not significantly correlated with external regulation (e.g., Moran et al. 2012). Therefore, we sought to identify workers' motivational profiles on the basis of their scores on the four forms of motivation (i.e., intrinsic motivation, identified regulation, introjected regulation, and external regulation) proposed by self-determination theory (Deci and Ryan 2008).

Results from Moran et al. (2012) revealed five distinct profiles that were differentially related to satisfaction of the needs of autonomy, competence, and relatedness, job performance, and work environment perceptions. Specifically, social support, job characteristic perceptions, and need satisfaction were the highest for the workers with high levels of

autonomous motivation, high levels of introjected regulation, and low to high levels of external regulation (respectively the High AU/INR–Low EXR and High AU/INR/EXR profiles which did not differ from one another). Moreover, the High AU/INR/EXR profile had the highest supervisor ratings of performance, followed by the Mod AU/INR/EXR and High AU/INR–Low EXR profiles. In contrast, social support, job characteristic perceptions, need satisfaction, and job performance were generally lower for the Low AU–Mod INR/EXR and Mod AU–Low INR–Mod EXR profiles. In line with self-determination theory postulates, these results point at the importance of autonomous motivation. However, no differences were found on workers' attitudes and behaviors (e.g., job satisfaction, intent to turnover) between the High AU/INR–Mod EXR and High AU–Mod INR/EXR profiles in the study conducted by Graves et al. (2015). Other research in the sport domain also showed that athletes characterized by a High AU/INR–Mod EXR profile obtained the highest levels of performance (e.g., Gillet et al. 2012). These results suggest that high levels of introjected regulation are not necessary harmful for workers' well-being if they are also associated with high levels of autonomous motivation.

More generally, using a person-centered approach to describe one's motivational orientation represents a useful complement to variable-centered investigations. Indeed, it is possible with this method to demonstrate that two profiles with similar levels of autonomous motivation but different levels of introjected and external regulations are not associated with the same levels of well- and ill-being. For instance, a High AU–Low INR/EXR profile and a High AU/INR–Low EXR profile may differentially relate to well- and ill-being. Specifically, if we demonstrate that the High AU/INR–Low EXR profile displays higher levels of well-being than the High AU–Low INR/EXR profile, this would challenge the self-determination theory perspective on the role of quality of motivation in well- or ill-being.

4 The Present Research

Although the person-centered approach is gaining popularity among motivation researchers, additional research is necessary to understand the interplay among the different forms of work motivation (Gillet et al. 2010). The first purpose of Study 1 was thus to identify workers' motivational profiles on the basis of their scores on the different types of motivation proposed by self-determination theory (Deci and Ryan 2008). We then examined how the motivational profiles relate to work engagement and quality of working life. In Study 2, we sought to replicate the motivational configurations found in Study 1 and examined the links between the motivational profiles and the same well-being indicators. In addition, we wished to ascertain if the same relationships would be obtained between the profiles and three additional well- and ill-being indices (i.e., work satisfaction, job anxiety, and burnout). The importance of these dimensions stems from research indicating that work satisfaction, work engagement, quality of working life, job anxiety, and burnout are predictors of numerous work behaviors including job performance and organizational citizenship behavior (e.g., van Emmerik et al. 2005; Wang et al. 2015).

It is also important to note that only four studies in the work domain has looked at the antecedents of motivational profiles (i.e., Graves et al. 2015; Jansen in de Wal et al. 2014; Moran et al. 2012; Van den Berghe et al. 2014). These researchers examined the relationships between social support, supervisor support, job characteristics, organizational politics, need satisfaction, and motivational profiles but did not consider other dimensions

that had significant effects on autonomous and controlled motivation in prior research. For instance, several studies have demonstrated that perceived organizational support and procedural justice were positively associated with work autonomous motivation (e.g., Gillet et al. 2013; Zapata-Phelan et al. 2009). Another purpose of the present research was to examine the links between perceived organizational support (Studies 1 and 2) and procedural justice (Study 2) and workers' motivational profiles to extend the limited amount of work on the organizational factors that contribute to the development of motivational profiles. Indeed, past studies emphasized the importance of perceived organizational support in the prediction of autonomous motivation in comparison to other variables such as perceived supervisor autonomy support (Gillet et al. 2013). In addition, procedural justice is more strongly related to autonomous motivation than interpersonal justice (Zapata-Phelan et al. 2009).

In sum, the present research should allow us to answer the following questions. Are the motivational profiles identified in the two present studies similar to those found in past research? Does a High AU/INR–Low EXR profile relate to the highest levels of well-being in the two present studies? Do autonomous motivation, introjected regulation, and external regulation work synergistically to explain all well- and ill-being indices? What are the links between perceived organizational support and procedural justice and workers' motivational profiles?

5 Study 1

In line with past research in the work domain (e.g., Gillet et al. 2010; Graves et al. 2015; Moran et al. 2012), we expected the presence of at least four motivational profiles: (1) a profile characterized by high scores on autonomous motivation, and low scores on introjected and external regulations (i.e., a High AU–Low INR/EXR profile); (2) a profile characterized by high scores on both autonomous motivation and introjected regulation, and low scores on external regulation (i.e., a High AU/INR–Low EXR profile); (3) a profile characterized by moderate scores on all motivation variables (i.e., a Mod AU/INR/EXR profile); and (4) a profile characterized by low scores on all forms of motivation (i.e., Low AU/INR/EXR profile).

When autonomously motivated, individuals experience volition, or a self-endorsement of their actions. In this case, employees perceive their work as congruent with their own values and interests, thereby allowing them to fully partake in the activity (Deci and Ryan 2000). We thus hypothesized that the two profiles with the highest levels of autonomous motivation, irrespective of their levels of controlled motivation (i.e., High AU–Low INR/EXR and High AU/INR–Low EXR profiles), would relate to higher levels of work engagement and quality of working life compared to the two other profiles with lower levels of autonomous motivation (i.e., Mod AU/INR/EXR and Low AU/INR/EXR profiles).

Recent studies showed that the High AU/INR/EXR profile related to the highest levels of well-being (e.g., Moran et al. 2012). Nevertheless, Van den Broeck et al. (2013) found that the High AU/INR/EXR and High AU–Low INR/EXR profiles did not differ from one another on well-being. Based on these results, Van den Broeck et al. (2013, p. 76) stated that "*a prudent conclusion could be that controlled motivation does not add to well-being in addition to high autonomous motivation*". In line with this conclusion, we hypothesized

that there would be no significant differences between the High AU/INR–Low EXR and High AU–Low INR/EXR profiles on work engagement and quality of working life.

Organizational support enhances employees' internalization of organizational values. In addition, when perceiving high levels or organizational support, workers see their work as more meaningful and self-expressive. Thus, organizational support will allow employees to experience work behaviors as self-concordant (e.g., Gillet et al. 2013) thereby facilitating autonomous motivation. It was thus hypothesized that the highest levels of perceived organizational support would be associated with the two profiles with the highest levels of autonomous motivation (i.e., High AU–Low INR/EXR and High AU/INR–Low EXR profiles).

5.1 Methods

5.1.1 Participants and Procedure

A convenient sample of 328 workers (123 men and 205 women) from various French companies participated in the present study. Participants' age ranged from 18 to 62 years ($M = 43.34$ years; $SD = 9.13$ years). They were employed in the public or the private sector, and worked in various companies located in the area of Tours, France. Respondents came from a variety of industries including telecommunications, manufacturing, healthcare, energy, and technology. Organizational tenure ($M = 13.56$ years; $SD = 9.67$ years) and tenure in the current job ($M = 6.76$ years; $SD = 6.65$ years) ranged from 0.25 to 41 years. Two hundred and ninety-four participants (89.6%) had a permanent contract and 34 have a temporary contract (10.4%). Two hundred and ninety-two participants were full-time workers (89.0%) and 36 were part-time workers (11.0%). For the part-time workers, working time ranged from 17.5 to 31.5 h per week ($M = 25.77$ h; $SD = 4.80$ h).

Two undergraduate research assistants collected the data related to this project. They were asked to administrate questionnaires to employees working in different organizations in France. Informed consent was processed according to all ethical standards. In each organization, participants who agreed to partake in the present research received a survey packet including the questionnaire, a cover letter explaining the study's purposes, and a consent form stressing that participation was confidential and voluntary. Completed questionnaires were given back to the research assistants. No incentive was offered to take part in the study.

5.1.2 Measures

5.1.2.1 Work Motivation Work motivation was assessed with the French version of the Multidimensional Work Motivation Scale (Gagné et al. 2015). This scale includes 13 items that assess intrinsic motivation (e.g., "*Because I have fun doing my job*", in French "*Parce que j'ai du plaisir à faire ce travail*"), and identified (e.g., "*Because putting efforts in this job has personal significance to me*", in French "*Car ce travail a une signification personnelle pour moi*"), introjected (e.g., "*Because I have to prove to myself that I can*", in French "*Car je dois me prouver à moi-même que j'en suis capable*"), and external regulations (e.g., "*Because I risk losing my job if I don't put enough effort in it*", in French "*Car je risque de perdre mon emploi si je ne fais pas assez d'efforts au travail*"). Participants are asked to indicate for each statement to what degree they correspond to one of the reasons for which they are doing their job on a 7-point scale ranging from 1 (*does not correspond at all*) to 7 (*corresponds very strongly*). The factorial structure of this scale was

assessed using confirmatory factor analyses (CFA). Results revealed poor fit of this model to the data, χ^2 (59) = 251.44, $p < .001$, $\chi^2/df = 4.26$, GFI = .90, IFI = .88, CFI = .88, and RMSEA = .10. Three items (i.e., one identified regulation item, "*Because I personally consider it important to put efforts in this job*", and two introjected regulation items, "Because I have to prove to myself that I can" and "Because it makes me feel proud of myself") with a low factor loading were removed to improve the fit of the model. Then, another CFA was conducted on the 10-item version of the scale. The fit indices revealed an acceptable fit of the model to the data, χ^2 (29) = 51.84, $p < .001$, $\chi^2/df = 1.79$, GFI = .97, IFI = .98, CFI = .98, and RMSEA = .05 All factor loadings were significant and the ten indicators had loadings greater to .50. Finally, the four subscales of the 10-item version of the scale also had acceptable internal consistency: $\alpha = .90$ for intrinsic motivation, $r = .50$, $p < .001$ for the two items assessing identified regulation, $r = .54$, $p < .001$ for the two items in the introjected regulation subscale, and $\alpha = .93$ for external regulation.

5.1.2.2 Work Engagement Work engagement was assessed using the French version of the nine-item (e.g., "At my work, I feel bursting with energy") Utrecht Work Engagement Scale (Schaufeli et al. 2006). Answers are given on a seven-point Likert scale from 0 (*never*) to 6 (*always*). In the present research, work engagement was treated as a unidimensional construct and individual scores were interpreted in a summative manner, giving a single global score of work engagement ($\alpha = .93$; see Sonnentag 2003).

5.1.2.3 Quality of Working Life The 16-item questionnaire ($\alpha = .93$) developed by Elizur and Shye (1990) was used for assessing participants' quality of working life (e.g., "*To what extent does your work contribute to enable you to succeed in expressing the values in which you believe?*"). Responses were made on a 6-point Likert scale ranging from 1 (*very little*) to 6 (*very much*).

5.1.2.4 Perceived Organizational Support Perceived organizational support ($\alpha = .90$; e.g., "*The organization really cares about my well-being*") was measured with the eight-item version of the Perceived Organizational Support Scale developed by Eisenberger et al. (1986). Respondents were asked to indicate the extent to which they agree with the eight statements on a 7-point scale from 1 (*not at all agree*) to 7 (*totally agree*).

5.1.3 Data Analysis

First, descriptive statistics were calculated to provide a description of the sample. Second, we used Mplus Version 7.4 (Muthén and Muthén 1998–2015) to conduct the LPA to identify theoretically meaningful subgroups of participants based on their motivation scores (see Berlin et al. 2014; Vermunt 2010). To determine the model fit, we evaluated several fit indexes, including the log-likelihood (LL) value, the Akaike's information criterion (AIC), the Bayesian information criterion (BIC), the sample-size-adjusted Bayesian information criterion (SSA-BIC), the entropy value, and the p values of the Lo–Mendell–Rubin (LMR) likelihood ratio test and bootstrap likelihood ratio test (BLRT). Smaller LL, AIC, BIC, and SSA-BIC indicated a better model fit. The entropy is the summary measure for the quality of the classification in a LPA model, with higher values indicating greater class separation. Finally, a significant p value for the LMR test and

BLRT would mean that the model with k classes fits the data better than the model with k − 1 classes (e.g., Berlin et al. 2014; Nylund et al. 2007; Zaslavsky et al. 2014).

In addition, the optimal solution should show clearly defined profiles, indicated by a high probability that participants actually belong to the profile to which they were assigned and a low probability of belonging to other profiles (i.e., as reflected in the posterior probability values) (see Nylund et al. 2007). It is also important to consider the substantive meaning and theoretical conformity of the profiles (Marsh et al. 2009). Once the final model with adequate number of classes was chosen, perceived organizational support was incorporated directly into this model to predict class membership through a multinomial logistic regression (Marsh et al. 2009; Morin et al. 2011). We then used the AUXILIARY (e) function to test the equality of well-being means (i.e., work engagement and quality of working life) across the various profiles (Magidson and Vermunt 2001).

5.2 Results and Discussion

Means, standard deviations, and correlations of all measures are presented in Table 1, while Table 2 provides the fit statistics for possible latent profile structures. We chose the four-profile solution because it exhibited lower LL, AIC, BIC, and SSA-BIC values in comparison to the two- and three-profile solutions, as well as significant LMR values in comparison to the three-profile solution. Although the five-profile solution had slightly lower LL, AIC, BIC, and SSA-BIC statistics in comparison to the four-profile solution, the LMR test was non significant. In addition, the decreases in values of most information criteria (i.e., LL, AIC, BIC, and SSA-BIC) reached a plateau around four profiles, suggesting that a four-profile solution was particularly suitable (Morin and Marsh 2015). Adding a fourth profile resulted in the identification of a distinct and theoretically meaningful profile (in comparison to a three-profile solution). In contrast, inspection of a five-profile solution revealed that the four-profile solution conformed most closely to theory and results found in prior studies. Finally, for the four-profile solution, the posterior probabilities were high that individuals belonged to their assigned profile, whereas probabilities of belonging to the other profiles were low. More precisely, average posterior probabilities of class membership in the dominant profile varied from .89 to .95 for the four-class model, with very low cross-probabilities (varying from .00 to .10). Thus, we retained the four-profile structure (see Fig. 1).

The first latent profile (60.0% of the sample) was labeled the high autonomous-low introjected/external profile (High AU–Low INR/EXR profile). It is characterized by workers presenting high levels of autonomous motivation, and low levels of introjected and external regulations. The second latent profile (15.6% of the sample) was labeled the high autonomous/introjected-low external profile (High AU/INR–Low EXR profile). It is characterized by workers presenting high levels of autonomous motivation and introjected regulation, and low levels of external regulation. The third latent profile (11.9% of the sample) was labeled the moderate autonomous/introjected/external profile (Mod AU/INR/EXR profile). It is characterized by workers presenting moderate levels of autonomous motivation, introjected regulation, and external regulation. Finally, the fourth latent profile (12.5% of the sample) was labeled the low autonomous/introjected/external profile (Low AU/INR/EXR profile). It is characterized by workers presenting low scores on autonomous motivation, introjected regulation, and external regulation. These four motivational profiles are consistent with those already identified in samples of workers (e.g., Gillet et al. 2010; Moran et al. 2012; Van den Broeck et al. 2013).

Table 1 Means, standard deviations, and correlations for the study variables (Study 1)

Variables	*M*	*SD*	1	2	3	4	5	6
1. Intrinsic motivation	5.40	1.26						
2. Identified regulation	4.79	1.46	.68***					
3. Introjected regulation	2.38	1.65	.03	.17**				
4. External regulation	1.84	1.09	−.16**	−.07	.31***			
5. Perceived organizational support	4.75	1.20	.34***	.20***	.04	.12*		
6. Work engagement	4.24	0.98	.70***	.52***	.01	−.18**	.29***	
7. Quality of working life	3.27	0.86	.49***	.39***	.02	.04	.45***	.47***

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

Table 2 Model fit statistics (Studies 1 and 2)

Number of profiles	LL	AIC	BIC	SSA-BIC	Entropy	BLRT (p)	*LMR (p)*
Study 1							
2	−2146.682	4319.364	4368.673	4327.438	0.879	0.0000	0.0000
3	−2097.359	4230.717	4298.992	4241.896	0.836	0.0000	0.1231
4	−2055.126	4156.253	4243.492	4170.537	0.873	0.0000	0.0107
5	−2033.201	4122.402	4228.606	4139.791	0.883	0.0000	0.2785
Study 2							
2	−3654.045	7334.090	7389.414	7348.149	0.839	0.0000	0.0006
3	−3604.073	7244.146	7320.749	7263.613	0.785	0.0000	0.2003
4	−3549.030	7144.061	7241.943	7168.936	0.843	0.0000	0.0641
5	−3508.155	7072.309	7191.470	7102.592	0.815	0.0000	0.0056

LL log-likelihood, *AIC* Akaike information criteria, *BIC* Bayesian information criteria, *SSA-BIC* sample-size-adjusted BIC, *BLRT* bootstrapped likelihood ratio test, *LMR* Lo–Mendell–Rubin likelihood test

Perceived organizational support was then added directly to the model. This inclusion did not change the characteristics of the profiles, thus confirming their stability (Marsh et al. 2009). The results showed that perceived organizational support was associated with a greater probability of belonging to the High AU–Low INR/EXR ($\beta = .43$, SE = .14, $p < .01$), High AU/INR–Low EXR ($\beta = .43$, SE = .21, $p < .05$), and Mod AU/INR/EXR ($\beta = .54$, SE = .22, $p < .05$) latent profiles, taking the Low AU/INR/EXR profile as a referent. These findings suggest that perceiving high levels of organizational support is associated with the three profiles characterized by moderate to high levels of autonomous motivation. Such results are in agreement with past studies examining the relationships of perceived organizational support to autonomous motivation (e.g., Gillet et al. 2013).

Workers with the High AU–Low INR/EXR and High AU/INR–Low EXR profiles did not differ between them on work engagement ($\chi^2 = .07, p = .80$) but displayed the highest scores on this dimension, followed by those with the Mod AU/INR/EXR profile, and finally those with the Low AU/INR/EXR profile (global $\chi^2 = 67.95$, $p < .001$). Workers

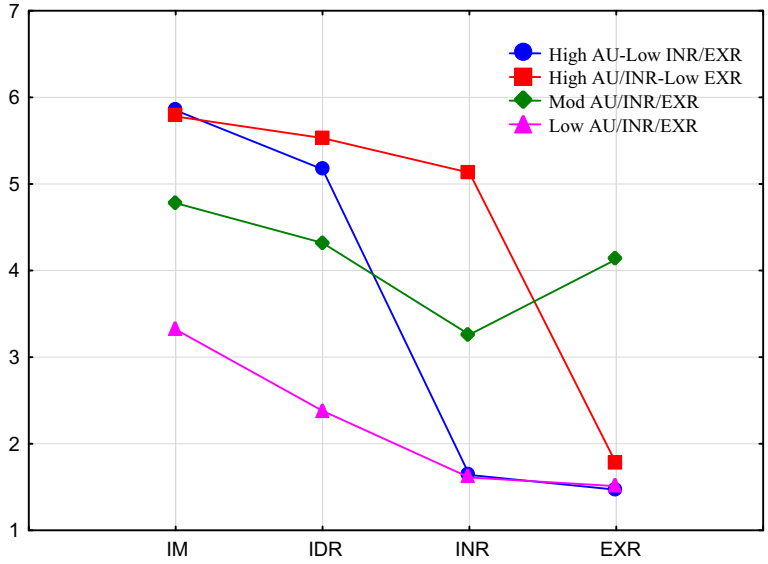

Fig. 1 Motivational profiles identified in Study 1. *IM* intrinsic motivation, *IDR* identified regulation, *INR* introjected regulation, *EXR* external regulation

with the Low AU/INR/EXR profile also displayed lower levels of quality of working life than those with the three other profiles which did not differ between them ($\chi^2 = 1.75$, $p = .19$ for High AU–Low INR/EXR and Mod AU/INR/EXR profiles; $\chi^2 = .90$, $p = .34$ for Mod AU/INR/EXR and High AU/INR–Low EXR profiles; $\chi^2 = .03$, $p = .87$ for High AU–Low INR/EXR and High AU/INR–Low EXR profiles). The present results are in agreement with self-determination theory (Deci and Ryan 2008) regarding the positive effect of autonomous motivation. Indeed, our findings first confirm that holding high amounts of autonomous motivation is associated with higher levels of well-being than holding small amounts of autonomous motivation. However, these findings do not support self-determination theory's contentions regarding the negative influence of introjected regulation. Moreover, as shown in previous research (e.g., Moran et al. 2012), the High AU–Low INR/EXR and High AU/INR–Low EXR profiles related to the highest levels of work engagement. These results are consistent with the proposition of Amabile (1993) who considered that controlled motivation combines synergistically with autonomous motivation to predict well-being, especially when workers display high initial levels of autonomous motivation.

6 Study 2

The purpose of this Study 2 was fourfold. First, we sought to replicate the motivational configurations found in Study 1 with a different sample of workers. We expected the presence of the same four motivational profiles obtained in Study 1. Second, we examined the relationships between these motivational profiles and the well-being indices examined in Study 1. Third, we also looked at the links between motivational profiles and three additional well- and ill-being indicators, namely work satisfaction, burnout, and job

anxiety. In line with self-determination theory (Deci and Ryan 2008), the arguments presented in our first study, and the results of Study 1, it was hypothesized that the least autonomous motivational profile (i.e., Low AU/INR/EXR motivational profile) would be associated with the highest levels of job anxiety and burnout, and the lowest levels of work satisfaction, quality of working life, and work engagement. As in Study 1, we hypothesized no significant differences between the High AU–Low INR/EXR and High AU/INR–Low EXR motivational profiles on these dimensions. Finally, we examined the links between two organizational factors (i.e., perceived organizational support and procedural justice) and motivational profiles. If employees perceive that the procedures are in line with social norms of accuracy, freedom from bias and voice, individuals should find their tasks more enjoyable and interesting (Zapata-Phelan et al. 2009). In line with these ideas and results of Study 1, it was thus hypothesized that the highest levels of perceived organizational support and procedural justice would be associated with the two motivational profiles with the highest levels of autonomous motivation (i.e., High AU–Low INR/EXR and High AU/INR–Low EXR profiles).

6.1 Methods

6.1.1 Participants and Procedure

The procedure used in the present study was the same as that used in Study 1. A convenient sample of 521 workers (201 men and 320 women) from various French companies took part in the present study. Participants' age ranged from 19 to 53 years ($M = 40.46$ years; $SD = 8.13$ years). Organizational tenure ranged from 0.33 to 37 years ($M = 11.07$ years; $SD = 8.15$ years) and average tenure in the current job ranged from 0.30 to 37 years ($M = 6.68$ years; $SD = 6.08$ years). Four hundred and seventy-one participants (90.4%) have a permanent contract and 50 have a temporary contract (9.6%). Four hundred and fifty-seven participants were full-time workers (87.7%) and 64 were part-time workers (12.3%). For the part-time workers, working time ranged from 17.5 to 31.5 h per week ($M = 26.76$ h; $SD = 3.50$ h).

6.1.2 Measures

We used the same scales as in Study 1 to measure work motivation, work engagement ($\alpha = .94$), quality of working life ($\alpha = .94$), and perceived organizational support ($\alpha = .86$). As in Study 1, results revealed an adequate fit of the model to the data for the 10-item version of the Multidimensional Work Motivation Scale (Gagné et al. 2015), χ^2 (29) = 91.27, $p < .001$, $\chi^2/df = 3.15$, GFI = .97, IFI = .95, CFI = .97, and RMSEA = .07. Indeed, a RMSEA value lower than .08 generally indicates a good fit (Hu and Bentler 1999) and Chen et al. (2008) demonstrated that there is little empirical support for the use of .05 as a universal cutoff value to determine adequate model fit. All factor loadings were significant and the ten indicators had loadings greater to .50. The four subscales of the 10-item version of the scale also had acceptable internal consistency: $\alpha = .88$ for intrinsic motivation, $r = .58$, $p < .001$ for the two items assessing identified regulation, $r = .62$, $p < .001$ for the two items in the introjected regulation subscale, and $\alpha = .64$ for external regulation. The Cronbach's alpha for external regulation was below the recommended .70 criterion (Nunnally 1978). However, alpha values are heavily dependent on the number of items composing the scale. As Cronbach's alpha is too sensitive to the number of items, Briggs and Cheek (1986) suggested to use the inter-item

correlation as a statistical marker of internal consistency. The present results support the adequacy of the external regulation subscale as the inter-item correlations for external regulation ranged between .37 and .39 (see Clark and Watson 1995).

6.1.3 Work Satisfaction

Workers' satisfaction towards their work (5 items, $\alpha = .88$) was assessed using the French version of the Satisfaction with Life Scale (Diener et al. 1985) in which the word "life" was replaced by "work" (e.g., "I am satisfied with my work"). Responses were made on a 7-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*).

6.1.3.1 Job Anxiety The two-item global job-anxiety subscale ($r = .84$, $p < .001$; e.g., "*I feel severely uncomfortable and tense when I am at my workplace*") from the Job-Anxiety-Scale (Linden et al. 2008) was employed. Participants responded to items on a 7-point Likert-scale anchored by 1 (*totally disagree*) and 7 (*totally agree*).

6.1.3.2 Burnout Physical fatigue (6 items, $\alpha = .93$; e.g., "*I feel physically fatigued*") was measured using the French version of the Shirom-Melamed Burnout Measure (Shirom and Melamed 2006). Response was given on a 7-point Likert scale ranging from 1 (*never*) to 7 (*always*).

6.1.3.3 Procedural Justice Seven items from the scale developed by Colquitt (2001) were used to assess workers' perceptions of procedural justice ($\alpha = .66$; e.g., "*Have you been able to express your views and feelings*"). Items were completed on a 7-point Likert-type scale ranging from 1 (*never*) to 7 (*always*).

6.1.4 Data Analysis

As in Study 1, we first used LPA to identify the motivational profiles. Once the final model with adequate number of classes was chosen, perceived organizational support and procedural justice in were incorporated directly into this model to predict class membership through a multinomial logistic regression (Marsh et al. 2009; Morin et al. 2011). We then used the AUXILIARY (e) function to test the equality of well- and ill-being means (i.e., work engagement, quality of working life, work satisfaction, job anxiety, and burnout) across the various profiles (Magidson and Vermunt 2001).

6.2 Results and Discussion

Means, standard deviations, and correlations of all measures are presented in Table 3, while Table 2 provides the fit statistics for possible latent profile structures. As in Study 1, we chose the four-profile solution (see Fig. 2) because it exhibited lower LL, AIC, BIC, and SSA-BIC values in comparison to the two- and three-profile solutions, as well as marginally significant LMR values in comparison to the three-profile solution ($p = .06$). Although the LMR test was significant for the five-profile solution and the five-profile solution had slightly lower LL, AIC, BIC, and SSA-BIC statistics in comparison to the four-profile solution, the entropy value was lower than for the four-profile solution. In addition, adding a fourth profile resulted in the identification of a theoretically meaningful profile (in comparison to a three-profile solution), while the additional fifth profile did not

Table 3 Means, standard deviations, and correlations for the study variables (Study 2)

Variables	*M*	*SD*	1	2	3	4	5	6	7	8	9	10
1. Intrinsic motivation	5.13	1.44										
2. Identified regulation	4.63	1.59	.64**									
3. Introjected regulation	2.60	1.74	−.06	.17**								
4. External regulation	2.26	1.27	−.15**	−.01	.27**							
5. Perceived organizational support	4.89	1.10	.30**	.20**	−.02	.05						
6. Procedural justice	3.34	1.09	.25**	.22**	.04	.15**	.36**					
7. Work engagement	3.97	1.01	.70**	.52**	.01	−.08	.30**	.24**				
8. Quality of working life	3.25	0.89	.46**	.44**	.07	−.03	.36**	.27**	.52**			
9. Work satisfaction	4.21	1.26	.65**	.52**	.01	.04	.51**	.39**	.59**	.61**		
10. Burnout	3.48	1.17	−.40**	−.23**	.11*	.07	−.32**	−.18**	−.34**	−.43**	−.52**	
11. Job anxiety	2.29	1.37	−.36**	−.19**	.09*	.07	−.41**	−.15**	−.35**	−.34**	−.45**	.54**

* $p < .05$; ** $p < .001$

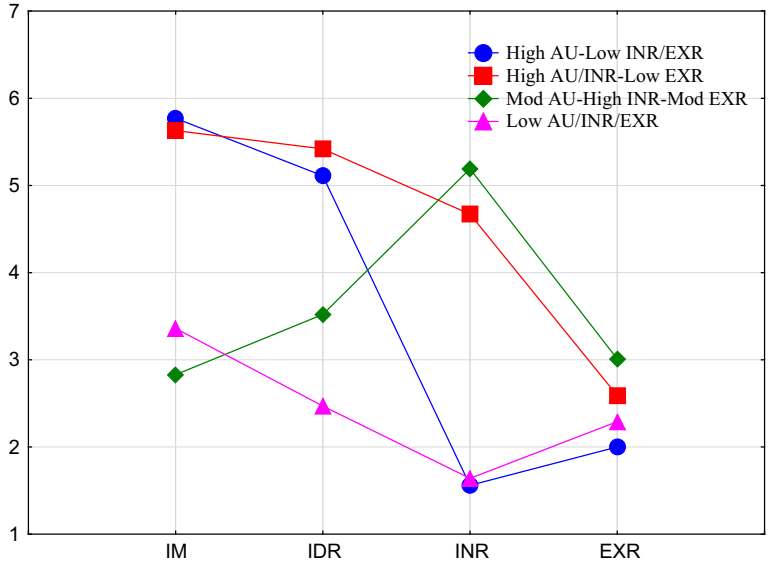

Fig. 2 Motivational profiles identified in Study 2. *IM* intrinsic motivation, *IDR* identified regulation, *INR* introjected regulation, *EXR* external regulation

add anything meaningful in theoretical terms. Finally, for the four-profile solution, the posterior probabilities were high that individuals belonged to their assigned profile, whereas probabilities of belonging to the other profiles were low. More precisely, average posterior probabilities of class membership in the dominant profile varied from .87 to .94 for the four-class model, with very low cross-probabilities (varying from .00 to .10).

The four profiles were very similar to those identified in Study 1, with the exception of the third latent profile that contained moderate levels of autonomous motivation, high levels of introjected regulation, and moderate levels of external regulation in Study 2, and moderate scores on all of these different forms of motivation in Study 1. The first latent profile (52.3% of the sample) was labeled the high autonomous-low introjected/external profile (High AU–Low INR/EXR profile). The second latent profile (26.1% of the sample) was labeled the high autonomous/introjected-low external profile (High AU/INR–Low EXR profile). The third latent profile (5.8% of the sample) was labeled the moderate autonomous-high introjected-moderate external profile (Mod AU–High INR–Mod EXR). Finally, the fourth latent profile (15.8% of the sample) was labeled the low autonomous/introjected/external profile (Low AU/INR/EXR profile).

Perceived organizational support and procedural justice were then added to the model tested. As in Study 1, these inclusions did not change the characteristics of the profiles. The results revealed that perceived organizational support and procedural justice were associated with a greater probability of belonging to the High AU–Low INR/EXR ($\beta = .52$, $SE = .18$, $p < .01$ for perceived organizational support; and $\beta = .53$, $SE = .22$, $p < .05$ for procedural justice) and High AU/INR–Low EXR ($\beta = .35$, $SE = .17$, $p < .05$ for perceived organizational support; and $\beta = .61$, $SE = .20$, $p < .01$ for procedural justice) profiles, taking the Low AU/INR/EXR profile as referent (no significant effects for the Mod AU–High INR–Mod EXR profile). Such results highlight the importance of perceived

organizational support and procedural justice in creating work conditions that are positively associated with autonomous motivation.

Finally, there were no significant differences between the Low AU/INR/EXR and Mod AU–High INR–Mod EXR profiles and between the High AU–Low INR/EXR and High AU/INR–Low EXR profiles on work engagement, quality of working life, work satisfaction, job anxiety, and burnout. However, workers with the High AU–Low INR/EXR and High AU/INR–Low EXR profiles displayed higher scores on work engagement, quality of working life, and work satisfaction, and lower scores on burnout and anxiety than those with the Low AU/INR/EXR and Mod AU–High INR–Mod EXR profiles (see Table 4). These results are in agreement with self-determination theory (Deci and Ryan 2008) and past studies using cluster analyses in the work context (e.g., Gillet et al. 2010). Since workers with the High AU–Low INR/EXR and High AU/INR–Low EXR profiles did not differ between them on the five well- and ill-being indices, these findings are also consistent with the proposition of Amabile (1993) and previous research (Moran et al. 2012; Van den Broeck et al. 2013) on the synergetic effect of autonomous motivation and introjected regulation.

7 General Discussion

The first aim of the present research was to examine, using LPA, individuals' motivational profiles in a real-life setting, namely the work context. We found a four-profile solution that fits the data well and seems useful to understand the motivational differences among workers in the two present studies. The second aim was to study the links between these motivational profiles and well- and ill-being. The results showed that workers with the High AU–Low INR/EXR and High AU/INR–Low EXR profiles displayed the highest levels of well-being and the lowest levels of ill-being. In addition, there were no significant differences between these two profiles on work engagement, quality of working life, work satisfaction, job anxiety, and burnout. Finally, we examined the links between two organizational factors (i.e., perceived organizational support and procedural justice) and motivational profiles. The results revealed that the highest levels of perceived organizational support and procedural justice were associated with the High AU–Low INR/EXR and High AU/INR–Low EXR profiles. These findings lead to a number of important implications.

7.1 On the Nature of Motivational Profiles in Work Settings

First, three similar motivational profiles were identified in two different samples of workers. For the fourth motivational profile, results showed slight differences between Studies 1 and 2. Specifically, the third latent profile was characterized by moderate levels of autonomous motivation, high levels of introjected regulation, and moderate levels of external regulation (i.e., a Mod AU–High INR–Mod EXR profile) in Study 2, and moderate scores on the various types of motivation (i.e., a Mod AU/INR/EXR profile) in Study 1. While past research in the work domain had also uncovered these profiles (e.g., Graves et al. 2015; Moran et al. 2012), other studies had not (e.g., Van den Broeck et al. 2013). These differences in results across studies that have used profile approaches may be due to methodological differences. Indeed, researchers have used different measures and subscale aggregation methods to create the profiles, and different statistical approaches (e.g., cluster

Table 4 Results from the Wald Chi square (χ^2) tests of mean equality of the auxiliary analyses of well- and ill-being (Study 2)

	Global χ^2	1 versus 2	1 versus 3	1 versus 4	2 versus 3	2 versus 4	3 versus 4	Summary
Work engagement	75.965***	0.059	28.375***	95.177***	26.065***	80.033***	0.001	1 = 2 > 3 = 4
Quality of working life	43.833***	0.363	11.345**	58.606***	12.090**	54.564***	1.411	1 = 2 > 3 = 4
Work satisfaction	80.945***	0.170	38.216***	122.989***	31.913***	99.556***	0.639	1 = 2 > 3 = 4
Burnout	19.155***	1.179	18.423***	19.218***	12.052**	10.387**	1.339	1 = 2 < 3 = 4
Job anxiety	9.361*	0.739	9.577**	9.851**	6.345*	5.328*	0.773	1 = 2 < 3 = 4

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

analyses, LPA). As suggested by Ratelle et al. (2007), the nature of the social context may also have an impact on the development of one's motivational profile. For instance, in the third sample used by Van den Broeck et al. (2013), only 5% of the participants attended higher education and this sample also included predominantly temporary workers (72%). This sample is not representative of the Belgian work force and its characteristics are very different from those of the present French samples. It is highly probable that sample characteristics may have a significant impact on workers' motivational profiles. Indeed, Gagné et al. (2010) showed that service workers were more externally regulated than health/education workers, and that manual/technical workers were less autonomously motivated than health/education workers. Although we attempted to increase the generalizability of our results by sampling employees from multiple organizations in a variety of industries, workers in the two present studies display relatively high levels of intrinsic motivation. Future research is thus needed to confirm the existence of the four present motivational profiles within other samples of workers and jobs in various settings (e.g., nurses, teachers, janitors).

Moreover, the present research was conducted using only workers from France. Future studies should be conducted to determine which cultural dimensions may lead to different profiles (see Deci et al. 2001). Of interest is that very similar motivational profiles have been obtained in other life domains (e.g., Ratelle et al. 2007). These results suggest that achievement-oriented life domains may yield similar motivational profiles but additional studies, especially in the work domain, are needed. Ideally, these investigations should be conducted with the same questionnaire to assess workers' motivation in order to facilitate the comparison of results across studies.

7.2 Motivational Profiles and Well- and Ill-Being

A second implication of the present research is that the four motivational profiles differentially relate to well- and ill-being. Bearing in mind that introjected and external regulations are located toward the lower end of the self-determination continuum (Deci and Ryan 2000), one might have anticipated that the High AU–Low INR/EXR profile would lead to the highest levels of well-being. This was not the case in the present research as there were no significant differences between the High AU–Low INR/EXR profile and the High AU/INR–Low EXR profile on well-being. Yet, self-determination theory posits that controlled motivation is detrimental for individuals' well-being. In addition, recent studies showed that controlled motivation negatively related to well-being variables such as work engagement (e.g., van Beek et al. 2011). Of interest, Moran et al. (2012) also found that higher performing workers exhibited high levels of autonomous motivation, introjected regulation, and external regulation (High AU/INR/EXR profile). More generally, although autonomous motivation and controlled motivation are typically pitted against one another, the present findings suggest that well-being may be associated with high levels of both autonomous motivation and introjected regulation, and low levels of external regulation.

The present results also revealed that workers characterized by the least autonomous motivational profiles (i.e., Low AU/INR/EXR profile in both studies as wells as Mod AU–High INR–Mod EXR profile in Study 2) displayed the lowest levels of work satisfaction, quality of working life, and work engagement, and the highest levels of job anxiety and burnout. By finding that the least autonomous motivational profiles were associated with the lowest levels of well-being and the highest levels of ill-being, the results provide support for self-determination theory (Deci and Ryan 2000, 2008). Indeed, self-determination theory posits that low autonomous motivation relates to negative attitudes and

behaviors. The present results are also in line with prior studies in other domains that found that the combination of low levels of autonomous motivation and low to moderate levels of controlled motivation was associated with negative outcomes (e.g., Vansteenkiste et al. 2009). Further, they are in line with those obtained in previous work investigations (e.g., Gillet et al. 2010; Moran et al. 2012; Van den Broeck et al. 2013). More generally, the present research stresses the fact that organizations and managers should be particularly attentive to workers with low levels of autonomous motivation. Indeed, our findings revealed that individuals displaying low levels of autonomous motivation do not function optimally. Organizations dealing with such workers should thus implement actions to enhance their autonomous motivation and avoid negative attitudes and behaviors such as burnout, anxiety, absenteeism, and turnover.

In the present research, it thus appears that the high levels of autonomous motivation that the High AU/INR–Low EXR profile displayed served a protective function against introjected regulation. Such was not the case for the Mod AU–High INR–Mod EXR profile whose levels of autonomous motivation may have been too low to protect against the high levels of introjected regulation. Other authors (e.g., Amabile 1993) have suggested that when autonomous motivation is high, controlled forms of motivation (e.g., introjected regulation) may act in synergy with autonomous motivation in leading to well-being. A similar observation and explanation can be found in the commitment literature where employees with strong continuance commitment have been argued to interpret the costs associated with leaving the organization differently when they have a strong affective commitment than when they have a weak affective commitment. Moreover, it has been argued that normative commitment is experienced differently depending on whether it combines with strong affective commitment or strong continuance commitment (see Meyer et al. 2012).

In sum, introjected regulation does not always relate to ill-being and can even be associated with workers' well-being when they also display high levels of autonomous motivation. Such results are particularly interesting given that researchers have generally shown that, contrary to autonomous motivation, controlled forms of motivation had detrimental effects in the workplace (see Gagné and Deci 2005). It is important to note that it would have been not possible to demonstrate such results in a variable-centered approach and more precisely with interactions between global scores of autonomous and controlled motivation. Indeed, as shown in previous research (e.g., Gillet et al. 2010; Graves et al. 2015), the present results revealed that we need to distinguish between introjected and external regulations when we looked at workers' motivational profiles. Future research would do well to further examine potential differences in the prediction of well-being between two profiles characterized by the same levels of autonomous motivation but different levels of introjected and external regulations. For instance, does a motivational profile characterized by high levels of autonomous motivation and introjected regulation, and low levels of external regulation (High AU/INR–Low EXR profile) lead to higher levels of well-being than a motivational profile characterized by high scores on all forms of motivation (High AU/INR/EXR profile) and a High AU–Low INR/EXR profile? If future studies explore this question and confirm that the High AU/INR–Low EXR profile is the most adaptive, they might conclude that displaying high levels of both autonomous motivation and introjected regulation is beneficial for workers and organizations, only if the scores on external regulation are low. More generally, future research is needed to investigate the relationships between motivational profiles and other positive (e.g., organizational citizenship behaviors, organizational commitment) and negative (e.g., workaholism, work-family conflict) outcomes.

7.3 Organizational Factors and Motivational Profiles

A third implication of the present research is that it also adds to the literature on the organizational factors related to motivational profiles and positive psychology. Specifically, the highest levels of perceived organizational support and procedural justice were associated with the High AU/INR–Low EXR and High AU–Low INR/EXR profiles. These results are consistent with those of previous studies showing that perceived organizational support and procedural justice are positively associated with autonomous motivation (e.g., Zapata-Phelan et al. 2009). Given that the two motivational profiles with the highest levels of autonomous motivation (i.e., High AU/INR–Low EXR and High AU–Low INR/EXR profiles) related to the highest levels of well-being, results advocate the promotion of autonomous motivation through perceived organizational support and procedural justice. Specifically, in line with the postulates of the hierarchical model of motivation (Vallerand 1997), these organizational factors should facilitate need satisfaction, which, in turn, would be positively associated with autonomous motivation. However, further research is still needed on the links between other organizational factors (e.g., psychosocial safety climate, job design) and workers' motivational profiles. Future studies would also do well to identify the organizational and managerial factors (e.g., laissez-faire leadership, abusive supervision) that may facilitate the thwarting of the psychological needs (Bartholomew et al. 2011) and contribute to the development of controlled motivation.

7.4 Limitations

This research had some limitations. First, whereas the present research used a very informative statistical technique, namely LPA, it should be underscored that the design used in both studies was correlational in nature. Consequently, although we focused on five different well- and ill-being indices, and perceived organizational support and procedural justice as organizational factors related to motivational profiles, in accordance with previous research (e.g., Gillet et al. 2013), we cannot infer causality from the findings. Thus, future investigations using longitudinal and experimental designs are necessary. Second, scholars may examine, in future research, the stability of the motivational profiles over time (see Navarro et al. 2013; Roe 2014), and the role they play in predicting well- and ill-being. Indeed, numerous studies in the educational context examined the development of students' motivation and showed, for instance, a positive development of motivation across the transition from secondary to higher education (Kyndt et al. 2015). Specifically, autonomous motivation increased, while the increase in controlled motivation was more limited in the study by Kyndt et al. (2015). Future longitudinal studies in the work domain are needed in order to identify the factors that may explain these potential changes in employees' motivation and to investigate how motivation is linked to changes in work outcomes. In other words, researchers should consider work motivation as a dynamic and fluctuating process over time. Third, self-report measures were used and such measures can be impacted by social desirability. We thus encourage researchers to conduct additional research using objective absenteeism and turnover data as well as supervisor-rated measures of performance and citizenship behaviors as ultimate outcomes. Fourth, we only considered one form of organizational justice (i.e., procedural justice). It would be interesting in future research to examine the links between other dimensions of organizational justice and workers' motivational profiles. Finally, future research should be conducted

with the French version of the Multidimensional Work Motivation Scale (Gagné et al. 2015) to confirm the reliability and validity of this questionnaire.

7.5 Practical Implications

In the present research, workers' perceptions of organizational support and procedural justice were found to be positively associated with autonomous motivation, supporting the proposition that organizations should promote organizational support and procedural justice. First, Chambel et al. (2015) also showed that perceived organizational support was positively correlated to work autonomous motivation and well-being. In other words, these findings suggest that perceived organizational support leads to an increase in workers' autonomous motivation, and thus facilitate the development of their well-being and the reduction of their ill-being. In light of these results, it appears important for researchers to identify factors that enhance perceived organizational support and that organizations implement actions to enhance organizational support. For instance, Rhoades and Eisenberger (2002) showed that fairness, supervisor support, and rewards/job conditions increase perceived organizational support. In their meta-analysis, Kurtessis et al. (2015) also examined the antecedents of perceived organizational support (i.e., leadership, employee-organization context, human resource practices, and working conditions). Results revealed that perceived supervisor support, leader consideration, transformational leadership, employee-organization value congruence, job security, and participation in decision-making were positively related to perceived organizational support. Finally, Kim and Mor Barak (2015) found that diminishing role stress of the workers can increase their perceptions of organizational support. More generally, supervisors can make an effort to create more supportive work environments by establishing organizational strategies and providing individual support to their workers.

The present findings also suggest that managers should be aware of the positive effects of procedural justice on autonomous motivation and well-being. Some human resource management practices such as bottom-up information (e.g., regularly asks for the workers' opinion) and non-monetary rewards (e.g., the noteworthy contributions are announced publicly in the organization) can increase workers' perceptions of procedural justice (Tremblay et al. 2010). Managers may also implement transparent and valid decision-making processes and rules, and encourage participation in collective decision-making processes to increase employees' perceptions of procedural justice. However, managers should consider individual differences (e.g., identity, personality), when they are trying to promote procedural justice among their subordinates. Indeed, He et al. (2014) showed that organizations may benefit more by enhancing procedural justice perceptions particularly when employee moral identity centrality is low.

8 Conclusion

In sum, four motivational profiles were identified in two samples of workers. Further, these distinct profiles were found to be differentially associated with well- and ill-being. Indeed, the present results showed that high levels of introjected regulation in the presence of high autonomous motivation (i.e., a High AU/INR–Low EXR profile) is not harmful for work satisfaction, quality of working life, and work engagement, and does not relate to ill-being (i.e., job anxiety and burnout). Further, it appears that perceived organizational support and

procedural justice represent two organizational factors related to the motivational profiles (i.e., High AU/INR–Low EXR and High AU–Low INR/EXR profiles) associated with the highest levels of well-being.

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