

# Work Locus of Control, Motivational Regulation, Employee Work Passion, and Work Intentions: An Empirical Investigation of an Appraisal Model

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**Abstract** In accordance with appraisal theory, relationships among four psychological constructs within an individual are examined: work-specific locus of control, motivational regulation, work passion, and work intentions. A survey was administered electronically to a database of working professionals, and 2654 responses were analyzed using structural equation modeling. Locus of control variables were significantly related to all three forms of motivational regulation in employees. Three of the five possible relationships between forms of motivational regulation and work passion variables were found to be significant, in part supporting the importance of autonomous regulation to both harmonious passion and obsessive passion in the employee appraisal process. Partial mediation testing indicated that internal locus of control directly contributed somewhat to harmonious passion, and the same was found to be true for external locus of control and obsessive passion. Both work passion variables predicted work intentions, but stronger relationships were found between harmonious passion and work intentions. Findings and practical implications are discussed.

**Keywords** Work locus of control · Motivational outlook · Work passion · Work intentions · Appraisal theory

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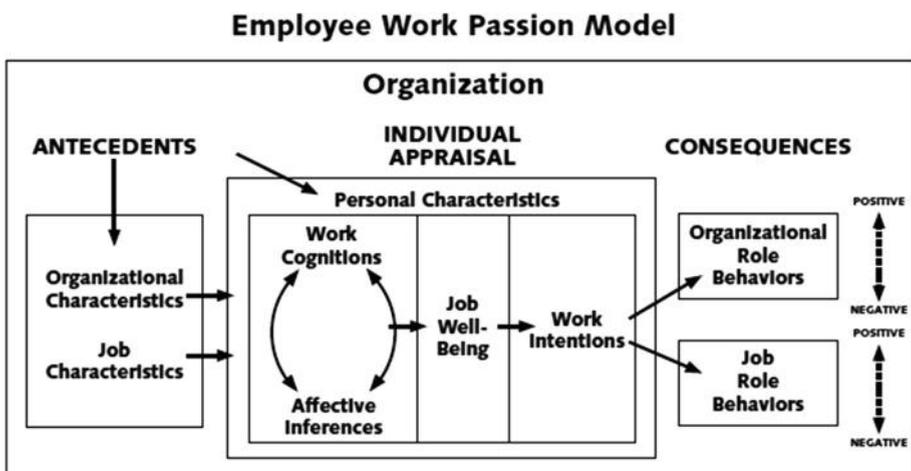
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Passion has been described as “a strong inclination toward an activity that people like, find important, and in which they invest time and energy” (Vallerand 2008, p. 1). In the last decade, Robert Vallerand and his coauthors have pursued research on passion in human endeavors, including passion toward various life activities such as gambling (e.g., Mageau et al. 2005; Rousseau et al. 2002), romance (e.g., Séguin-Lévesque et al. 2003), and sports (e.g., Vallerand 2008).

More recently, however, research on passion at work has begun to emerge (e.g., Forest et al. 2011; Ho et al. 2011). Zigarmi et al. (2009, 2011) examined employee work passion literature through the lens of appraisal theory (e.g. Bagozzi 1992; Lazarus 1991a; Lazarus and Folkman 1984) to offer an operational definition of employee work passion. Zigarmi et al. (2009) defined work passion as “an individual’s persistent, emotionally positive, meaning-based, sense of well-being, stemming from reoccurring cognitive and affective appraisals of various job and organizational situations that result in consistent, constructive work intentions and behaviors” (p. 310). This definition offers clarity through its underlying assumption that individuals learn through interaction and appraisal of their experience (Lazarus and Folkman 1984), which involves cognitive and affective assessments of what is personally at stake in a given situation (Kormanik and Rocco 2009; Lazarus and Folkman 1984; Markus 1997).

Affective-cognitive judgments, a state of subjective well-being, and coping strategies are the three fundamental elements in the appraisal process (Fugate et al. 2011; Lazarus 1982; Lazarus and Folkman 1984). There are two phases to the appraisal process. In the first phase, the individual assesses the impact the environment has, if any, on his/her state of well-being. In the second phase, the individual forms judgments as to the intentions necessary to cope with the environment’s impact on that state of well-being (Lazarus 1991a, b; Lazarus and Folkman 1984).

The Employee Work Passion Appraisal (EWPA) model, as illustrated in Fig. 1, Zigarmi et al. (2009) emphasizes the employees’ frequent affective and cognitive appraisals of their work experience, their resultant state of job well-being, and intentions that arise from such appraisals. The EWPA model proposes the inclusion of both environmental antecedents (e.g., organizational or job characteristics) and personal antecedents (e.g., employee beliefs, values, interests, or traits) as a basis for understanding the formation of a work passion (Zigarmi



**Fig. 1** Employee work passion model. Adapted from Zigarmi et al. (2011), p. 208. Copyright 2011 by Wiley. Reprinted with permission

et al. 2009, 2011). Zigarmi and Nimon (2011) and Zigarmi et al. (2011) proposed that one way to judge the psychological state of employee work passion should be through the declared level and type of intentionality that arises from the appraisal process.

In the initial field test of the EWPA model, evidence was presented for the relationship between employees' cognitive and affective appraisal of their work experience and the resultant state of job well-being and intentions (Zigarmi et al. 2011). Specifically, they offered empirical evidence for how latent cognitive and affective appraisals of environmental factors may influence the employee's state of job well-being and intentions. However, in their investigation, Zigarmi et al. (2011) did not examine how possible personal antecedents may shape the appraisal process. In later research, Roberts and Zigarmi (2014) partially tested the EWPA model by looking at how the effects of dispositional cynicism as a personal antecedent, related to employee affect and intentions. Their study provided initial evidence for the relevance of personal antecedents in the EWPA model, but much more work can still be done to explore the impact of other personal antecedents in the appraisal process underlying work passion.

The purpose of this study is to build upon earlier work by partially testing the EWPA model advanced by Zigarmi et al. (2009, 2011) and Roberts and Zigarmi (2014). Specifically, we investigate empirical connections between individual employees' perceptions of their work locus of control (LOC; as a personal antecedent) and forms of motivational regulation (as cognitive appraisals), and how these constructs are related to perceptions of harmonious/obsessive passion (as a state of job well-being) and work intentions (as coping strategies). Forms of motivational regulation are included in the model because they are critical to understanding how personal antecedents (LOC) and cognitive appraisals of the work context (i.e., motivational regulation) contribute to an individual's state of job well-being (harmonious and obsessive passion) and behavioral intentions. We also include motivational regulation constructs in the model because research has shown they are key for distinguishing between the forms of harmonious and obsessive passion (Curran et al. 2015).

The present study is designated as only a partial test of the EWPA model because we do not include any measures of environmental cognitions such as organizational characteristics or job characteristics outlined in the initial EWPA model, and for parsimony's sake we have not included a specific measure of affect. Roberts and Zigarmi (2014) earlier showed a strong empirical connection between the personal antecedent of dispositional cynicism, specific positive and negative affect and five work intentions, providing some initial evidence between the emotional state of job well-being and work intentions.

The coming pages present: (a) a review of the literature concerning the primary constructs of interest for this work, (b) methods used to conduct the study, (c) results from preliminary analysis and model testing, (d) a discussion of findings and primary conclusions, and (e) limitations of the study, future research directions, and practical implications going forward.

## 1 Overview of Variables

### 1.1 Work Locus of Control as a Personal Antecedent

As stated above, the appraisal process is shaped by the personality, characteristics, and idiosyncrasies of the individual doing the appraising (Fugate et al. 2011; Ho et al. 2011;

Lazarus and Folkman 1984). Beliefs, values, commitments, styles of perceiving and thinking, generalized expectations, past history with the object being appraised, and motives are all personal antecedents that could be further researched and have been studied to varying degrees in both the person-organization fit literature (e.g., Ho et al. 2011; Kristof-Brown et al. 2005) as well as in the appraisal literature (e.g., Folkman 1984; Fugate et al. 2011; Lazarus 1982; Lazarus and Folkman 1984; Zigarmi et al. 2009, 2011). To put the personality variable LOC into full perspective, LOC has been deemed to be a social axiom (Deng et al. 2011; Leung et al. 2002), or a generalized belief about self, the social and the physical environment, as well as the spiritual world (Leung et al. 2002). Axioms are statements about the way things are, and they are expressed as generalized expectancies (Leung et al. 2002; Rotter 1966). Also, LOC is a personal antecedent that has not yet been empirically examined within the EWPA model.

From its initial inception in 1966, the concept of LOC (Rotter 1966) has been defined as the extent to which a person thinks rewards emanate from or are contingent upon one's own behavior (i.e., internal LOC) versus the extent to which a person thinks rewards are controlled by forces outside of the self (i.e., external LOC) and may occur independently of one's own actions (Rotter 1966; Spector 1988). In essence, this belief refers to the degree to which outcomes seem contingent upon one's own behavior. This definition has remained relatively consistent even though measures of LOC have been adapted in various settings and for various purposes (Furnham and Steele 1993). LOC has a well-established history throughout the literature on personality theory and has regularly been found to relate to human behavior (Ng et al. 2006; Ryon and Gleason 2014).

In this study, we specifically investigate work locus of control (WLOC; Spector 1982, 1988) as a personal antecedent, as WLOC is highly relevant to the employee context compared to the general LOC personality construct (Wang et al. 2010). A meta-analysis by Ng et al. (2006) examined 222 articles, noting the importance of locus of control as a concept. Ng and authors summarized the increased attention received by locus of control over the last four decades, and they uncovered the construct's strong relationships with a variety of variables such as marital problem solving, academic achievement, longevity, general sense of well-being, and the quality of parent-child relationships. Other work has established the importance of *work* locus of control as a construct. A meta-analysis by Wang, Bowling, and Eshelman (2010) used 184 articles (which included 51 studies not found in the Ng et al. study) to empirically examine the difference between general locus of control and work locus of control. The authors found that general locus of control had notable relationships with general criteria like life satisfaction and affective commitment, while work locus of control demonstrated comparatively stronger relationships with job satisfaction, affective commitment, and burnout, above and beyond variance in these work outcomes accounted for by general locus of control.

## 1.2 Forms of Motivational Regulation as Cognitive Perception

This study draws upon self-determination theory (SDT) and various corollaries established by SDT researchers in the last 30 years. In keeping with appraisal theory, SDT views the individual as active, volitional, capable of initiating behaviors, and capable of acting on behalf of their psychological needs (Deci and Ryan 1985b, 2002). Also in keeping with appraisal theory, behaviors can be chosen based upon expectations for future outcomes (Deci and Ryan 1985a, 2002).

Specifically, SDT emphasizes the fulfillment of the individual's basic innate psychological needs of autonomy, relatedness, and competence (Deci and Ryan 1985b, 2002).

Human motivation emanates from internal organismic needs for growth and integration rather than as just the reduction of basic physiological drives of hunger, thirst, sex, and avoidance of pain through the means of external stimuli (Deci and Ryan 1985b). While there is a range of human needs, and humans must engage in constant exchanges with their environment to meet those needs, true human thriving and flourishing involves more than physiological satiation (Deci and Ryan 2002). The needs for “psychological nutrients” are as essential as physiological sustenance, because they are necessary conditions for human psychic growth and well-being (Ryan and Deci 2000, p. 75).

SDT identifies two general forms of motivational regulation: controlled (extrinsic) regulation and autonomous (intrinsic) regulation. Controlled regulation is the engagement in an activity for instrumental reasons such as reward, status, social approval, or fear of causing disappointment in others (Gagne and Deci 2005; Meyer et al. 2010). Autonomous regulation relates to an individual’s involvement or engagement in an activity for its own sake, out of pleasure, interest, or meaningfulness and is in line with the individual’s values (Gagne and Deci 2005; Meyer et al. 2010). SDT poses two subdivisions (known as motivational outlooks) of controlled regulation: specifically connected to desired rewards or the avoidance of punishment (i.e., an external motivational outlook), and to enhance the ego, or to avoid feelings of guilt (i.e., an introjected motivational outlook). The other general form, autonomous regulation, also has two subdivisions (outlooks) which result in the individual engaging in activities because those activities are in line with expressed values (i.e., an identified motivational outlook) or for the individual to express a personal sense of self (i.e., an integrated motivational outlook).

Both external and introjected motivational outlooks are thought of as controlled regulation because of their focus or dependence upon external conditions or instrumental outcomes. In the case of controlled regulation, behaviors are initiated and maintained by contingencies external to the person or imposed onto a person (Gagne and Deci 2005). A work-related example might be the classic situation in which a salesperson strives to achieve a sales quota in order to earn a sales bonus or a promotion at the end of a performance period.

Both identified and integrated motivational outlooks imply high levels of volition and can be classified as types of autonomous regulation. Autonomy is realized when, after reflection, individuals believe that they are freely choosing to engage in an activity because it is in line with their core values and needs (Gagne and Deci 2005; Meyer et al. 2010; Ryan and Deci 2000). Another work example might be a drug salesperson striving to close a sale because in doing so the customer will receive the product they need to maintain or improve their health.

In addition to controlled or autonomous regulation, there is another possibility: an amotivational state, or the absence of motivation for a particular outcome, in which behaviors may result from perceived forces beyond an individual’s control. In this case, an individual believes he/she is unable to regulate behavior toward desired results. This sense of helplessness (or lack of meaning) could be due to environmental forces that are neither predictable nor controllable, or it could occur because individuals are overwhelmed by forces inside themselves, such as rage, discouragement, despair, or resignation (Deci and Ryan 1985b). In work situations, it is possible that an employee may be simply going through the motions to conduct their tasks without knowing why they are doing them, and without caring whether or not they continue performing them. Amotivation differs from controlled regulation in that, for the latter, individuals experience some sense of intentionality or purpose with respect to their actions. An amotivational outlook involves little

to no sense of intentionality and almost no task engagement, regardless of the output achieved.

Appraisal theory proposes that humans repetitively process events from the perspective of their well-being by linking past and present environmental experiences to values, emotions, and expectations that are related to the formation of intentions and future behavior (Duffy and Lent 2009; Lazarus 1991b; Lent 2004). The human appraisal process is comprised of three interactive components. Those components are: the attributes of the object being appraised, the attributes of the individual appraiser, and the meaning the individual derives from the appraisal (Tzeng 1975). Examples of the attributes of the appraiser are expectations, beliefs, past history with the object being appraised, values, motives, and past history in general, all of which can influence attention and appraisal from the onset (Lazarus 1982).

The cognitive aspects of the employee work passion appraisal model refer to an individual's development of latent mental schema or thought patterns that contain features, images, and ideas associated with the work experience being appraised (James and James 1989; Lord and Kernan 1987; Wofford et al. 1998). Because the perceived world possesses highly correlated elements, interrelated schema allow for cognitive conclusions or schemata (Lord and Kernan 1987).

According to some authors, cognition is characterized by higher-order reasoning such as expectation processing (what outcomes can I expect if I behave in certain ways), evaluation processing (this experience is bad or good for the following reasons), and attribution processing (what are the contributing causes) (Markus 1997; Wofford and Goodwin 1990). These forms of processing characterize the movement from descriptive aspects of experience to the evaluation and the weighing of alternative possible coping mechanisms. This rational, logical, weighing of experience is then compared and combined with past schemas of experience, such as beliefs, past history, values, motives, and past history with the specific object being appraised; therefore, already formed past appraisals may influence future appraisals to come (Lazarus 1982; Lazarus and Folkman 1984).

We have chosen to measure the cognitive schema of motives or motivational regulation on the job that is connected to the individual's higher order processing of their present experience in light of their past work history, and as it relates to the individual's beliefs and values. As will be seen in the description of varying forms of motivational regulation and outlooks, autonomous regulation involves different types of values than does controlled regulation.

It is important to note that LOC is not the same as forms of motivational regulation (Deci and Ryan 1985a, b). LOC is concerned with the expectancies of reinforcement and the individual's beliefs concerning who or what controls those reinforcements or outcomes. Forms of motivational regulation, rather, involve key aspects or factors that energize and direct behavior and how those factors relate to self-determination (Deci and Ryan 1985a). More specifically, LOC encompasses beliefs about what or who controls a person's reinforcements/outcomes while motivational regulation centers around why a person behaves the way they do.

Deci and Ryan (1985a, b) found a weak relationship between locus of control and motivational regulation. They maintained that locus control relates to an individual's beliefs that reinforcements are not controllable, and that motivational regulations are connected to the perceived source of initiation and an individual's reason for a particular behavior. They reported that external locus of control modestly correlated with controlled regulation ( $r = 0.29$ , Deci and Ryan 1985a). They go on to note, "it appears, therefore, that although Rotter's external locus of control is conceptually intended to measure beliefs

in behavior-outcome independence, it also to some extent measures people's experience of being controlled by external demands when outcomes are contingent upon their behavior" (p. 167).

At the present, we found no empirical studies correlating work LOC with motivational regulations, and we found only scant theoretical mention of their relationship. Given the conceptual difference between these two constructs, we hypothesize:

**Hypothesis 1a** External work locus of control will be positively correlated with amotivation and controlled regulation, and negatively correlated with autonomous regulation.

**Hypothesis 1b** Internal work locus of control will be positively correlated with autonomous and controlled regulation, and negatively correlated with amotivation.

### 1.3 Work Passion as a Manifestation of a State of Job Well-Being

The concept of well-being has been used interchangeably with concepts such as job satisfaction (e.g., Page and Velle-Brodrick 2009), happiness (e.g., McMahan and Estes 2011), engagement (e.g., Schaufeli et al. 2008) and the fulfillment of one's potential (e.g. Ryff 1989). Different types of well-being such as general well-being, job-related well-being, psychological well-being and job-related affective well-being also been researched (e.g., Grebner et al. 2005; Schimmack et al. 2008). The study of the concept of general well-being has evolved to become a comprehensive set of criteria for well-being (e.g., Diener et al. 1999; Ryff 1989). Examples of internal factors within the general well-being concept could involve the sub-constructs of self-acceptance, positive relationships with others, autonomy, environmental mastery, purpose in life, and personal growth (Ryff 1989).

When using the term job well-being within the context of appraisal theory, the concept must be understood as somewhat distinct from the concept of general well-being prevalent in today's psychological literature. Subjective job well-being within the context of appraisal theory must be seen from a process-oriented perspective through which the appraiser is attempting to answer two basic questions: (1) "Am I in trouble or being benefited, now or in the future and in what way?" and (2) "What if anything can be done about it?" (Lazarus and Folkman 1984, p. 31). The first question of the appraisal is primarily a cognitive process of categorizing and understanding work experience in its different dimensions of threat or challenge and its significance for the individual's state of affective job well-being (Lazarus and Folkman 1984). The appraisal process is, to a great extent, cognitive, evaluative, and focused "on the meaning or significance of the immediate experience," with its accompanying affect and is less a matter of analysis of an individual's perceptions of his/her ability to function over the long-term (Lazarus and Folkman 1984, p. 31).

As with work passion, subjective job well-being has both an affective and cognitive component (Schimmack et al. 2008). While there may seem to be some of conceptual overlap between subjective affective well-being and harmonious passion, they are not identical concepts. Researchers have found that harmonious and obsessive passion indicate how people typically behave with respect to a specific job activity, in that they represent "a relatively stable internal factor that is sufficiently important to influence one's sense of well-being" (Philippe et al. 2009, p. 18). The concept of work passion and its subdivisions of harmonious and obsessive passion have the capacity to shed light on both the state of threat and the state of challenge characteristic of the appraisal process. The concept of work passion and the appraisal process both acknowledge a dualistic affective framework

of negative and positive emotions. In a recent meta-analysis spanning a decade of research on passion it was reported that “positive affect, life satisfaction, and vitality shared a moderate positive correlation with harmonious passion... and have a large negative correlation with burnout” (Curran et al. 2015, p. 638). This meta-analytic study also noted that “obsessive passion correlated positively with indicators of ill-being (i.e., negative affect and burnout)” (Curran et al. 2015, p. 643). In the present study, we have chosen to use harmonious and obsessive passion as a manifestation of the individual’s state of job well-being.

While work is a common aspect of everyday life, research shows that people engage in their work activities very differently (e.g., Vallerand 2008). The study of work passion has focused upon the degree to which individuals find meaning, interest, and emotional attachment to the work they do (Forest et al. 2011; Vallerand 2008). Vallerand et al. (2003) proposes passion as an intense tendency for individuals to engage in selected actions they find important and worth their energy. In this definition, the passionate activity reflects individuals’ core self-identities, whereby conducting such activity defines who they are (Vallerand et al. 2003). In other words, this kind of activity, autonomously chosen through a sense of volition and interest, becomes a central feature of an individuals’ life (Gagne and Deci 2005; Forest et al. 2011; Vallerand 2008). Another important aspect of passionate activity is that the individuals’ actions serves as a mechanism to satisfy basic psychological needs for autonomy, competence, and a sense of relatedness with others (Vallerand 2008; Vallerand et al. 2003).

Vallerand’s concept of passion is dualistic in that there is a more “positive” state of passion, termed *harmonious passion*, and a less autonomous state called *obsessive passion*. Harmonious passion is demonstrated when individuals freely give time and energy to activities that create a sense of autonomous volition and personal self-acceptance while pursuing the activities (Forest et al. 2011). When an individual is harmoniously passionate about certain activities, there is a balance with other life activities (Vallerand 2008).

Obsessive passion, on the other hand, is characterized by internal pressure to engage in a given activity. In this case, the activity takes a disproportionate amount of energy in relation to other life activities, which often generates conflict with other life areas (Vallerand 2008). It is almost as if the individual is dependent on, or addicted to, a certain activity in order to express himself/herself. This often leads to uncontrolled, undue risk and conflict as well as the display of rigid persistence toward a certain activities to the exclusion of other psychic needs, such as heavy gambling, which may lead to financial distress (Rousseau et al. 2002).

One of the byproducts of past motivation theories has been an emphasis on the measure of the quantity of motivation rather than the quality of motivation (Deci and Ryan 2008). The emergence of SDT research has produced the possibility to measure the quality of motivation, more specifically, the measurement of forms of motivational regulation that provide insight into reasons why an individual may embark on a given course of action. In this study we hope to shed light on cognitions (in the form of motivational regulation) related to personal antecedents that contribute to harmonious and obsessive passion. Thus, we sought to explain rather than describe the psychological processes that underpin many of the findings throughout the engagement and work passion literature.

A recent meta-analysis investigating harmonious and obsessive passion on interpersonal outcomes (Curran et al. 2015), as well as theoretical models found in the literature (e.g. Meyer et al. 2010; Vallerand and Bissonnette 1992; Vallerand et al. 2014) have posed similar sequences to explain the underlying latent processes which move from psychological needs to behavior. More specifically, Vallerand proposed “the environment (social

factors) influences perceived autonomy, competence, and relatedness (need satisfaction in SDT) that in turn influences motivation, that in turn leads to outcomes” (Vallerand 2000, p. 315). Various forms of regulation are formed from met or unmet needs (i.e., autonomy, competence, and relatedness). Vallerand also proposed and documented that motivation is a highly proximal influence to phenomenon such as passion and intentions (Vallerand and Bissonnette 1992). Based on the theoretical themes found in the literature we hypothesize the following:

**Hypothesis 2a** Autonomous regulation will be positively correlated with harmonious and obsessive passion.

**Hypothesis 2b** Controlled regulation will be positively correlated with harmonious and obsessive passion.

**Hypothesis 2c** Amotivation will be negatively or not at all correlated with harmonious passion and positively or not at all correlated with obsessive passion.

Harmonious and obsessive passion are also likely to relate to employees’ worldviews or general belief systems, somewhat depending upon the nature of employee regulation being used. Thus, we propose there will be direct relationships between internal/external LOC and the two types of work passion, such that this relationship will be partially mediated by employee regulation. We propose the following:

**Hypothesis 3a** Internal LOC will be positively correlated with harmonious passion and negatively correlated with obsessive passion.

**Hypothesis 3b** External LOC will be negatively correlated with harmonious passion and positively correlated with obsessive passion.

**Hypothesis 3c** The three types of regulation will partially mediate the relationship between internal/external LOC and harmonious/obsessive passion.

#### 1.4 Work Intentions as Outcomes of the Appraisal Process

Work intentions stem from the second phase of the appraisal process, in which individuals are focused upon strategies to deal with their sense of, or lack of, well-being (Lazarus 1991a). Intentions are mental images of the behavior individuals plan to manifest (e.g., Ajzen and Fishbein 1980; Bagozzi 1992). Intentions emerge to cope with realized problems or to fulfill needs and wants stemming from a positive or negative sense of well-being (Bagozzi 1992; Lazarus and Folkman 1984).

There are two types of intentions: goal intentions and means intentions (Heckhausen and Beckmann 1990; Sheeran et al. 2005). We define intentions as “a set of goal representations or mental schema and means representations or schema, formed as a result of the appraisal process, and which are focused upon meeting the needs and wants stemming from a sense of, or lack of, the appraiser’s well-being” (Zigarmi and Nimon 2011, p. 450). Depending upon the appraiser’s emotional state of well-being, intentions can result in employees manifesting more or less intense work passion toward the work they are doing and for their organization (Shuck et al. 2013, 2015).

In this study, the measurement of work intentions is made up of various work-related intentions found in the organizational outcomes literature over the last 40 years, specifically (a) the intent to remain in the organization, (b) intent to be an organizational citizen, (c) intent to perform at a higher than average level, (d) intent to use discretionary effort, or

(e) intent to endorse the organization (Zigarmi and Nimon 2011). These five intentions have been found to correlate with various dependent variables such as intent to remain and attrition (for an extended examination of these specific intentions, see Zigarmi and Nimon 2011).

Some studies have reported examining intentions and passion (e.g., Bonneville-Roussy et al. 2013; Gousse-Lessard et al. 2013), yet we found no studies examining the relationship between work passion and work intentions as described in the preceding paragraphs. Roberts and Zigarmi (2014) found significant relationships between negative and positive affect and work intentions. Based on those findings we hypothesize the following:

**Hypothesis 4a** Harmonious passion will be positively correlated with the five work intentions.

**Hypothesis 4b** Obsessive passion will be negatively or not correlated with the five work intentions.

## 2 Method

### 2.1 Participants and Procedure

The sample of participants for the study was generated from a database of email addresses housed by an international consulting company headquartered in Southern California. The database includes contact information for approximately 60,000 previous and potential clients of the company who expressed an interest in reviewing and occasionally participating in a series of surveys administered annually. As a result, all contacts in the database received an electronic invitation to participate in the survey as well as a link to the survey itself. Given the large number of surveys released each year, participation is typically in the 2–3% range; this survey was no exception with a total of 2654 individuals fully completing the survey.

The sample of participants was 62% female, 56% of respondents were born after 1960, and 67% reported holding manager-level positions. In addition, 44% had been serving in their current positions for 5 or more years, and 51% said their organizational tenure was 8 years or more. From a geographical perspective, 69% of respondents were located in the United States, with the rest located elsewhere. See Table 1 for demographic information on this study's participants.

### 2.2 Measures

#### 2.2.1 Work Locus of Control

We used the Work Locus of Control Scale (WLCS) (Spector 1988), a 16-item scale to measure two sub-constructs: internal and external LOC of reinforcement at work. Each item was rated with a response possibility from 1 (*disagree very much*) to 6 (*agree very much*). Eight of 16 items were reversed scored. Like Rotter's E-I scale (1966), the WLCS captures internality and externality. However, unlike Rotter's (1966) original conceptualization of general LOC as a one-dimensional construct, the WLCS treats LOC as a multidimensional construct, which is in line with later work on general LOC (e.g. Ferguson 1993; Oliver et al. 2006). Similarly for the WLCS in particular, although Spector

**Table 1** Summary of sample demographics

Variable (sample size)	Percentage of sample
Gender ( $n = 2654$ )	Male = 38% Female = 62%
Age ( $n = 2652$ )	Born after 1960 (younger) = 56% Born 1960 or earlier (older) = 44%
Position type ( $n = 2654$ )	Manager = 67% Non-manager = 33%
Job tenure ( $n = 2649$ )	4 years or less = 56% 5 years or more = 44%
Organizational tenure ( $n = 2651$ )	7 years or less = 49% 8 years or more = 51%
Location ( $n = 2646$ )	United States = 69% Non-US = 31%

advocated the use of the 16-item scale as a one-dimensional scale (Spector 1988), Oliver et al. (2006) provided a subsequent analysis that indicated construct multidimensionality. In the two-factor solution for WLCS, Oliver et al. (2006) reported an alpha coefficient of 0.87 for the external LOC subscale (e.g., “Promotions are usually a matter of good fortune”) and the alpha coefficient of 0.71 for the internal LOC subscale (e.g., “Promotions are given to employees who perform well on the job”). They also reported that the subscales were modestly but statistically significantly correlated ( $r = -0.12$ ). The alpha coefficients in this study were 0.86 for external LOC subscale and 0.72 for the internal LOC subscale.

### 2.2.2 Motivation at Work

This construct was measured by the Multidimensional Work Motivation Scale (MWMS) (Gagne et al. 2010). The respondents were directed to indicate to what degree the following statements reflect the reasons why they are doing their specific job at work. Using a Likert scale, each item had a response possibility of 1 (*not at all*), 2 (*very little*), 3 (*a little*), 4 (*moderately*), 5 (*strongly*), 6 (*very strongly*), or 7 (*exactly*). The MWMS is comprised of six subscales, a three-item scale called amotivation (e.g., “I don’t, because I really feel I’m wasting my time at work”); a three-item scale called extrinsic-social, (e.g., “To get others’ approval”); a three-item scale called extrinsic-material (e.g., “Because others will reward me financially only if I put enough effort in my job”); a four-item scale called introjected, (e.g., “Because otherwise I will feel ashamed of myself”); a three-item scale called identified, (e.g., “Because putting efforts in this job aligns with my personal values”); and a three-item scale called intrinsic motivation, (e.g., “Because what I do in my job is exciting”).

For the purposes of this study and in keeping with the literature (Gagne and Deci 2005; Meyer et al. 2010; Vallerand and Bissonnette 1992), the intrinsic and identified motivation subscales were combined into a total score and called autonomous regulation. The extrinsic-social, extrinsic-material, and introjected items were combined into a total score and called controlled regulation. The amotivation items were labeled amotivation. The alpha coefficients for these combined subscales in this study were: 0.90 for autonomous regulation, 0.86 for controlled regulation, 0.74 for amotivation.

### 2.2.3 Employee Work Passion

Employee work passion was measured using the passion scale developed by Vallerand et al. (2003). This scale is comprised of 14 items measuring two sub constructs called harmonious and obsessive passion (Vallerand et al. 2003). Items were rated on a 7-point scale ranging from 1 (*do not agree at all*) to 7 (*completely agree*). Harmonious passion was measured by seven items such as “This activity allows me to live memorable experiences.” Following the precedent set by other researchers (i.e., Ho et al. 2011); the items were reworded to refer to the respondent’s job circumstances (e.g., “This job allows me to live memorable experiences”). The alpha coefficient for the seven items of harmonious passion was 0.71 in Vallerand et al. (2003) and 0.90 for the reworded harmonious scale in Ho et al. (2011). Seven items were used to measure obsessive passion. These items were also changed to be reworded for a job application (e.g., “I have a tough time controlling my need to do this job”). Alpha coefficients previously reported for obsessive passion were 0.91 (Vallerand et al. 2003) and 0.85 for the reworded version (Ho et al. 2011).

### 2.2.4 Work Intentions

Work intentions were measured by the Work Intention Inventory (WII). Zigarmi and Nimon (2011) presented the rationale for the importance and conceptual basis for five intentions: *intent to remain*, *intent to be an organizational citizen*, *intent to perform*, *intent to use discretionary effort*, and *intent to endorse*. Using two studies, Zigarmi et al. (2012) established the construct validity for their five scales assessing various forms of employee work intentions.

The scales were reported to have consistently displayed adequate factorial structure and internal consistency (Zigarmi et al. 2012). All five scales suggested by Zigarmi et al. (2012) were used in this study. The scales of intent to stay (e.g., “I intend to continue to work here because I believe it is the best decision for me”), intent to be an organizational citizen (e.g., “I intend to respect this organization’s assets”), intent to perform (e.g., “I intend to exert the energy it takes to do my job well”), intent to use discretionary effort (e.g., “I intend to spend my discretionary time finding information that will help this company”), and intent to endorse (e.g., “I intend to speak out to protect the reputation of this organization”) had five items each. Each item was responded to on a 6-point Likert scale, ranging from 1 (*no extent*) to 6 (*to the fullest extent*). The alpha coefficients reported for these five scales (a total of 15 items) were: 0.87 for intent to stay; 0.93 for intent to be an organizational citizen; 0.95 for intent to perform; 0.88 for intent to use discretionary effort; and 0.96 for intent to endorse (Zigarmi et al. 2012).

### 2.2.5 Context-Specific Survey Design

All measures in the study were specific to the work context, as recent literature has demonstrated that frame-of-reference effects are important to consider in research (Bing et al. 2004; Shaffer and Postlethwaite 2012; Wang et al. 2010). Between-subjects variability attributable to raters’ differences in term interpretation across contexts can decrease the validity and reliability of measures (Bing et al. 2004; Holtz et al. 2005), so here respondents were asked to rate themselves on work-specific variables.

### 3 Results

#### 3.1 Preliminary Analysis

Initial correlations, means, standard deviations, and alpha reliabilities for variable scale scores are presented in Table 2, and bivariate relationships are considered to be significant only if  $p < 0.01$ . As expected, internal LOC was positively correlated with both controlled and autonomous regulation and negatively correlated with amotivation, while external LOC was positively correlated with both controlled regulation and amotivation and negatively correlated with autonomous regulation. In turn, obsessive work passion was positively correlated with all three types ( $r$ s ranged from 0.07 to 0.38), while harmonious work passion was positively correlated with autonomous regulation ( $r = 0.74$ ), negatively correlated with amotivation ( $r = -0.23$ ), and uncorrelated with controlled regulation. Internal LOC was positively correlated with both types of work passion ( $r = 0.45$  for harmonious and  $r = 0.17$  for obsessive), while external LOC was negatively correlated with harmonious work passion ( $r = -0.28$ ) but uncorrelated with obsessive work passion. As expected, harmonious work passion was positively and notably correlated with all five intentions (where  $r$ s ranged from 0.30 to 0.51), however, the relationship between obsessive work passion and intentions was positive and weak-to-moderate (where  $r$ s ranged from 0.07 to 0.33).

#### 3.2 Measurement Model

Structural equation modeling (SEM) in EQS was used as the primary analysis for hypothesis testing. To evaluate model fit, we followed the two-index presentation lead of Hu and Bentler (1999), who argued that the standardized root mean squared residual (SRMR) should be used in conjunction with one of the many comparative fit indices. To evaluate our 74-observed variable, 12-latent construct model, we chose the Root Mean Square Error of Approximation (RMSEA) over the Comparative Fit Index (CFI) because the CFI generally tends to worsen as more variables are added to the model, while the RMSEA does not (Chau and Hocevar 1995; Kenny and McCoach 2003). Thus, rather than manipulating our theoretical model by trimming variables to achieve an acceptable fit index (above 0.90) for the CFI, we honored the complexity of our proposed model by leaving it intact and instead evaluated model fit using SRMR and RMSEA. We did not correlate any error terms of our observed items. In addition, violations of the assumption of multivariate normality were not a concern; with more than 2500 observations, we were confident that maximum likelihood estimation methods were inferentially appropriate (Fan et al. 1999; Hu et al. 1992; Hu and Bentler 1998, 1999).

Prior to evaluating the hypothesized structural model, which suggested that an individual's LOC relates to work passion, both directly as well as through the different types of motivation (i.e., autonomous, controlled, and amotivation), and that harmonious and obsessive passion will be related to work intentions, several measurement models were examined using confirmatory factor analysis (CFA) in EQS. First, we tested the discriminant validity of latent factors within each of our four broad conceptual categories: LOC, motivation, work passion, and intentions. For each of those four categories, we compared a model with the items for each variable loading onto their own individual factors with a model in which all the items across variables loaded on a single factor. For the LOC variables, the 2-factor model fit significantly better than the 1-factor model

**Table 2** Scale score means, standard deviations, reliabilities, and correlations

	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12
(1) Internal locus of control	4.81	0.58	(0.72)											
(2) External locus of control	2.41	0.89	-0.36*	(0.86)										
(3) Controlled motivation	3.78	1.12	0.10*	0.15*	(0.86)									
(4) Autonomous motivation	5.57	1.10	0.41*	-0.31*	0.08*	(0.90)								
(5) Amotivation	1.56	1.00	-0.16*	0.28*	0.14*	-0.28*	(0.74)							
(6) Harmonious passion	4.99	1.32	0.45*	-0.28*	0.02	0.74*	-0.23*	(0.93)						
(7) Obsessive passion	2.41	1.39	0.17*	0.03	0.21*	0.38*	0.07*	0.47*	(0.92)					
(8) Intent to use discretionary effort	4.33	1.05	0.31*	-0.20*	0.13*	0.53*	-0.14*	0.47*	0.33*	(0.84)				
(9) Intent to perform	5.39	0.73	0.32*	-0.29*	0.03	0.55*	-0.31*	0.41*	0.14*	0.55*	(0.93)			
(10) Intent to endorse	4.83	1.15	0.38*	-0.29*	0.06*	0.56*	-0.26*	0.51*	0.26*	0.53*	0.59*	(0.95)		
(11) Intent to stay	3.31	1.23	0.28*	-0.19*	0.08*	0.47*	-0.14*	0.48*	0.33*	0.39*	0.32*	0.58*	(0.83)	
(12) Intention for OCB	5.40	0.72	0.27*	-0.27*	0.03	0.42*	-0.23*	0.30*	0.07*	0.45*	0.67*	0.52*	0.29*	(0.93)

Cronbach's alpha estimates are in parentheses on the diagonal.  $n = 2654$ 

\* Correlation is significant at the 0.01 level

( $\Delta\chi^2[1] = 1755.44, p < 0.001$ ); for motivation, the 3-factor model was superior to the 1-factor model ( $\Delta\chi^2[3] = 9572.13, p < 0.001$ ); for work passion the 2-factor model was superior to the 1-factor model ( $\Delta\chi^2[1] = 8682.04, p < 0.001$ ); and for the intentions variables, the 5-factor model fit the data significantly better ( $\Delta\chi^2[10] = 19,621.95, p < 0.001$ ). Thus, in all cases the discriminant validity of the latent factors was supported. We then used CFA to test, and ultimately support, the acceptable overall fit of a 12-factor measurement model ( $\chi^2 [2561] = 24,893.92, SRMR = 0.065, RMSEA = 0.057$  [90% CI of 0.057–0.058]). Taken together, our 12-factor measurement model fit the data well enough to move forward with our structural models (Hu and Bentler 1999; Marsh et al. 2004; Tabachnick and Fidell 2007).

### 3.3 Common Method Variance

While self-report data are arguably the best source of information when it comes to studying personal beliefs such as LOC, motivation, work passion, and work intentions, this information may be adversely affected by common method variance. This problem arises when the answers that individuals provide to survey questions are contaminated in some systemic way. For example, self-reported answers may be consistently exaggerated, respondents may be too embarrassed to reveal their true feelings, or individuals may suffer from one of the many forms of social desirability bias. As such, single-source data analysis that relies on correlations—such as the structural equation model examined here—should test for problematic common method variance, and, if necessary, statistically adjust the reported correlations.

Although first discussed in the 1980s (Kemery and Dunlap 1986; Podsakoff and Organ 1986; Podsakoff and Tudor 1985), in the last decade an impressive amount of work has been done to statistically control for common method variance. In particular, the correlation marker technique first popularized by Lindell and Whitney (2001) has within the last few years been significantly extended by the more robust comprehensive confirmatory factor analysis (CFA) marker technique of Williams et al. (2010).

In testing for the existence of common method variance, we used the Williams et al. (2010) technique, which first required the construction of a marker variable that was both theoretically and empirically unrelated to our model's substantive variables. We chose as our marker variable a combination of two measures—the order in which the survey was received and whether or not the respondent lived in North America (rather than the rest of the world). We then tested our marker variable in a series of five nested models that began with a CFA model ( $\chi^2 [2696] = 25,376.11, SRMR = 0.064, RMSEA = 0.056$  [90% CI of 0.056–0.057]) that allowed all variables to correlate and for which all parameters were freely estimated. This model was then followed by a baseline model ( $\chi^2 [2712] = 25,501.90, SRMR = 0.064, RMSEA = 0.056$  [90% CI of 0.056–0.057]), where the measurement parameters of the marker variable were fixed at non-zero values obtained from the initial model and the correlations between the marker variable and all other variables forced to zero.

The next two models (Method-C and Method-U) added the method factor loadings; in the case of the Method-C model the factors were constrained to be equal, while the method-U model allowed them to be freely estimated. Our Method-U model fit significantly better than the Method-C model ( $\Delta\chi^2 [73, N = 2654] = 2980, p < 0.001$ ). The final model, Method-R, was identical to our Method-U model, except the correlations among all latent variables were constrained to their baseline model values. Our Method-U model was superior to our Method-R model ( $\Delta\chi^2 [66, N = 2654] = 308, p < 0.001$ ), revealing that

the relationships in our model were not significantly biased by common method variance. To underscore this point, we calculated the median percentage of shared variance between our marker variable and each indicator and found that it was a manageable 11.8%.

### 3.4 Structural Models

Gender, age, years with the organization, years in current position, continental location of the organization, and manager/non-manager position were examined as control variables in the analyses; however, including them did not alter the interpretation of the final results. In other words, the overall model fit, the significance of the individual paths, and the sign/magnitude of the significant paths were consistent whether the control variables were included or not. Thus, for the sake of parsimony, only the analyses without the control variables are presented here.

Our hypothesized structural model specified a series of paths from the two LOC variables to the three motivation variables to the two passion variables, and, finally, from the passion variables to the five intention variables. In addition, the model also hypothesized direct paths between the LOC measures and the work passion variables; here we anticipated that motivation would only partially mediate the relationship between LOC and work passion. We used structural equation modeling to test this model and found that it fit the data reasonably well ( $\chi^2$  [2590] = 25,699.39, SRMR = 0.078, RMSEA = 0.058 [90% CI of 0.057–0.059]).

However, to evaluate the plausibility of our partial mediation hypothesis, we also ran a fully mediated model that eliminated the four direct paths from internal and external LOC to obsessive and harmonious work passion. Results of this competing structural model, shown in Table 3, suggested that dropping the four paths resulted in a significantly weaker model ( $\chi^2$  [2594] = 25,863.86, SRMR = 0.081, RMSEA = 0.058 [90% CI of 0.057–0.059];  $\Delta\chi^2$  [4] = 164.47,  $p < 0.001$ ). We also ran a structural model based on the results of our hypothesized partial mediation model, whereby all four non-significant paths (i.e., from external locus of control to harmonious passion, from controlled regulation to harmonious passion, from amotivation to harmonious passion, and from obsessive passion to intent to endorse) were dropped. This third model ( $\chi^2$  [2594] = 25,705.82, SRMR = 0.078, RMSEA = 0.058 [90% CI of 0.057–0.059]) did not fit the data significantly better than our partially mediated model ( $\Delta\chi^2$  [4] = 6.43,  $p > 0.05$ ). Therefore, our partially mediated model (Model 1) served as our final model. Significant indirect effects were found for internal LOC on harmonious ( $\beta = 0.318$ ,  $p < 0.05$ ) and obsessive ( $\beta = 0.236$ ,  $p < 0.05$ ) passion and for external LOC on harmonious ( $\beta = -0.104$ ,  $p < 0.05$ ) and obsessive ( $\beta = 0.039$ ,  $p < 0.05$ ) passion, and are presented in Table 4. Figure 2 illustrates our final model with associated standardized path coefficients.

### 3.5 Final Model Interpretation

Both LOC measures were significantly related to all three of our motivation variables at the  $p < 0.05$  level. Specifically, internal LOC was positively related to both controlled and autonomous regulation ( $\beta = 0.24$  and  $\beta = 0.44$ ) and negatively related to lack of motivation (amotivation with  $\beta = -0.10$ ), while external LOC was positively related to controlled regulation and amotivation ( $\beta = 0.30$  and  $\beta = 0.29$ ) and negatively related to autonomous regulation ( $\beta = -0.13$ ). Autonomous regulation was positively related to both harmonious and obsessive work passion ( $\beta = 0.73$  and  $\beta = 0.49$ ,  $ps < 0.05$ ), while controlled regulation and amotivation were positively related to obsessive work passion

**Table 3** Comparison of structural equation models

Model number	Model description	$\chi^2$	df	SRMR	RMSEA	$\Delta\chi^2$ Statistics (model for comparison)
0	Measurement model	24,893.92	2561	0.065	0.057	
1	Partial mediation model	25,699.39	2590	0.078	0.058	805.47, $df = 29$ , $p < 0.001$ (Model 0)
2	Complete mediation model	25,863.86	2594	0.081	0.058	164.47, $df = 4$ , $p < 0.001$ (Model 1)
3	Partial mediation model with all non-significant paths dropped	25,705.82	2594	0.078	0.058	6.43, $df = 4$ , $p > 0.05$ (Model 1)

*df* degrees of freedom, *SRMR* standardized root mean square residual, *RMSEA* root mean square error of approximation

( $\beta = 0.16$  and  $\beta = 0.18$ ,  $ps < 0.05$ ). Interestingly, both controlled regulation and amotivation were not significantly related to harmonious work passion.

An examination of the relationship between work passion and work intentions revealed that harmonious work passion was positively associated with all five work intentions variables at the  $p < 0.05$  level, with  $\beta$ s ranging from 0.40 for intent to use OCBs to a high of 0.56 for intent to endorse. Importantly, while four of the five work intentions were also significantly related to obsessive work passion, these relationships were clearly not as strong, with  $\beta$ s ranging from  $-0.10$  for intent to use OCBs to 0.16 for intent for discretionary effort. Taken together, this suggests a strong and positive relationship between harmonious work passion and work intentions, but a weaker and occasionally negative relationship between obsessive work passion and work intentions.

The final model also suggests that our motivation variables are best not treated as full mediators, but rather as partial mediators of the relationship between LOC and work passion. Three out of four partially mediated paths from LOC to work passion were significant; in particular, internal LOC was positively related to both harmonious and obsessive work passion ( $\beta = 0.22$  and  $\beta = 0.06$ ,  $ps < 0.05$ ), while external LOC was positively related only to obsessive work passion ( $\beta = 0.13$ ,  $p < 0.05$ ).

## 4 Discussion

While several path coefficients in the final model confirmed our hypotheses, interpretation of the full model substantiates and extends the EWPA model by presenting empirical evidence for the connections between employees' personal antecedents, cognitive judgment concerning motivational outlook, work passion, and work intentions.

First, reading Fig. 2 from left to right to examine relationships between our latent concepts, we found that internal LOC demonstrated a medium-to-strong relationship with autonomous regulation ( $\beta = 0.44$ ), and autonomous regulation showed a strong relationship with harmonious passion ( $\beta = 0.73$ ). Harmonious passion consistently revealed sizeable path coefficients with discretionary effort ( $\beta = 0.48$ ), intent to perform, ( $\beta = 0.50$ ), intent to endorse, ( $\beta = 0.56$ ), intent to stay, ( $\beta = 0.49$ ), and intent to use

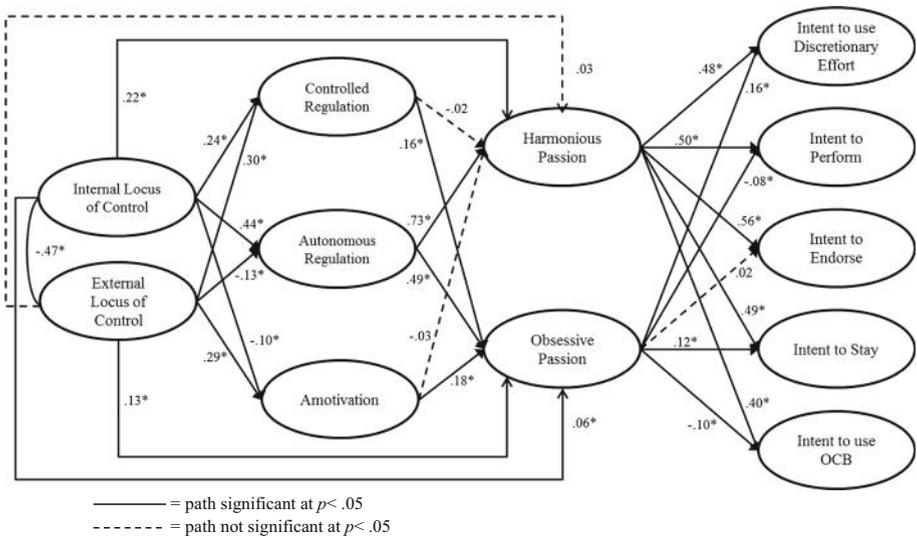
**Table 4** Indirect effects of LOC on harmonious and obsessive passion, through motivational regulation

Paths	Direct effect (IV to M)	Direct effect (M to DV)	Direct effect (IV to DV)	Indirect effect	Total effect	S.E.	95% Confidence interval
Internal LOC to harmonious passion, through					0.54		
Controlled regulation	0.239	-0.02		-0.004		0.004	-0.01, 0.002
Autonomous regulation	0.439	0.73		0.319		0.05	0.23, 0.41
Amotivation	-0.101	-0.03		0.003		0.002	-0.001, 0.008
Direct path from internal LOC to harmonious passion			0.22				
Internal LOC to obsessive passion, through					0.30		
Controlled regulation	0.239	0.16		0.039		0.01	0.02, 0.06
Autonomous regulation	0.439	0.49		0.215		0.03	0.15, 0.28
Amotivation	-0.101	0.18		-0.018		0.07	-0.16, 0.11
Direct path from internal LOC to obsessive passion			0.06				
External LOC to harmonious passion, through					-0.08		
Controlled regulation	0.301	-0.02		-0.005		0.004	-0.014, 0.003
Autonomous regulation	-0.125	0.73		-0.091		0.03	-0.14, -0.04
Amotivation	0.292	-0.03		-0.008		0.01	-0.02, 0.004
Direct path from external LOC to harmonious passion			0.03				
External LOC to obsessive passion, through					0.17		
Controlled regulation	0.301	0.16		0.049		0.01	0.03, 0.07
Autonomous regulation	-0.125	0.49		-0.061		0.02	-0.10, -0.03
Amotivation	0.292	0.18		0.051		0.01	0.03, 0.07
Direct path from external LOC to obsessive passion			0.13				

The Monte Carlo method was used to test mediation effects. All total indirect effects were significant at  $p < 0.05$

LOC locus of control, IV independent variable, M mediator, DV dependent variable, SE standard error

organizational citizenship behavior ( $\beta = 0.40$ ). Conceptually, from these findings we suggest that an individual's generalized belief that rewards emanate from (or are contingent upon) his/her own behavior, more than moderately relates to holding an identified or



**Fig. 2** Final model (model 1)

integrated (i.e., autonomous) motivational outlook. In other words, LOC and motivational outlook are both related to the degree to which individuals will be harmoniously passionate about their work and their level of intentions to contribute positively to their organizations.

A second conclusion, looking across Fig. 2 from left to right, is that external LOC was positively and moderately related to controlled regulation ( $\beta = 0.30$ ) and amotivation ( $\beta = 0.29$ ), neither of which were significantly related to harmonious passion, but rather showed weak-to-medium path coefficients with obsessive passion ( $\beta = 0.16$ ,  $\beta = 0.18$ , respectively). Relative to harmonious passion, obsessive passion demonstrated weaker positive relationships with intent to use discretionary effort ( $\beta = 0.16$ ) and intent to stay ( $\beta = 0.12$ ), weak negative correlations with intent to perform ( $\beta = -0.08$ ) and intent to be an organizational citizen ( $\beta = -0.10$ ), and a non-significant relationship with intent to endorse. Additionally, external LOC was negatively and weakly associated with autonomous regulation ( $\beta = -0.13$ ). Taken together, external LOC beliefs moderately relate to controlled regulation or an amotivational outlook (i.e., less than optimal motivation), both of which are moderately related to obsessive passion. This chain of relationships is not preferable in practice, as obsessive passion does not substantially connect with employees' intentions to contribute positively to their workplaces, but rather subdued intentions toward attaining desirable organizational outcomes.

Furthermore, the magnitude of the significant paths between internal/external work LOC and each type of work passion demonstrated small-to-medium direct effects; thereby underscoring that amotivation does not solely explain the impact of work LOC on harmonious and obsessive passion. Rather, internal LOC directly contributes somewhat to the experience of harmonious passion; this is also true for external LOC and obsessive passion.

Finally, it is important to note that autonomous regulation was also highly related to obsessive passion ( $\beta = 0.49$ ) although the relationship was not as high as that between autonomous regulation and harmonious passion ( $\beta = 0.73$ ). Given that obsessive passion is mildly associated with controlled regulation ( $\beta = 0.16$ ) and amotivation ( $\beta = 0.18$ ), as described earlier, it might seem counterintuitive that obsessive passion would be strongly

correlated with autonomous regulation because of the addictive or compulsive aspects of obsessive passion. However, we believe that this finding is commensurate with the theoretical possibilities outlined in the SDT literature.

Describing a theory of internalization, Ryan et al. (1983) propose that self-perceptions of the reasons for one's behavior are delineated along a continuum by which values and forms of regulation are adopted as one's own (Ryan et al. 1985). There is a "gradient of autonomy, from external to internal locus of causality on the basis of self-reported reasons for acting" (Ryan and Connell 1989, p. 759). At one end of the continuum, the internal locus of causality, the individual perceives the self as the origin of his/her behavior. At the other end, the external locus of causality, the individual views the self as pawn of various forces outside of self (Ryan and Connell 1989). In other words, "The more internalized the value or regulation, the more it is experienced as autonomous or subjectively located closer to the self" (Ryan and Connell 1989, p. 750). Ryan and Connell also suggest that some individuals have a stronger tendency "to experience events as a reason for initiating and regulating their own chosen behavior... regardless of the objective properties of the event" (p. 110). It is therefore possible that employees might consider themselves as autonomously deciding to be externally motivated (which could be the case with obsessive passion).

The second hypothesis for the correlation between autonomous regulation and obsessive passion arises from work of Vallerand (2015) in which he proposes that "two types of internalization processes, autonomous and controlled, lead, respectively to harmonious and obsessive passions" (p. 43). "Obsessive passion results from a controlled internalization of the activity into the person's identity" (Vallerand 2015, p. 64). This would also account for the possibility that an individual might "internalize," identify with, or take on as his/her own, the aspects of controlled regulation and not see other possible causes or motives behind his/her own behavior (Ryan and Connell 1989). For example, the general belief that "promotions are usually a matter of good fortune" (an external LOC belief) could be internalized, seen as a reason for one's actions, and experienced as an autonomous choice. Individuals willingly engage in actions that compel them, yet as a result, they are less intensely engaged in work outcomes and positive work behaviors that could ultimately have greater personal meaning. The extrinsic and introjected motivational outlooks have been internalized as their own and are, therefore, seen as autonomously chosen. As Ryan and Connell (1989) remind us, there is considerable distinction between reasons why individuals are willing to own their actions and the true causes or motives behind their behavior.

These findings contribute to the emerging call by researchers (Albrecht 2010; Meyer et al. 2010) to link engagement and passion studies in order to establish psychological theories which explain, rather than describe, findings presented in prior research. This study along with the antecedent study by Roberts and Zigarmi (2014) begins to respond to some existing research gaps, such as inquiry into how personal antecedents may influence different high-activity involvement concepts such as engagement and work passion. Both this study and Roberts and Zigarmi (2014) lend some insight into how certain personality variables (i.e., locus of control and cynicism, respectively) relate to human endeavors within an organizational work setting. We realize that the EWPA model has been shown to be only partially validated, which may be a bi-product of the model's complexity. Partial validation of the model may, for a while, remain the state of research on this topic. The EWPA model, as it is conceptualized broadly to refer to environmental/personal antecedents and other constructs in general, must be examined in pieces as it is tested;

otherwise research on the model could easily become overwhelming and reach beyond the scope of one study.

What can be learned from this study is that LOC and motivational outlooks are both related to the degree to which individuals will be harmoniously passionate about their work and to individuals' level of intentions to contribute positively to their organizations. We also believe there is a modest contribution made to the literature in that the study found empirical evidence of the relationship between personal antecedents, motivational outlooks as cognition, and the implications for harmonious and obsessive passion and work intentions.

## 5 Limitations and Future Research Directions

We believe that the conclusions discussed here represent important findings that should be replicated in future studies; however, the limitations in our work suggest certain avenues for subsequent research. For example, although our sample size was relatively large ( $n = 2654$ ) and we were able to statistically reject the hypothesis of common method variance, a handful of limitations in our study are worthy of note.

First, we used a cross-sectional sample that did not allow for conclusions regarding the order of causality, which would otherwise be possible with a longitudinal design. Instead, this study employed a convenience sample involving various clients of a consulting company and, as such, may not be generalizable to a broader population of organizations. Although a randomized controlled trial would have allowed us to establish the causal nature of the estimated relationships, workplace logistics made this impossible. Instead, we relied on the existing theoretical and empirical literature together with a large convenience sample to establish a strong correlation argument in support of our directionality hypothesis.

Second, from a selectivity bias perspective, one might hypothesize that the decision to participate in the survey may have been at least, in part, influenced by the desire of potential respondents to be good organizational citizens. Although we lacked the demographic information on non-respondents to explicitly model the participation decision, it is important to note that when we did incorporate participant demographics into our analysis, neither the magnitude nor strength of our estimated relationships changed at all, suggesting that at least among observable demographics the problem of self-selection was minimized.

Third, the study's theoretical model was tested solely through employee beliefs and perceptions. Although we believe employee self-report data to be the most reliable source from which to measure the experience of work passion and the psychological mechanisms accompanying it, coupling managerial self-report data with perceptions of employee LOC, motivation, and/or intentions could cross-validate the constructs measured and may allow for new theoretical insights in the future. Another future possibility—particularly for workplace research—is to examine a more complex concept of locus of control, using Levenson (1981), who distinguishes between two types of external orientation beliefs (i.e., chance control and powerful others control). Conducting a study with this multidimensional conception of locus of control could lend a deeper understanding of how two different externally oriented beliefs may relate to employees' motivational outlooks, passion, and intentions.

Subsequent research could also investigate whether or not the EWPA model holds across various global contexts by examining single organizations of different sizes,

industries, and countries. This type of work could provide rich information, for instance, about the nature of work passion both within and between individualistic and collectivist cultures. Another area for future study could involve testing work intentions of negative valence, such as intentions for counterproductive work behaviors or intentions to deviate from productivity norms. While we have seen very few research findings concerned with the EWPA framework used outside the domain work, we suggest that appraisal theory and associated research done thus far could be applied in other settings such as schools, sports teams, and nonprofit organizations.

Finally, alternative methodological approaches could be employed to delve more deeply into how the work passion appraisal process is experienced by employees on a day-to-day basis. For example, qualitative methods including interviews or diary studies may provide promising avenues to learn more about how employee LOC, motivation, work passion, and intention may or may not effectively contribute to desirable short- and long-term workplace outcomes.

In summary, this paper has shown significant empirical relationships with dispositional antecedent characteristics, i.e., locus of control, motivational regulation, work passion, and work intentions. It is commensurate with two other studies showing a relationship between cynicism and work intentions (Roberts and Zigarmi 2014) and basic psychological needs, work passion, and work intentions (Shuck et al. 2015). To date there has been only one study (Zigarmi et al. 2011) examining work environment characteristics as antecedents to work passion instead of personal characteristics. As more studies continue to be conducted on the EWPA model, a fruitful direction might be to include both personal antecedents and work environment antecedents in the same study.

#### Compliance with ethical standards

**Conflict of interest** The authors declare that they have no conflict of interest.

## References

- Ajzen, I., & Fishbein, M. (1980). *Understanding attitudes and predicting social behavior*. Englewood Cliffs: Prentice-Hall.
- Albrecht, S. L. (2010). *Handbook of employee engagement: perspectives, issues, research and practice*. Northampton: Edward Elgar Publishing Limited.
- Bagozzi, R. P. (1992). The self-regulation of attitudes, intentions, and behavior. *Social Psychology Quarterly*, 55, 178–204. doi:10.2307/2786945.
- Bing, M. N., Whanger, J. C., Davison, H. K., & VanHook, J. B. (2004). Incremental validity of the frame-of-reference effect impersonality scale scores: A replication and extension. *Journal of Applied Psychology*, 89, 150–157.
- Bonneville-Roussy, A., Vallerand, R. J., & Bouffard, T. (2013). The roles of autonomy support harmonious and obsessive passion in educational persistence. *Learning and Individual Differences*, 24, 22–31. doi:10.1016/j.lindif.2012.12.015.
- Chau, H., & Hocevar, D. (1995, April). *The effects of number of measured variables on goodness-of-fit in confirmatory factor analysis*. Paper presented at the annual conference of the American Educational Research Association, San Francisco.
- Curran, T., Hill, E. P., Appleton, P. R., Vallerand, R. J., & Standage, M. (2015). The psychology of passion: A meta-analytic review of a decade of research on intrapersonal outcomes. *Motivation and Emotion*, 39, 231–655. doi:10.1007/s11031-015-9503-0.
- Deci, E. L., & Ryan, R. M. (1985a). The general causality orientation scale: Self-determination and personality. *Journal of Research in Personality*, 19, 109–134.
- Deci, E. L., & Ryan, R. M. (1985b). *Intrinsic motivation and self-determination in human behavior*. New York: Plenum Press.

- Deci, E. L., & Ryan, R. M. (2002). *Handbook of self-determination research*. Rochester: University of Rochester Press.
- Deci, E. L., & Ryan, R. M. (2008). Facilitating optimal motivation and psychological well-being across life domains. *Canadian Psychology*, *49*, 14–23. doi:[10.1037/0708-5591.49.1.14](https://doi.org/10.1037/0708-5591.49.1.14).
- Deng, H., Guan, Y., Bond, M. H., Zhang, Z., & Hu, T. (2011). The interplay between social cynicism beliefs and person-organization fit on work-related attitudes among Chinese employees. *Journal of Applied Psychology*, *41*, 160–178.
- Diener, E., Suh, E. M., Lucas, R. E., & Smith, H. L. (1999). Subjective well-being: Three decades of progress. *Psychological Bulletin*, *125*, 276–302.
- Duffy, R. D., & Lent, R. W. (2009). Test of the social cognitive model of work satisfaction. *Journal of Vocational Behavior*, *75*, 212–223.
- Fan, X., Thompson, B., & Wang, L. (1999). Effects of sample size, estimation methods, and model specification on structural equation modeling fit indexes. *Structural Equation Modeling: A Multidisciplinary Journal*, *6*, 56–83.
- Ferguson, E. (1993). Rotter's locus of control scale: A 10 item 2 factor model. *Psychological Reports*, *73*, 1267–1278.
- Folkman, S. (1984). Personal control and stress and coping processes: A theoretical analysis. *Journal of Personality and Social Psychology*, *46*, 839–852.
- Forest, J., Mageau, G. A., Sarrazin, C., & Morin, E. M. (2011). “Work is my passion”: The different affective, behavioral, and cognitive consequences of harmonious and obsessive passion toward work. *Canadian Journal of Administrative Sciences*, *28*, 27–40. doi:[10.1002/CJAS.170](https://doi.org/10.1002/CJAS.170).
- Fugate, M., Harrison, S., & Kinicki, A. J. (2011). Thoughts and feelings about organizational change: A field test of appraisal theory. *Journal of Leadership & Organizational Studies*, *18*, 421–437. doi:[10.1177/1548051811416510](https://doi.org/10.1177/1548051811416510).
- Furnham, A., & Steele, H. (1993). Measuring locus of control: A critique of general, children's, health- and work-related locus of control questionnaires. *British Journal of Psychology*, *84*, 443–479.
- Gagne, M., & Deci, E. L. (2005). Self-determination theory and work motivation. *Journal of Organizational Behavior*, *26*, 331–362. doi:[10.1002/job.322](https://doi.org/10.1002/job.322).
- Gagne, M., Forest, J., Gilbert, M.-H., Aube, C., Morin, E., & Malorni, A. (2010). The Motivation at Work Scale: Validation evidence in two languages. *Educational and Psychological Measurement*, *70*, 628–646. doi:[10.1177/0013164409355698](https://doi.org/10.1177/0013164409355698).
- Gousse-Lessard, A. S., Vallerand, R. J., Carbonneau, N., & Lafreniere, M. K. (2013). The role of passion in mainstream and radical behaviors: A look at environmental activism. *Journal of Environmental Psychology*, *35*, 18–29. doi:[10.1016/j.jenvp.2013.03.003](https://doi.org/10.1016/j.jenvp.2013.03.003).
- Grebner, S., Semmer, K., & Elfering, A. (2005). Working conditions and three types of well-being: A longitudinal study with self-report and rating data. *Journal of Occupational Health Psychology*, *10*(1), 31–43. doi:[10.1037/1076-8998.10.1.31](https://doi.org/10.1037/1076-8998.10.1.31).
- Heckhausen, H., & Beckmann, J. (1990). Intentional action and action slips. *Psychological Review*, *97*, 36–48.
- Ho, V. T., Wong, S., & Lee, C. H. (2011). A tale of passion: Linking job passion and cognitive engagement to employee work performance. *Journal of Management Studies*, *48*, 26–47. doi:[10.1111/j.1467-6486.2009.00878.x](https://doi.org/10.1111/j.1467-6486.2009.00878.x).
- Holtz, B. C., Ployhart, R. E., & Dominguez, A. (2005). Testing the rules of justice: The effects of frame-of-reference and pre-test validity information on personality test responses and test perceptions. *International Journal of Selection and Assessment*, *13*, 75–86.
- Hu, L., & Bentler, P. M. (1998). Fit indices in covariance structure modeling: Sensitivity to under parameterized model misspecification. *Psychological Methods*, *3*, 424–453.
- Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, *6*, 1–55.
- Hu, L., Bentler, P. M., & Kano, Y. (1992). Can test statistics in covariance structure analysis be trusted? *Psychological Bulletin*, *112*, 351–362.
- James, L. A., & James, L. R. (1989). Integrating work environment perceptions: explorations into the measurement of learning. *Journal of Applied Psychology*, *74*, 739–751.
- Kemery, E. R., & Dunlap, W. P. (1986). Partialling factor scores does not control method variance: A reply to Podsakoff and Tudor. *Journal of Management*, *12*, 525–544.
- Kenny, D. A., & McCoach, D. B. (2003). Effect on the number of variables on measures of fit in structural equation modeling. *Structural Equation Modeling: A Multidisciplinary Journal*, *10*, 333–351.
- Kormanik, M. B., & Rocco, T. S. (2009). Internal versus external control of reinforcement: A review of the locus of construct. *Human Resource Development Review*, *8*, 463–483. doi:[10.1177/1534484309342080](https://doi.org/10.1177/1534484309342080).

- Kristof-Brown, A. L., Zimmerman, R. D., & Johnson, E. C. (2005). Consequences of individuals fit at work: A meta-analysis of person-job, person-organization, person-group, and person-supervisor fit. *Personnel Psychology, 58*, 281–342. doi:[10.1111/j.1744-6570.2005.00672.x](https://doi.org/10.1111/j.1744-6570.2005.00672.x).
- Lazarus, R. S. (1982). Thoughts on the relations between emotion and cognition. *American Psychologist, 37*, 1019–1024.
- Lazarus, R. S. (1991a). Cognition and motivation in emotion. *American Psychologist, 46*, 352–367.
- Lazarus, R. S. (1991b). *Emotion and adaptation*. New York: Oxford University Press.
- Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, coping*. New York: Springer.
- Lent, R. W. (2004). Toward a unifying theoretical and practical perspective on well-being and psychological adjustment. *Journal of Counseling Psychology, 51*, 42–509.
- Leung, K., Bond, M. H., de Carrasquel, S. R., Munoz, C., Hernandez, M., Murakami, F., et al. (2002). Social axioms: The search for universal dimensions of general beliefs about how the world functions. *Journal of Cross-Cultural Psychology, 33*, 286–302. doi:[10.1177/0022022102033003005](https://doi.org/10.1177/0022022102033003005).
- Levenson, H. (1981). Differentiating among internality, powerful others, and chance. In H. Lefcourt (Ed.), *Research with the locus of control construct* (Vol. 1, pp. 15–63). New York: Academic Press.
- Lindell, M. K., & Whitney, D. J. (2001). Accounting for common method variance in cross-sectional research designs. *Journal of Applied Psychology, 86*, 114–121.
- Lord, R. G., & Kernan, M. C. (1987). Scripts as determinants of goal commitment. *Academy of Management Review, 12*, 265–277.
- Mageau, G. A., Vallerand, R. J., Rousseau, F. L., Ratelle, C. F., & Provencher, P. J. (2005). Passion and gambling: Investigating the divergent affective and cognitive consequences of gambling. *Journal of Applied Social Psychology, 35*, 100–118.
- Markus, H. (1997). Self-schema and processing information about self. *Journal of Personality and Social Psychology, 35*, 63–78.
- Marsh, H. W., Hau, K., & Wen, Z. (2004). In search of golden rules: Comment on hypothesis testing approaches to setting cutoff values for fit indexes and dangers in over generalizing Hu and Bentler's (1999) findings. *Structural Equation Modeling: A Multidisciplinary Journal, 11*, 320–341.
- McMahan, E. A., & Estes, D. (2011). Measuring lay concepts of well-being: The beliefs about well-being scale. *Journal of Happiness Studies, 12*, 267–287. doi:[10.1007/s10902-010-9194-x](https://doi.org/10.1007/s10902-010-9194-x).
- Meyer, J. D., Gagne, M., & Parfyonova, N. M. (2010). Toward an evidence-based model of engagement: What we can learn from motivation and commitment research. In S. Albrecht (Ed.), *Handbook of employee engagement: Perspectives, issues, research and practice* (pp. 62–73). Northampton: Edward Elgar.
- Ng, T. W. H., Sorensen, K. L., & Eby, L. T. (2006). Locus of control at work: A meta-analysis. *Journal of Organizational Behavior, 27*, 1057–1087. doi:[10.1002/job.416](https://doi.org/10.1002/job.416).
- Oliver, J. E., Jose, P. E., & Brough, P. (2006). Confirmatory factor analysis of the work locus of control scale. *Educational and Psychological Measurement, 66*, 835–851. doi:[10.1177/0013164405285544](https://doi.org/10.1177/0013164405285544).
- Page, K. M., & Velle-Brodrick, D. Eight. (2009). The 'What', 'Why' and 'How' of employee well-being: A model. *Social Indicators Research, 90*, 441–458. doi:[10.1007/s11205-008-9270-3](https://doi.org/10.1007/s11205-008-9270-3).
- Philippe, F. L., Vallerand, R. J., & Lavigne, G. L. (2009). Passion does make a difference in people's lives: A look at well-being in passionate and non-passionate individuals. *Applied Psychology: Health and Well-Being, 1*, 3–22. doi:[10.1111/j.1758-0854.2008.01003.x](https://doi.org/10.1111/j.1758-0854.2008.01003.x).
- Podsakoff, P. M., & Organ, D. W. (1986). Self-reports in organizational research: Problems and prospects. *Journal of Management, 12*, 531–544.
- Podsakoff, P. M., & Tudor, W. D. (1985). Relationships between leader reward and punishment behavior and group processes and productivity. *Journal of Management, 11*, 55–73.
- Roberts, T. P., & Zigarmi, D. (2014). The impact of dispositional cynicism on job-specific affect and work intentions. *International Journal of Psychology, 49*, 381–389. doi:[10.1002/ijop.12051](https://doi.org/10.1002/ijop.12051).
- Rotter, J. B. (1966). Generalized expectancies for internal versus external control of reinforcement. *Psychological Monographs: General and Applied, 80*, 1–28.
- Rousseau, F. L., Vallerand, R. J., Ratelle, C. F., Mageau, G. A., & Provencher, T. J. (2002). Passion and gambling: On the validation of the gambling passion scale (GPS). *Journal of Gambling Studies, 18*, 45–66.
- Ryan, R. M., Chandler, C., Connell, J. K., & Deci, E. L. (1983, April). *Internalization and motivation: Some preliminary research and theoretical speculations*. Paper presented at the annual meeting of the Society of Research in Child Development, Detroit, MI.
- Ryan, R. M., & Connell, J. P. (1989). Perceived locus of causality and internalization: Examining reasons for acting in two domains. *Journal of Personality and Social Psychology, 57*, 749–761.

- Ryan, R. M., Connell, J. P., & Deci, E. L. (1985). A motivational analysis of self-determination and self-regulation in education. In C. Ames & R. E. Ames (Eds.), *Research on motivation and education: The classroom milieu* (pp. 13–51). New York: Academic Press.
- Ryan, M. R., & Deci, E. L. (2000). Self-determination theory and the facilitation of extrinsic motivation, social development, and well-being. *American Psychologist*, *55*, 68–78. doi:[10.1037//0003-066X.55.1.68](https://doi.org/10.1037//0003-066X.55.1.68).
- Ryff, C. D. (1989). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology*, *57*, 1069–1081.
- Ryon, H. S., & Gleason, M. E. J. (2014). The role of locus of control in daily life. *Personality and Social Psychology Bulletin*, *40*, 121–131. doi:[10.1177/0146167213507080](https://doi.org/10.1177/0146167213507080).
- Schaufeli, W. B., Taris, T. W., & van Rhenen, W. (2008). Workaholism, burnout, and work engagement: Three of a kind or three different kinds of employee well-being? *Applied Psychology: An International Review*, *57*(2), 173–203. doi:[10.1111/j.1464-0597.2007.00285.x](https://doi.org/10.1111/j.1464-0597.2007.00285.x).
- Schimmack, U., Schupp, J., & Wagner, G. G. (2008). The influence of environment and personality on the affective and cognitive component of subjective well-being. *Social Indicator Research*, *89*, 41–60. doi:[10.1007/s11205-007-9230-3](https://doi.org/10.1007/s11205-007-9230-3).
- Séguin-Lévesque, C., Laliberté, M. L., Pelletier, L. G., Blanchard, C., & Vallerand, R. J. (2003). Harmonious and obsessive passion for the Internet: Their associations with couples' relationships. *Journal of Applied Social Psychology*, *33*, 197–221. doi:[10.1111/j.1559-1816.2003.tb02079.x](https://doi.org/10.1111/j.1559-1816.2003.tb02079.x).
- Shaffer, J. A., & Postlethwaite, D. E. (2012). A matter of context: A meta-analytic investigation of the relative validity of contextualized and non-contextualized personality measures. *Personnel Psychology*, *65*, 245–294.
- Sheeran, P., Webb, T. L., & Gollwitzer, P. M. (2005). The interplay between goal intentions and implementation intentions. *Personality and Social Psychology Bulletin*, *31*, 87–98. doi:[10.1177/0146167204271308](https://doi.org/10.1177/0146167204271308).
- Shuck, B., Ghosh, R., Zigarmi, D., & Nimon, K. (2013). The jingle jangle of employee engagement: Further exploration of the emerging construct and implications for workplace learning and performance. *Human Resource Development Review*, *12*, 11–35. doi:[10.1177/1534484312463921](https://doi.org/10.1177/1534484312463921).
- Shuck, B., Zigarmi, D., & Owen, J. (2015). Psychological needs, engagement, and work intentions: A Bayesian multi-measurement mediation approach and implications for HRD. *European Journal of Training and Development*, *39*(1), 2–21. doi:[10.1108/ETD-08-2014-0061](https://doi.org/10.1108/ETD-08-2014-0061).
- Spector, P. E. (1982). Behavior in organizations as a function of employee locus of control. *Psychological Bulletin*, *91*(3), 482–497.
- Spector, P. E. (1988). Development of the work locus of control scale. *Journal of Operational Psychology*, *61*, 335–340.
- Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics* (5th ed.). Boston, MA: Pearson.
- Tzeng, O. C. (1975). Differentiation of affective and denotative meaning systems and their influence on personality ratings. *Journal of Personality and Social Psychology*, *32*, 978–988.
- Vallerand, R. J. (2000). Deci and Ryan's self-determination theory: A view from the hierarchical model of intrinsic and extrinsic motivation. *Psychological Inquiry*, *11*, 312–318.
- Vallerand, R. J. (2008). On the psychology of passion: In search of what makes people's lives most worth living. *Canadian Psychology*, *49*, 1–13. doi:[10.1037/0708-5591.49.1](https://doi.org/10.1037/0708-5591.49.1).
- Vallerand, R. J. (2015). *The psychology of passion: A dualistic model*. New York: Oxford University Press.
- Vallerand, R. J., & Bissonnette, R. (1992). Intrinsic, extrinsic, and amotivational styles as predictors of behavior: A prospective study. *Journal of Personality*, *60*, 599–620. doi:[10.1111/1467-6494.ep9209210978](https://doi.org/10.1111/1467-6494.ep9209210978).
- Vallerand, R. J., Blanchard, C., Mageau, G. A., Koestner, R., Ratelle, C., Leonard, M., et al. (2003). Les Passions de l'âme: On obsessive and harmonious passion. *Journal of Personality and Social Psychology*, *85*, 756–767. doi:[10.1037/0022-3514.85.4.756](https://doi.org/10.1037/0022-3514.85.4.756).
- Vallerand, R. J., Houffort, N., & Forest, J. (2014). Passion for work: Determinants and outcomes. In M. Gagne (Ed.), *The Oxford handbook of work engagement, motivation, and self-determination theory* (pp. 85–105). New York: Oxford University Press.
- Wang, Q., Bowling, N. A., & Eschleman, K. J. (2010). A meta-analytic examination of work and general locus of control. *Journal of Applied Psychology*, *95*, 761–768. doi:[10.1037/a0017707](https://doi.org/10.1037/a0017707).
- Williams, L. J., Hartman, N., & Cavazotte, F. (2010). Method variance and marker variables: A review and comprehensive CFA marker technique. *Organizational Research Methods*, *13*, 477–514. doi:[10.1177/1094428110366036](https://doi.org/10.1177/1094428110366036).
- Wofford, J. C., & Goodwin, V. Al. (1990). Effects of feedback a cognitive processing and choice of decision style. *Journal of Applied Psychology*, *75*, 603–612.
- Wofford, J. C., Goodwin, V. Al., & Whittington, J. Al. (1998). *A field study of a cognitive approach to understanding transformational and transactional leadership* (pp. 55–84). Nine: Leadership Quarterly.

- Zigarmi, D., & Nimon, K. (2011). A cognitive approach to work intention: The stuff that employee work passion is made of? *Advances in Developing Human Resources*, *13*, 447–461. doi:[10.1177/1523422311431152](https://doi.org/10.1177/1523422311431152).
- Zigarmi, D., Nimon, K., Houson, D., Witt, D., & Diehl, J. (2009). Beyond engagement: Toward a framework and operational definition of employee work passion. *Human Resource Development Journal*, *8*, 300–326. doi:[10.1177/1534484309338171](https://doi.org/10.1177/1534484309338171).
- Zigarmi, D., Nimon, K., Houson, D., Witt, D., & Diehl, J. (2011). A preliminary field test of an employee work passion model. *Human Resource Development Quarterly*, *22*, 195–221. doi:[10.1002/hrdq.20076](https://doi.org/10.1002/hrdq.20076).
- Zigarmi, D., Nimon, K., Houson, D., Witt, D., & Diehl, J. (2012). The work intention inventory: Initial evidence of construct validity. *Journal of Business Administration Research*, *1*, 24–42. doi:[10.5430/jbar.v1n1p24](https://doi.org/10.5430/jbar.v1n1p24).