



Worker Well-Being and Quit Intentions: Is Measuring Job Satisfaction Enough?

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Abstract

The links between worker well-being and quit intentions have been well researched. However, the vast majority of extant studies use just one measure, job satisfaction, to proxy for worker well-being as a whole, thus ignoring its documented multidimensionality. This paper examines whether this approach is justified. Using novel survey data, I compare the extent to which alternative well-being indicators (job satisfaction, affect, engagement and the satisfaction of basic psychological needs) individually, and jointly, explain variation in the quit intentions of 994 full-time workers. I find systematic differences in the personal and well-being profiles of workers who intend quitting and those who do not. Furthermore, well-being indicators explain four to nine times more variation in quit intentions than wages and hours combined. The engagement measure performs best, explaining 22.5% of variation in quit intentions. Employing a composite model (job satisfaction + affect + engagement) significantly increases explanatory power. My results suggest that the standard single-item job satisfaction measure may be good enough for organisations who merely wish to identify categories of workers who may be most at risk of quitting. For organisations seeking to develop proactive quit prevention strategies however, supplementing job satisfaction with other indicators such as engagement should increase explanatory power and yield valuable, potentially actionable, insights.

Keywords Voluntary turnover · Quit intentions · Worker well-being · Job satisfaction · Engagement

JEL Classification I31 · J280 · J220 · J260 · M5

1 Introduction

The long-term success of organisations relies on their ability to attract and retain high-quality labour. Voluntary turnover (VT), or “*a worker’s conscious and deliberate willfulness to leave the organisation*” (Tett & Meyer, 1993, p. 262), disrupts this capacity, erodes valuable social capital (Chung et al., 2022) and can adversely impact

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those left behind (Laulié & Morgeson, 2021).¹ While VT is not necessarily negative, ‘dysfunctional turnover’, or the failure to retain highly-valued workers (Zivkovic et al., 2020), is incompatible with long-term profit maximisation (Heavey et al., 2013). The cost of replacing a UK worker on the average salary of £27,000 is estimated at £12,000, with senior employees costing considerably more (Wright-Whyte, 2019).

VT is nonetheless pervasive, with the UK workforce 1-year-retention rate averaging just 81% (ONS, 2019). In the US, 27% of workers voluntarily quit in 2018, at a cost of \$617 billion (Work Institute, 2019). 77% of these quits were deemed ‘avoidable’, or within the employer’s control (Bakar et al., 2021). COVID-19 has exacerbated an already problematic situation, triggering a ‘Great Resignation’ (Klotz, 2021) of employees in search of a better work-life balance. US monthly resignation rates peaked at 4.3 million (2.9% of the workforce) in August 2021 (BLS, 2021). A 2022 PWC survey of 52,000 workers in 44 countries (Ellerbeck, 2022), revealed that 20% of surveyed workers were planning to quit their jobs. While pay was the main factor cited by those who were considering switching jobs (71%), job fulfilment (69%) and the ability to be oneself at work (66%) were ranked 2nd and 3rd respectively.

Given the prevalence and high costs of dysfunctional VT, the question of why workers quit continues to attract considerable research attention (e.g., Hom et al., 2017; Rubenstein et al., 2018). While quit rate data are useful for identifying a dysfunctional VT problem, they are limited to the extent that they are obtained ‘after-the-fact’, in that they describe an event which has already occurred. Quitting can be construed as the end-point of a gradual withdrawal process (Hulin, 1991). If the aim is to prevent quits, then it is crucial to identify potential quitters at an earlier stage of this process. The majority of VT process models (e.g., Hom and Griffeth’s expanded model, Hom & Griffeth, 1995) are informed by the Theory of Planned Behaviour (TPB; Ajzen, 1985, 1991), which posits that behavioural intentions are the best predictor of actual behaviour. TPB-grounded VT models position quit intentions (QI) (motivation) as the most proximal and accurate antecedent of VT, through which subjective norms about quitting, perceived behavioural control (ability to quit) and all other antecedents (e.g. attitudes towards the job; personal characteristics) are mediated (Peltokorpi et al., 2023; Van Breukelen et al., 2004).

Focusing on QI is also advantageous for the reasons outlined in Nicholson et al. (1977). Firstly, QI are a useful indicator of work-related discontent which can serve as a valuable early-warning signal that organisations may need to put in place measures to prevent a potential quit problem. Secondly, investigating QI focuses attention on the attitudinal components of VT. QI represent an individual’s motivation to stay or quit (Cotton & Tuttle, 1986), information which is critical for understanding the types of workers who quit, and why. This data is arguably more important than overall quit rate data for organisations who are seeking to take remedial or preventative action. Thirdly, using QI as the dependent variable avoids many of the ‘accidental’ reasons for VT which lie outside of an organisation’s control (e.g., moving house). QI are also a good measure of psychological or emotional withdrawal when actually quitting may not be an option due to high unemployment etc. (Lee et al., 2008). Finally, while QI merit study in their own right for the reasons outlined above, they also have strong theoretical (Mobley et al, 1979; Hom & Kinicki, 2001) and empirical (Cho & Lewis, 2012; Cohen et al., 2016; Harrison et al.,

¹ Turnover Event Theory (Laulié and Morgeson, 2021) posits that stayers may attribute responsibility for VT to the organisation, or may perceive that leavers were treated unfairly, which in turn reduces trust and creates psychological uncertainty.

2006; Nguyen et al., 2022; Steele & Ovalle, 1984; Van Breukelen et al., 2004) links with VT.²

The primary purpose of this study is to identify factors that may predict QI formation. While early research in economics focused on wages, hours and personal/work-related characteristics, extant research shows that the effect sizes associated with these factors are typically low to moderate (see Griffeth et al., 2000). Focus has thus switched to the role of non-monetary aspects of the job that influence how workers evaluate and experience working life (Akerlof et al., 1988; Lazear & Shaw, 2007). Collectively these attitudinal factors comprise ‘work utility’ and are typically captured through the latent umbrella construct of worker well-being (WWB). Labour economists typically rely on just one WWB dimension, job satisfaction (JS), to proxy for WWB as a whole. Within the VT literature, JS has also traditionally been used to proxy for ‘job quality’, defined by Clark (2015) as the conditions encountered at work, and the perceived and actual impact of work in terms of enhancing or diminishing WWB.

Organisations rely heavily on employee surveys to gauge how their workers feel about their jobs (Wiles, 2018). The fact that JS measures are both widely-used and demonstrably reliable predictors of QI, raises questions as to the research merit of investigating whether organisations should consider replacing or augmenting JS with other WWB measures in surveys aimed at identifying potential quitters. WWB is, however, incontrovertibly a complex, multidimensional construct that extends far beyond JS (Bryson et al., 2014). Relying solely on JS thus constitutes a missed opportunity for organisations to obtain valuable insights into the role that other aspects of the work experience, e.g., work meaningfulness, may play in shaping QI. To date, there has been little empirical examination of the extent to which the proxying role of JS is justified. This work is necessary to establish whether WWB constructs which are conceptually distinct are also empirically distinct (correlation of < 1; Harter & Schmidt, 2008) with regard to predicting workers’ QI. The current study addresses this gap.

I build on the earlier work of Green (2010) by providing a simple validation test of WWB indices which are used in organisational psychology in order to examine whether they might be suitable for labour market VT research. However, I extend the scope of Green’s investigation by comparing the predictive power of JS not just to that of affect, but also to that of engagement and basic psychological needs satisfaction indicators. In doing so, I address several open questions around the best way to conceptualise WWB in QI functions. If the decision to quit is, as Green (2010) suggests, primarily an evaluative one, then the current reliance on JS may be justified. If, however, QI formation is strongly predicted by affective or psychosocial measures, then it may behove organisations to expand their conceptualisation of WWB and employ additional measures. My primary contribution is to assess the extent to which doing so could potentially afford organisations

² Stated intentions are good predictors of end behaviour (e.g., Tett & Meyer 1993). Numerous studies testify to the predictive power of QI in relation to quits although the strength of this relationship is contested. For example Nguyen et al. (2022) find that, even after controlling for teacher and school characteristics, teachers who indicate they intend to leave are 26.9 percentage points more likely to leave the profession relative to teachers who indicate otherwise. They conclude that QI are distinct, but strongly related to, VT. The most recent meta-analysis of QI (Rubenstein et al., 2018) confirmed earlier evidence (Steel & Ovalle, 1984) that QI have the strongest correlation with VT of any factor analysed ($\rho=0.56$). However, as Peltokeppi et al. (2023) point out, while QI are the strongest predictor of VT, many workers choose to stay in jobs they would like to leave for various reasons including career inaction (Verbruggen & deVos, 2020).

a ‘head start’ in identifying potential quitters. I use novel survey data to compare, for the first time, the ‘head-to-head’ performance of hedonic well-being (HWB) (JS and affect) and eudemonic well-being (EWB) (engagement and basic psychological needs satisfaction) indicators in relation to explaining QI variation.

While there is some evidence that JS may have greater predictive power than affect, when global, or summative (e.g., ‘over the past month’), WWB questions are used to predict VT (Green, 2010), it remains untested whether this is still the case when experiential, or in viva, measures of affect are employed. As Affleck et al. (1999) point out, relationships between constructs measured at different levels of analysis may represent different psychological processes. Kahneman and Riis (2005 p. 285) characterise humans as having “two selves”—“the remembering, evaluating self” and “the experiencing self”. While the two are correlated, in that an individual’s current affective state will affect her subjective evaluations and vice versa, they are conceptually and empirically distinct.³ They argue that comprehensive SWB studies should therefore endeavour to capture both aspects separately using global (evaluative) and experiential (experiencing) measures, particularly if the two SWB conceptualisations have different consequences for decision making in a particular context. As far as QI formation is concerned, this remains an open question. This study contributes uniquely to the SWB measurement literature by including, for the first time, global and experiential measures of JS, affect and basic psychological needs satisfaction within one survey, thus enabling their relative predictive power in relation to QI to be directly compared.

My final contribution is to investigate heterogeneity in QI amongst categories of workers. As Pratt et al. (2022) point out, not all VT is dysfunctional. They argue that extant research highlights the need for organisations to focus on VT composition as much as on raw VT rates, given the demonstrated impact of ‘talent density’ (the percentage of high performers in the workforce) on organisational performance (Hastings & Meyer, 2020). Identifying categories of potential quitters also has important HR policy implications.⁴ The current study contributes to this effort by identifying systematic differences in the personal/work-related and WWB profiles of potential quitters and stayers, and by testing whether particular WWB indicators might be better suited to identifying QI amongst ‘target’ groups of workers that organisations might be particularly keen to retain e.g., high performers, new recruits etc.

I address four research questions in this study, all of which have important implications for organisations seeking to identify and prevent dysfunctional VT. Firstly, does JS outperform other WWB indicators in terms of predicting QI? Secondly, is explanatory power improved by using multiple WWB measures? Thirdly, do global WWB measures perform better than experiential measures in terms of predicting QI? Fourthly, is there any evidence of heterogeneity in the profiles of potential quitters and stayers and / or in the ability of WWB indicators to predict the QI of women, graduates, high-performers, recent hires or senior workers?

³ E.g., Kahneman and Riis (2005) report a moderate positive correlation between global and experiential affective measures of $r=0.38$.

⁴ For example, Martin et al. (2021) show that the use of motivation-enhancing HR practices (e.g., training; teamwork) induces a larger retention effect for highly employable younger and middle-aged employees than for older ones, whereas the QI effects of flexibility-enhancing HR practices (e.g., flexible hours; work-life balance practices) are stronger for the highly employable middle-age and older groups than for the younger groups.

The remainder of the paper is organised as follows. Section 2 provides an overview of the conceptual frameworks which inform this paper and reviews the relevant extant WWB and QI literatures. Section 3 describes the data. Section 4 sets out the empirical framework. Section 5 describes the results. Section 6 outlines the robustness checks. Section 7 discusses the results and concludes.

2 Conceptual Framework and Literature Review

2.1 Quit Intentions (QI) and Voluntary Turnover (VT)

QI/VT research has traditionally been dominated by two perspectives, the ‘economic/labour market school’ and the ‘psychological school’ (Morrell et al., 2001). The labour market school has traditionally emphasised the role of externally determined macro-level variables in shaping QI, focusing on topics such as job search, job and wage mobility and person-job matching (e.g., Fehr & Schneider, 2004). The psychological school, on the other hand, has typically focused on identifying and predicting micro-level drivers of the quit decision such as organisational commitment, job involvement, organisational climate, affect and JS. In recent years however, this division has been eroded through a growing focus on the part of labour market school researchers on the role of expected utility in predicting QI/VT. QI are characterised as a function of decision utility, which in turn, is inferred from, and is used to explain, observed choices (Kahneman & Riis, 2005) such as the decision to quit. Decision utility acts as a ‘utility signal’ at the decision-making point (Berridge & O’Doherty, 2014, p. 336). It is determined through an evaluative process, usually proxied by JS scores, in which workers retrospectively rate their overall work experiences over an extended period (‘remembered utility’) and assess their expected future experiences (‘predicted utility’) (Kahneman et al., 1997; Lévy-Garboua et al., 2007).

Early research into the drivers of decision utility focused on monetary ‘pecuniary factors’ (salary, bonus etc.) and personal characteristics. Effect sizes are however generally small,⁵ resulting in increased interest in the role of ‘non-pecuniary factors’ such as work relationships; supervision; type of work; and whether workers enjoy and feel positively challenged by their jobs (Akerlof et al., 1988; Lazear & Shaw, 2007). These factors are typically subsumed under the broad heading of WWB, a latent, and highly subjective construct, which captures the extent to which individuals believe that they have a ‘good working life’, as defined by them. WWB is a ‘sub-utility function’ that captures workers’ subjective evaluations of their jobs and the utility received from all aspects of those jobs (Clark, 1997, p. 191; Clark & Oswald, 1994). It reflects workers’ “*post-decisional preference*” for their current job (Lévy-Garboua et al., 2007, p. 252), with workers sorting out of jobs that

⁵ Griffeth et al. (2000) and Rubenstein et al. (2018) report average correlations of -0.11 and -0.17 between pay and QI. Younger, highly educated, male employees are more likely to intend to quit than older, less educated, female employees (McCarthy et al., 2020; Grissom et al., 2016). Personality may also shape quit intentions (Woo et al., 2016). For example, Woo (2011) finds a positive association between Big-5 openness and frequent job switching. Workers with longer tenure exhibit reduced quit intention tendencies (Pelkotorpi et al., 2022; Rubenstein et al., 2018). However, seniority and higher levels of experience are generally positively associated with quit intentions (e.g., McCarthy et al., 2020; Ng & Feldman, 2009). High performers are at higher risk of VT (Lee et al., 2008) due to higher levels of self-efficacy and greater perceived external opportunities (see Pratt et al., 2022).

are perceived to drain utility (Blanchflower & Oswald, 1999). The issue remains, however, of how to capture (unobserved) WWB within the utility function.

With a few exceptions (e.g., Green, 2010; Nikolova & Cnossen, 2020), labour economists tend to rely exclusively on JS. This is usually measured by asking workers to rate their level of overall JS using a 0–10 scale (Diener et al, 1985). Dissatisfied workers are assumed to assign a lower present value to their current jobs, resulting in a higher propensity to form QI. QI thus represent a mental representation of, and an action plan to realise, a desired future (Shuck et al., 2015). This approach of using JS to proxy for WWB as a whole has also dominated VT research for the past 30 years in the form of process models (e.g., Hom & Kinicki, 2001; Judge et al., 2017; Lee & Mitchell, 1994; Steers & Mowday, 1981). VT is characterised as a process of gradual physical and psychological withdrawal (Lewis, 2019), which may be preceded by other indicators such as absenteeism, diminished performance etc. (Hulin, 1991; Sablinski et al., 2002). Process models draw heavily on the TPB (Ajzen, 1985, 1991) which posits that behavioural intentions are the best predictors of behaviour. QI (or their variant, ‘withdrawal cognitions’, Hom & Griffeth, 1991) are the most proximal and strongest VT antecedent (Hom et al., 2017). The majority of VT models, including the most dominant, Hom and Griffeth’s Expanded Model (1995; Hom & Kinicki, 2001), seek to determine the ‘intermediate linkages’ between job attitudes (JS) and voluntary quits (Davis et al., 2015; Hom et al., 2017), with JS viewed to be a necessary condition for QI formation.

JS measures have been shown to be relatively stable and to correlate highly with enduring job circumstances (Helliwell & Putnam, 2004), rendering them effective at capturing longer-term evaluations of working life. JS has also been revealed to have high predictive power in relation to QI (Lambert & Paoline., 2010; Ozkan et al., 2020; Rubenstein et al, 2018; Shields & Price, 2002; Shields & Ward, 2001; Sousa-Poza & Sousa-Poza, 2007).⁶ Relying exclusively on JS, however, raises two issues. Firstly, doing so discounts a vast literature (summarised in DeSimone, 2014) which confirms the multidimensionality of WWB. Secondly, while JS coheres well with decision utility, it fails to accommodate ‘experienced utility’ (Kahneman, Wakker & Sarin), which characterises WWB, not as a comparative evaluative judgement between competing job opportunities, but rather as the accumulation of ‘lived’ emotional experiences.

2.2 Subjective Well-Being (SWB)/Worker Well-Being (WWB)

2.2.1 Tri-Partite Model of Hedonic Well-Being (HWB)

To date, the SWB/WWB literature has been dominated by the standard tripartite model of well-being. The tripartite model characterises WWB as comprising two independent constructs, a relatively stable evaluative component and a transient (positive and negative) affective component (Eid & Diener, 2004). Together, these components form HWB, a state in which work-related desires are satisfied and positive emotions are experienced more frequently than negative emotions at work (Disabato et al., 2016). The evaluative dimension is typically captured using single-item JS. With regard to the affective dimension, most

⁶ For example, Ozkan et al’s. (2020) meta-analysis reports an average negative correlation of -0.54 between job satisfaction and QI. Shields & Ward (2001) find that nurses who are dissatisfied with their jobs are 65% more likely to intend quitting than their more satisfied counterparts.

WWB researchers adhere to Watson and Tellegen's (1985) well-supported (e.g., Ekkekakis, 2013) 'two domain theory' of affect, which characterises positive affect (PA) and negative affect (NA) as two separate constructs, with divergent and non-overlapping determinants. Individuals may experience high or low levels of PA and NA simultaneously (Larsen et al., 2001) e.g., they may feel simultaneously inspired and stressed when assigned a new project. Affect is often further decomposed using orthogonal axes of pleasure and psychological arousal, which characterise PA and NA in terms of 'active' (e.g., excited) and 'passive' (e.g., calm) emotions. Active feelings, by virtue of their "*energised nature*" are hypothesised to be more likely to trigger action e.g., quitting (Patterson et al., 2004, p. 197). Workers who are 'happy' at work, will experience PA relatively frequently and NA relatively infrequently.

2.2.2 Eudemonic Well-Being

While HWB, regardless of how it is measured, forms the core component of WWB, there is growing support for the notion that achieving 'the good working life' requires more than a pleasurable existence (e.g., Sousa-Poza & Henneberger, 2004).⁷ Kopperud and Vittersø (2008) argue that relying purely on evaluative and affective WWB measures may distort the true work experience by over-simplifying it. Whereas studies which use pure measures of affect typically find working is associated with low levels of experienced pleasure and high levels of experienced displeasure (Bryson & MacKerron, 2017; Kahneman et al., 2004; Knabe et al., 2010), studies which adopt a eudemonic approach typically find work to be a source of growth, personal challenge and meaning (Csikszentmihalyi et al., 2005; Salanova et al., 2006).⁸ Bryson & McKerron speculate that affective measures may mask the complexity of the work experience and the potential for eudemonic components such as purpose, personal growth and autonomy to compensate for low levels of pleasure. Cassar and Meier (2018) emphasise the need to acknowledge the additional, non-pecuniary (psychological) rewards provided by working, in particular the sense of meaning which it affords. This view is echoed by Chater and Loewenstein (2016) who argue that utility maximisation depends not just on valence (the ability of individuals to construe their lives in a positive fashion) but also on sense-making (the ability of individuals to make sense of their lives). Similarly, Kaplan and Schulhofer-Wohl (2018) emphasise the importance of distinguishing between jobs based on the psychological rewards of autonomy and meaning that they provide.

EWB indicators capture workers' subjective evaluation of their capacity to maximise their potential and flourish (Bartels et al., 2019) at work. It is not sufficient for workers to

⁷ Support for the notion that HWB and EWB are independent factors is provided by evidence that it is possible to experience one without the other. For example, highly valued and meaningful tasks such as child-care have been shown to score highly on purpose but low on pleasure (White & Dolan, 2009) and vice versa. Recent empirical work (Allan et al., 2019; Nikolova & Cnossen, 2020) reveals that, while JS and meaningful work are correlated, they are distinct concepts. Detractors point to the fact that EWB and HWB measures are typically moderately to highly correlated, raising questions about the value-add of measuring both constructs separately (Disabato et al., 2016).

⁸ For example Bryce (2018) uses representative American Time Use Survey data to show that respondents report work to be more meaningful than shopping, socialising, relaxing or engaging in leisure activities, with jobs that offer both personal autonomy and a pro-social impact being rated the most meaningful. Similarly, Dur & Van Lent (2019) report that 77% of workers surveyed report that having a socially useful job is important or very important for them.

feel happy and satisfied (Martela & Sheldon, 2019). They also need to feel that they have some input and control (Ryff, 1989), that they are performing meaningful work for, and with, people they like and trust (Baumeister & Leary, 1995), and that they are on a path to personal growth (Deci & Ryan, 2008; Graham & Nikolova, 2015). EWB captures the Aristotelian notion of a well-lived life rich in meaning, purpose and personal fulfilment. Unfortunately, an all-encompassing measure of EWB does not currently exist.⁹ I therefore draw on Martela and Sheldon's (2019) meta-analysis, which highlights engagement and the satisfaction of basic psychological needs (BPN) as the two most widely used EWB measures, to inform the conceptualisation of EWB that I employ in this paper. In doing so I subscribe to Wijnngaards et al.'s (2021, p. 798) categorisation of a WWB construct as eudemonic if "*intrinsic motivation, activation, purpose and meaningfulness are at its core (Ryan and Deci 2001)*".

The first component of EWB as conceptualised in this paper, engagement, is a motivational construct which emerged from the field of organizational psychology. It extends the positive psychology concept of 'flow' (Csikszentmihalyi 1990), or total immersion in an activity, and applies it specifically to the workplace. It also draws heavily on the Job Demands-Resources (JD-R) model (Bakker & Demerouti, 2007, 2017) which hypothesises that the experience of working is characterised by two opposing forces, demands and resources. Job demands are work characteristics that demand sustained effort from employees, potentially depleting their energy / vigour and thus triggering an associated physiological and psychological cost, whereas job resources are work characteristics that motivate employees by supporting their personal growth and assisting them to achieve their professional goals. While engagement has been conceptualised in different ways, for the purposes of this paper it is defined as a positive and fulfilling affective-cognitive state of mind which is characterized by high levels of dedication, vigour, and absorption (Bakker and Demerouti, 2008; Schaufeli et al., 2002). Engaged employees exhibit high levels of intrinsic motivation, commitment and "*focused energy*" (Carter et al., 2018, p. 2484). They view their work as a positive challenge. The opposite of engagement, disengagement, represents a state of detachment and disconnectedness, in which workers may question the value, purpose or meaning of their jobs. Disengagement, combined with chronic exhaustion, may produce work dis-utility in the form of burnout, a state of psychological distress.

A burgeoning body of research summarised in Straume and Vittersø, (2015) supports the idea that HWB and EWB are correlated but distinct dimensions of WWB and play different roles in the development and maintenance of 'the good working life'. Kopperud and Vittersø, (2008) summarised a large body of evidence, including distinctive physiological correlates, which supports the independence of engagement from its evaluative (satisfaction) and affective (happiness) counterparts. For example, Thorsteinsen and Vittersø, (2020) showed that, whereas pleasure acts as a reward which increases the likelihood of a behaviour being repeated, engagement serves to keep individuals committed to difficult goals when faced with (unpleasant) setbacks. Similarly, Straume and Vittersø (2012) reported that while challenging tasks reduce pleasure, they simultaneously increase engagement and inspiration.

The second component of EWB as conceptualised here, the satisfaction of BPN, captures functional and psychological WWB. Basic Psychological Needs Satisfaction

⁹ Martela and Sheldon (2019) note that eudaimonia has been operationalized in at least 45 different ways, using measures involving 63 different constructs.

Theory (BPNT) draws heavily on Carol Ryff's (1989) developmental well-being model which focuses on 'self-realisation', a concept which has, in turn, been linked to performing meaningful work (Martela et al., 2021). It is also strongly influenced by Self-Determination Theory (SDT; Deci & Ryan, 2000; Ryan & Deci, 2000, 2017; Deci et al., 2017) which aims to identify socio-contextual factors in the workplace that boost workers' levels of 'autonomous' (intrinsic) motivation and eudaimonia in the form of optimal psychological and behavioural functioning (Ryan & Deci, 2017 p. 3).¹⁰ BPNT posits that while humans naturally strive to achieve personal growth, they can be supported to do so through the provision of environmental 'nutriments' or resources / supports which enable their shared evolved, and distinct, 'basic' needs for autonomy, relatedness and competence (BPN) to be met within the work environment. Providing conditions that favour BPN satisfaction should in turn foster more autonomous motivation (Fernet et al., 2020; Vansteenkiste et al., 2020).

The need for autonomy refers to workers' need to be able to 'own' and endorse their actions (Sheldon & Niemiec, 2006). The need for competence (White, 1959) is met when workers experience a sense of mastery over their environment and are able to perform effectively. Relatedness (Baumeister and Leary, 1995) refers to the need to feel understood, cared for and appreciated at work. The extent to which BPN are satisfied or thwarted depends on workplace conditions and individual differences in disposition, locus of control etc. BPN satisfaction results in significantly higher levels of self-determined motivation amongst individuals (Van den Broek et al., 2016). Failure to meet any one of these basic needs, however, will directly result in reduced self-motivation and well-being, causing individuals to languish instead of flourish (Nikolova & Cnossen, 2020).¹¹ The Basic Psychological Needs Satisfaction at Work scale (BPNSW; Deci et al., 2001) measures the extent to which BPN are successfully met at work.

2.2.3 Global and Experiential WWB Measures

WWB measures can be further decomposed by their underlying temporal structure. Global measures capture workers' beliefs about the typical patterns of WWB that they experience at work. They operate on a remembered basis (Bakker & Oerlemans, 2011), requiring respondents to retrieve and evaluate memories of previous work experiences. For example, individuals may be asked to report the extent to which they experienced particular emotions 'over the past month'. Global measures are criticised for being influenced by peer comparisons and recall biases such as peak-end bias (Fredrickson & Kahneman, 1993) and duration neglect (Redelmeier & Kahneman, 1996). As the length of time between the actual experience and the self-report increases, the details become harder to remember, causing respondents to rely more on semantic knowledge and situation-specific beliefs

¹⁰ SDT characterises motivation as a continuous controlled-to-autonomous continuum which captures the full gamut of motivational states, namely amotivation, external regulation, introjected regulation, identified regulation, integrated regulation, and true intrinsic motivation (Gagné and Deci, 2005). Intrinsic motivation represents the most autonomous form of motivation, a state in which employees willingly engage in work tasks of their own volition, not as a result of external rewards but because they find them inherently interesting and engaging (Brunelle & Fortin, 2021).

¹¹ Support for the high value that workers place on autonomy in particular is provided by the well-documented utility premium associated with self-employment has been attributed to decisional autonomy (Benz and Frey, 2008) and by workers' willingness to trade higher pay for increased autonomy in hours of work (Mas and Pallais, 2017).

than episodic memory (Robinson & Clore, 2002). In addition, global measures can be affected by socially pervasive, but frequently erroneous, normative beliefs of what ‘should’ constitute a good working life (e.g., earning a high salary) (Dolan, 2014).

Experiential measures capture short-term, in-the-moment, context-dependent shifts in WWB. They measure discrete moments of experienced or ‘instant utility’, the integral of which, weighted by duration, comprises ‘total utility’ over an extended period of time (Kahneman & Riis, 2005). By capturing within-person changes in affective states, experiential measures provide a more “*textured tool*” for understanding the ups and downs of daily working life (Helliwell & Barrington-Leigh, 2010, p. 734). Respondents’ very recent personal experience serves as the baseline when rating their current happiness (Reis et al., 2000), thus avoiding recall biases (Robinson & Clore, 2002). While the Experience Sampling Method (ESM) (Larson & Csikszentmihalyi, 2014) is the gold standard in experiential measurement,¹² it is not always feasible due to its potentially prohibitive time and cost burden (e.g., Eisele et al., 2020). The Day Reconstruction Method (DRM) (Kahneman et al., 2004) offers a less invasive alternative. While it stops short of capturing live feelings, it comes close by using a structured questionnaire/diary technique which induces participants to reconstruct emotions experienced during one or more work ‘episodes’ the previous day. It also incorporates procedures (e.g., obtaining separate estimates of episode durations) that reduce the impact of known biases. DRM self-ratings have been shown to substantively replicate those obtained with ESM (e.g., Dockray et al., 2010; Tweten et al., 2016).¹³

Global and experiential measures have been shown to be separable (Krueger & Schkade, 2008) and differentially determined (Hudson et al., 2016). However, despite growing evidence of within-person variations in WWB (e.g., Fisher, 2000; Ilies & Judge, 2002; Ilies et al., 2009; Shi et al., 2021), global measures, which tap the remembering, evaluative and stable self, continue to dominate the WWB literature, a finding which may reflect a general over-reliance on the standard single-item measure of JS. While most measures of EWB rely on global measures, it is also possible, though far less usual, to measure moment to moment fluctuations.¹⁴ The fact that WWB is mainly investigated as a static phenomenon may mask important within-person fluctuations over the course of the working day.

2.3 Literature Review—QI and WWB

As noted in 2.1 and 2.2, extant QI research has historically relied on JS to proxy for work-related utility / WWB and job quality. A large body of evidence documents a negative link between JS and QI/VT, supporting the central claim of VT process models that JS is a reliable predictor of QI (e.g. Feng et al., 2022a; Griffeth et al., 2000; Warden et al., 2021; Yang et al., 2022). For example, Madigan and Kim’s (2021) recent meta-analysis reported a

¹² Participants are ‘pinged’ on their mobile phones at random intervals throughout the day for a period of time and are asked to answer questions about their current situation (e.g., who they are with; what they are doing etc..) and to rate their current feelings in that moment.

¹³ Dockray et al. (2010) compared ESM and DRM ratings of happiness, tiredness, stress, and anger over a 24 h period and found moderate to high between-person correlations (0.58–0.90). Lucas et al. (2021) report high correlations of between 0.76 and 0.85 between the 2 methods for average positive and negative affect reported in each situation, however they find correlations vary depending on the focus of the analysis.

¹⁴ Csikszentmihalyi’s (1990) flow measure captures the extent to which individuals become wholly absorbed in a work task, to the extent that they lose all sense of time. Studies by Sonnentag (2003) and Xanthopoulou et al. (2009), document within-person variations in engagement.

significant negative relationship between JS and the QI of teachers ($\rho = -0.40$). However, there is some evidence that the relationship between JS and QI may be moderated by external factors such as the unemployment rate (Trevor, 2001) and that dynamic measures of JS may offer more predictive power.¹⁵

As noted in 2.2, however, JS is just one sub-component of WWB. Several theories, for example Affective Events Theory (AET; Weiss & Cropanzano, 1996)¹⁶ and the System Feedback Model (Baumeister et al., 2007), posit that evaluation and affect work in tandem. Emotional experiences trigger the cognitive processing of those experiences, which in turn forges new learned associations or ‘affective traces’ which are ‘fed back’ to inform specific future action tendencies e.g. approach or avoidance. In the context of QI, a worker may receive negative feedback from her boss for a project on which she has worked hard. She feels angry and frustrated (affective trace). This prompts her to reflect on how to avoid a similar outcome in the future (evaluation) by creating a series of if–then rules for future behaviours, one of which may involve quitting in the event of a reoccurrence (specific action tendency).

Despite a strong theoretical argument for investigating potential links between affect and QI however, this issue was, until recently, largely bypassed in the QI literature, with some notable exceptions e.g. Green (2010). Green used a pre-existing dataset to compare the relative predictive power of JS and affect in relation to VT. He found that while PA and NA both predicted quits, they were outperformed by JS. He attributed this finding to the fundamentally evaluative nature of JS which renders it more suitable for capturing the complex cognitive processes engaged when workers consider quitting. A growing number of studies have, however, since documented the important role played by affect in shaping QI (e.g., Feng et al., 2022b; Gordon et al., 2018). For example, Hong et al., (2021) found that PA positively predicted engagement, which in turn predicted QI amongst Chinese workers in the IT sector. The authors attributed their results to Trait Activation Theory (TAT; Tett et al., 2013) which conceptualises work engagement as a state of high activation PA combined with increased job motivation. Green’s (2010) early work was also limited to the extent that it relied exclusively on global affective measures. Shi et al. (2021) recently addressed this limitation by drawing on AET to design an experiential ESM study which revealed that day-level within-person PA and NA predicted within-person variance in QI.

Despite a growing body of research summarised in Sect. 2.2 which indicates that EWB measures are distinct from evaluative and affective measures (Tov & Lee, 2016), and may be particularly relevant for the work context, there has been relatively little by way of empirical validation of a direct link between EWB and QI/VT to date. As regards engagement, engaged employees are posited to be more committed to their organisations and should thus report lower QI (Schaufeli & Salanova, 2008). Halbesleben’s (2010) meta-analysis revealed a significant negative correlation between overall engagement and QI of $\rho = -0.22$ ($N=1893$), a result which was supported by Schaufeli and Bakker’s (2004) finding that highly engaged Dutch employees experienced fewer QI than their less engaged colleagues. More recent studies (Agarwal et al., 2012; Albrecht et al., 2015; Bailey et al.,

¹⁵ For example, Chen et al. (2011) and Liu et al. (2012) use panel data to show that the trend in JS may be an even more important predictor of QI than absolute JS. By using a dynamic (change in JS) rather than a static measure of JS, Liu et al (2012) increased the amount of variance in VT explained by JS from 5 to 43%.

¹⁶ AET posits that work contexts produce affective states which in turn shape subsequent behaviours and attitudes, potentially triggering ‘action tendencies’ (Kahneman & Riis, 2005).

2017; Bakar et al., 2021; Juhdi et al., 2013; Karatepe, 2013; McCarthy et al., 2020; Memon et al., 2020; Park & Gursoy, 2012; Sandhya & Sulphey, 2020; Shuck et al., 2014; Zhang et al., 2018) have also confirmed a significant negative relationship between engagement and QI/VT.

At the organisational level, high aggregate levels of engagement are also directly, or indirectly, negatively associated with QI (Du Plooy & Roodt, 2010; Harter et al., 2002; Han et al., 2022). For example, Harter, Schmidt & Hayes found a significant correlation of $\rho = -0.30$ between engagement and VT. There is also evidence that engagement may mediate the relationship between QI and other factors. Sheehan et al. (2019) found that the significant link between psychological contract fulfilment and QI of Australian nurses was mediated by engagement, whereas Shin and Jeung (2019) found that engagement mediated the relationship between proactive personality and QI amongst Korean workers. In China, Fu et al. (2022) found that engagement significantly mediated the relationship between SWB and QI amongst teachers. Finally, significant links have been reported between engagement and other withdrawal behaviours such as absenteeism (e.g., Karatepe & Olugbade, 2016; Truss et al., 2013), and between work meaningfulness and QI (Dechawatanapaisal, 2022; Koh & Joseph, 2016; Leunissen et al., 2018; Sun et al., 2019; Uriesi, 2016).

In relation to BPNT, SDT proposes that for workers to voluntarily remain in their jobs, they must perceive that they are able to behave intentionally and of their own volition (Austin et al., 2020). Several studies have shown that workers who exhibit high levels of autonomous (intrinsic) motivation are more committed to their organisations and are less likely to report QI (e.g., Austin et al., 2020; Fernet et al., 2021; Gagné et al., 2015; Li & Yao, 2022; Miligi et al., 2020; Pham et al., 2021; Volmer et al., 2012). A hypothesised link between relatedness and VT is also supported by both Socialization Theory (e.g. Bauer et al., 2007) and Job Embeddedness Theory (Mitchell et al., 2001), which posit that the more 'adjusted' workers are to their work, and the more 'connected' they feel to their colleagues and organisations, the more 'stuck', they will feel in their jobs, and the less likely they will be to quit (Allen, 2006; Burrows et al., 2022; Mitchell et al., 2001; Peltokorpi et al., 2022; Self & Gordon, 2019; Tanova & Holtom, 2008).

Until recently, however, very few studies have directly examined the links between satisfaction of BPN and QI. Initial indications support a negative relationship. For example, Van den Broeck et al. (2016) reported a significant negative correlation between QI and the satisfaction of the needs for relatedness ($\rho = -0.21$), competence ($\rho = -0.05$) and autonomy ($\rho = -0.31$). De Clerck et al., (2022) found a negative relationship between BPN satisfaction and QI ($\rho = -0.39$) and a positive relationship between BPN frustration and QI ($\rho = 0.51$), whereas Heyns et al. (2022) reported a negative relationship between BPN satisfaction and QI of South African pharmaceutical employees ($\rho = -0.65$). Trépanier et al., (2015) found that satisfaction of BPN increased engagement and hindered QI over time. Finally, Vansteenkiste et al., (2007) used mediation analysis to demonstrate that BPN satisfaction explained the negative relationship between extrinsic motivation and QI, a finding which is consistent with SDT's contention that a strong focus on wages detracts from BPN satisfaction, reducing WWB.

It is also plausible that BPN satisfaction may influence QI indirectly. The Motivational Model of Work Turnover (Richer et al., 2002; Vallerand, 1997) proposes that perceptions of BPN satisfaction, influence self-determined intrinsic and extrinsic motivation, which in turn influence JS and, by extension, QI. This claim is supported by evidence that greater autonomy at work is associated with higher JS (Bartling et al., 2013; Benz & Frey, 2008). Competence, the feeling which occurs when workers are able to apply their skills to achieve a desired goal, has also been linked with JS (Cassar, 2010; Hundley, 2001). Finally,

relatedness, or feeling more connected to work colleagues and having more positive social relations at work, has also been shown to increase JS (Morgeson & Humphrey, 2006). There is also evidence that BPN satisfaction may act as a mediator between QI and other factors such as role ambiguity (e.g., Boudrias et al., 2020).

Based on the theory and literature review outlined above, I propose and test the following four research hypotheses:

- **H1:** Positive WWB indicators (JS, PA, engagement, BPN satisfaction) will be significantly negatively associated with QI
- **H2:** Negative WWB indicators (NA) will be significantly positively associated with QI.
- **H3:** While a high degree of overlap between WWB indicators is expected, the conceptual distinctiveness of the WWB indicators employed in this study should ensure that incorporating additional WWB measures over and beyond JS in the model will significantly increase explanatory power in relation to predicting QI.
- **H4:** Due to their more evaluative nature, global measures will significantly outperform experiential measures in terms of QI predictive power

3 Data and Methodology

3.1 Survey Design and Sample Characteristics

I employ a novel survey which was specifically designed to capture the multidimensionality of WWB. The survey was piloted using a convenience sample ($n=30$) to inform the development of the protocol. The final survey was issued online to 994 participants sourced by Prolific Academic, an online survey-panel provider.¹⁷ The survey was completed online between 25/11/2019 and 19/2/2020.¹⁸ Due to the study's focus on WWB, the sample comprises full-time workers based in the UK.¹⁹ ²⁰ Standard Prolific pre-screening criteria were used to recruit respondents between 18 and 65 years, who were engaged in full-time paid employment for more than 2 months, in organisations with 5 or more workers, for at least 21 hours per week.

Table 1 depicts the main characteristics of the sample. It also compares the key demographic variables to those of a worker sub-sample from the nationally representative UK Understanding Society dataset used in Wheatley (2021). Compared to Wheatley, the

¹⁷ 1514 Prolific panel members met the pre-screening criteria and were invited by Prolific to participate. Of these, 994 panel members elected to participate in the survey, a response rate of 65.6%. The Prolific UK database at the time of data collection comprised mainly white, full-time workers. 55% of the panel were female (v 66% in this sample). 75% were aged 20–40 (v 67% in this sample) and 50% held university degrees (v 60% in this sample). Participants were paid £5.30 to complete the survey.

¹⁸ Data collection was paused for 1 month to mitigate the distortionary well-being impact of Christmas and/or January back-to-work-blues.

¹⁹ Part-time workers are excluded due to evidence of systematic differences in quit motivations between part- and full-time workers (e.g., McBey & Karakowsky, 2001). The self-employed are excluded due to evidence of a 'self-employed job satisfaction premium' (Van der Zwan et al., 2018). The self-employed typically report higher well-being compared to similar employees (Hessels et al., 2018).

²⁰ The data included 8 respondents from Ireland. Excluding these workers from the analysis does not materially affect the results.

current sample contains a higher proportion of women, university graduates and workers in the 25–39 age bracket.

3.2 Measures

The outcome variable is QI. Respondents are asked “*Are you actually planning to leave your job within the next six months?*”. Responses are “*Yes*” (17.5%), “*No*” (59.9%) and “*Not sure*” (22.6%). The independent (WWB) variables are described in Table 2. To exclude potential confounding effects, I also control for a wide range of personal and work characteristics which are supported by an Imai et al. (2010) causal mediation analysis.²¹ Demographic covariates comprise age, gender, education and parental status. Personality is assessed using the validated (Lovik et al., 2017) 10-item Big-5 Inventory-10 (Rammstedt & John, 2007) which assesses 5 dimensions: neuroticism, openness to experience, agreeableness, conscientiousness and extraversion. Work-related covariates comprise net monthly salary (GBP’000); self-reported hours worked the previous month²²; self-assessed seniority (0–5 self-rating scale, where 5 = “*most senior*”) and tenure (years working at the organisation to date).²³ See Table 1 for more details. 7 observations with missing values are excluded from the baseline analysis (65 observations when controls are included). No discernible pattern is detectable.

4 Empirical Framework

I adopt the standard approach used in the economics literature (e.g., Clark & Oswald, 1996; Shields & Ward, 2001) and specify QI as a function of personal and work characteristics and of work utility. Work utility is in turn characterised as a function of the total non-pecuniary benefits derived from work. It is proxied by WWB and is assumed to guide the quit decision (Green, 2010). Equation 1 is estimated to isolate the impact of WWB on QI formation:

$$Q_i = \beta_0 + \beta_1 WWB_i + \beta_2 X_i + \beta_3 \lambda_i + \varepsilon_i \quad (1)$$

where Q_i is the probability of worker i intending to quit within the next 6 months; β_0 is the intercept; WWB_i is the self-reported WWB of worker i ; X_i is a vector of personal characteristics; λ_i is a vector of work characteristics which includes wages and hours and ε_i is an error term. The parameter β_1 captures the change in the probability of worker i intending to quit which is associated with a one standard-deviation increase in WWB_i . In line with the criterion validity test of a well-being indicator, β_1 is hypothesised to be negative for

²¹ The process involves 3 steps: (1) the independent variable, WWB, must predict the dependent variable, QI; (2) the independent variable must predict the mediating variable, the control; (3) the mediating variable must predict the dependent variable when controlling for the independent variable. Controls which were significant at the 10% or above level for any of the 7 well-being ‘treatments’ were included in the regression analysis. While self-rated mental health was significant, I did not control for it due to the risk of it acting as a collider or ‘bad’ control (Pearl, 2009).

²² By way of sensitivity check, I also use log hours in some specifications. Doing so does not materially change my results.

²³ I also measure other variables e.g., self-rated performance, relationship status etc. which I use in the descriptive analysis.

Table 1 Personal and work-related descriptives

Personal characteristics	Current sample (n = 960–990)	Wheatley (2021) Sample (n = 42,954)
Gender		
Female	66.0%	55%
Male/Non-Binary	34.0%	45%
Age	36.9	N/A
16–24	4.0%	13%
25–29	17.0%	11%
30–39	38.0%	24%
40–49	25.0%	26%
50–59	13.0%	19%
60–69	2.0%	6%
70 or over	0.0%	1%
Relationship status		
Single/Divorced/Widowed	25.2%	49%
In a relationship/Married	74.8%	51%^
Education		
No Formal Education	0.0%	6.0%
Lower Secondary (GCSE or above)	7.0%	26.0%
Higher Secondary (A level or equivalent)	33.0%	37.0%^^
Degree or above	60.0%	33.0%
Parent	48.1%	N/A
Country of residence		
England	83%	82%
Wales	4%	6%
Scotland	9%	8%
NI/Ireland	4%	4%
Permanent contract	96%	93%
Annual Household income (net)	£24,000–£36,000	£26,600
£0–£2,000	31.3%	
£2,000–£3,000	29.8%	
£3,000–£5,000	29.1%	
> £5,000	9.8%	
Physical Health condition	24.1%	
Mental Health condition	26.1%	
Long term condition/disability		23.0%
Physical Health (<i>1 = "Very Bad"; 5 = "Very Good"</i>)		
Very Bad	0.7%	
Bad	6.6%	
Moderate	31.7%	
Good	51.1%	
Very Good	9.9%	
Mental Health (<i>1 = "Very Bad"; 5 = "Very Good"</i>)		
Very Bad	0.7%	

Table 1 (continued)

Personal characteristics	Current sample (n = 960–990)	Wheatley (2021) Sample (n = 42,954)
Bad	10.8%	
Moderate	36.0%	
Good	38.6%	
Very Good	13.9%	
Citizenship		
British	95.3%	
Irish/Other	4.7%	
Seniority		
0 (0 = "Most junior")	7.5%	
1	19.3%	
2	25.7%	
3	32.8%	
4	11.8%	
5 (5 = "Most senior")	2.9%	
Tenure		
< 12 months	9.1%	
1–2 years	14.0%	
2–5 years	29.0%	
5–10 years	23.3%	
> 10 years	24.6%	
Net monthly salary		
< £1,000	2.3%	
£1,000–£2,000	61.0%	
£2,000–£3,000	25.9%	
£3,000–£4,000	7.3%	
> £4,000	3.5%	
Sector		
Private	63.2%	
Public	36.8%	
Industry		
Manufacturing (<i>Agriculture, Transportation, Utilities, Wholesale, Constructions; Manufacturing; Other</i>)	18.9%	
Services (<i>Finance; Professional; Admin; Retail; Education; Arts; Tourism; Food; Media; Healthcare; IT; Social services; Real estate</i>)	81.1%	
Organisation size		
Micro (< 10 employees)	4.7%	
Small (< 50)	13.4%	
Medium (< 250)	18.4%	
Large (> 250)	62.8%	
Don't Know	0.8%	

Table 2 Description of measures

Global measures	Scale/measure employed	Possible responses & scoring	Descriptives
Single-item Job Satisfaction (JS)	Workers' evaluations of the overall state of their working lives is measured using the standard question (e.g. Frey & Stutzer, 2002) "Overall, how satisfied are you with your job?"	11-point Likert scale (0–10) where 0 = "Completely dissatisfied" and 10 = "Completely satisfied"	Mean: 5.89 SD: 2.17
Affect (PA and NA)	Validated (e.g., Bogas & Neves, 2011) Institute of Work Psychology Multiaffect Indicator Scale (IWP) (Warr, 2016). Respondents use a 7 point Likert scale to indicate the extent to which they experienced 8 negative (4 passive & 4 active) and 8 positive (4 passive & 4 active) emotions at work during the past month. Positive emotions: excited, inspired, joyful, enthusiastic, calm, at ease, relaxed, laid back; Negative emotions: anxious, worried, tense, nervous, despondent, dejected, hopeless, depressed	7-point Likert scale (0–6) where 0 = "Never (0% of the time)"; 1 = "A little of the time (1% to 20% of the time)"; 2 = "Some of the time (21% to 40% of the time)"; 3 = "About half of the time (41% to 60%)"; 4 = "Much of the time (61% to 80%)"; 5 = "A lot of the time (81% to 99%)"; and 6 = "Always (100% of the time)". Global positive affect (PA) = mean of the 8 positive emotion scores. Global negative affect (NA) = mean of the 8 negative emotions scores. For ease of comparison with the DRM scores, IWP scores were recoded using a 0–6 scale	Mean: 2.85 (PA) & 2.11 (NA) SD: 0.94 (PA) & 0.77 (NA) Cronbach's alpha: 0.89 (PA) & 0.92 (NA)
Engagement (E)	The engagement measure from the validated (Halbesleben & Demerouti, 2005) 16-item Oldenburg-Burnout Inventory (OLBI) (Demerouti et al., 2010) which includes two dimensions, engagement and exhaustion. For the engagement dimension, respondents rate their agreement with four positive (e.g., "This is the only type of work I can imagine doing") and four negative (e.g., "I talk about work negatively.") statements	I employ the scoring system used in Demerouti et al. (2010). 4-point Likert scale (1–4) where 1 = "Strongly Agree" and 4 = "Strongly Disagree". Positive statements are recoded so that a high score indicates high engagement	Mean: 2.51 SD: 0.56 Cronbach's alpha: 0.83

Table 2 (continued)

Global measures	Scale/measure employed	Possible responses & scoring	Descriptives
Basic Psychological Needs (BPN): Relatedness, Competence & Autonomy	The 21-item Basic Psychological Needs Satisfaction at Work Scale (Baard et al., 2004; Deci et al., 2001) measures the extent to which workers' innate needs for relatedness, and autonomy are met at work. Respondents rate their agreement in relation to the extent to which statements applied to them at work over the previous month, e.g., "When I am at work...I feel pressured at work"	Respondents use an 8-point Likert scale (1-7) to rank the trueness of statements where 1 = "Not at all true" and 7 = "Very much true"	Mean: 4.92 (relatedness), 4.94 (competence); 4.43 (autonomy) SD: 1.10 (relatedness), 1.03 (competence) 1.08 (autonomy) Cronbach's alpha: 0.88 (relatedness), 0.71 (competence) & 0.78 (autonomy)
<i>Experiential Measures</i> Job satisfaction (JS)	All experiential measures are capture using the Day Reconstruction Method (DRM; Kahneman et al., 1994). Workers use diary entries to 'reconstruct' three consecutive 'episodes' from the previous working day between the hours of 7am and 10 pm. The starting point for the episodes is randomly generated. Participants record when each episode started and ended; where they were; who they were with and what they were doing. Experiential JS is measured using the question "All things considered how satisfied were you with this episode?"	11-point Likert scale (0-10) where 0 = "Completely dissatisfied" and 10 = "Completely satisfied"	Mean: 6.67 SD: 2.14

Table 2 (continued)

Global measures	Scale/measure employed	Possible responses & scoring	Descriptives
Affect (PA and NA)	Experiential PA and NA are measured using the question "How did you feel during this episode?". Participants rate the extent to which they experienced 16 emotions (the same emotions used in the IWP)	0–6 Likert scale where 0 = "Did not experience that feeling at all" and 6 = "That feeling was an important part of the experience". Experiential affect is the average of the PA and NA scores for the 3 episodes after 20 observations with missing values for one or more episodes have been removed	Mean: 2.85 (PA) & 2.11 (NA) SD: 0.94 (PA) & 0.77 (NA) Cronbach's alpha: 0.89 (PA) & 0.82 (NA)
Basic Psychological Needs (BPN): Relatedness & Competence	Experiential EWB is captured by using the same rating scale to assess the extent to which workers experienced a sense of relatedness ("I felt like people cared about me") and competence ("I felt a sense of accomplishment")		Mean: 3.73 (relatedness) & 4.41 (competence) SD: 1.55 (relatedness) & 1.49 (competence)

‘positive’ WWB indicators (JS, PA, engagement, relatedness, competence and autonomy) (**H1**) and positive for ‘negative’ indicators (NA) (**H2**). Rather than use a single latent factor of WWB, I examine 4 different proxies for WWB so as to identify those WWB measures which are likely to be most relevant for organisations concerned with identifying and preventing dysfunctional turnover.

In line with most studies which use QI as the dependent variable, I employ a cross-sectional design. As such, I cannot rule out the existence of unobserved individual level factors which predict both WWB and QI (e.g., risk preferences; locus of control) and I make no claims to a causal interpretation of the results. While the analysis would benefit from the use of a panel dataset which controls for time invariant unobserved heterogeneity and which includes a similarly wide range of WWB measures, unfortunately no such dataset currently exists. However, I estimate the results controlling, and not controlling, for a wide range of personal and work-related covariates, including personality.

For ease of interpretability, in my main analysis I use a binary linear probability model (LPM) to estimate the baseline specification (Eq. 1 excluding X_i and λ_i) which isolates the effect of WWB on QI, holding all other variables constant at their means. Following Green (2010), I merge “Yes” and “Not Sure” responses (coded 1) to the QI question.²⁴ “No” responses are coded 0. The alternative would be to exclude the “Not sure” responses, or to analyse them as a third outcome. The impact of adopting either of these approaches is depicted in **S1** and **S2** respectively. I use the Huber-Sandwich-White correction to ensure standard errors are robust to heteroskedasticity. The Benjamini and Hochberg (1995) multiple inference method is used to control the false discovery rate (the proportion of significant results that represent false positives).²⁵ For all models, I investigate which WWB indicator best fits the data by comparing explanatory power (R^2) and goodness of fit (Bayesian Information Criterion, **BIC**), with and without controls (X_i and λ_i).

Next, I examine whether a composite multi-dimensional WWB model outperforms the standard unidimensional JS model. I employ a hierarchical (stepwise) regression model comparison framework, in which a composite regression model is built by gradually adding WWB indicators to the previous model at each step, starting with JS. The hypothesis is that additional specifications should significantly increase the explanatory power (R^2) and goodness of fit by capturing a larger proportion of variance in the outcome variable than a model which relies solely on the base measure, JS. I use the Stata *hireg* command (Bern, 2005) to formally test the null hypothesis that there will be no difference in the explanatory power offered by a composite model (JS + additional WWB indicators) versus the base model (JS). If the R^2 of the later model is significantly higher than the R^2 of the earlier model, then the later model is assumed to offer a better fit. I gradually introduce additional WWB indicators, changing the order of inclusion each time to take account of potential sequence sensitivity (Gelbach, 2016). I also investigate the impact of changing the base measure from JS to engagement. Finally, I re-run the main analyses replacing the global WWB indicators used in the main analysis with their experiential equivalents.

²⁴ I combine *Yes* and *Not Sure* responses on the basis that a *Not sure* response suggests that the formation of a future QI is at least a possibility, whereas a *No* response definitively rules this out. The ordered logistic regression results (**S3**) also suggest that the *Not Sure* responses are closer to the *Yes* responses in terms of sign and magnitude than the *No* responses.

²⁵ P-values controlling for multiple testing are generated as follows: (1) The *p*-values are ranked from smallest to largest; (2) each *p*-value is compared to a critical value ($[i/m]*Q$), where *i* is the rank, *m* the total number of tests, and *Q* is the false discovery rate of 0.1; (3) *p*-values are deemed significant if they are smaller than the *p*-value Benjamini-Hochberg critical value at the relevant threshold.

5 Results

5.1 Descriptive Statistics

17.5% of workers report positive QI, 59.9% report negative QI and 22.6% are not sure. Bonferonni-adjusted bivariate correlations are provided in **S5**.²⁶ All correlations are signed in line with standard WWB theory. Global JS is highly ($\rho > 0.5$) or moderately ($0.2 \leq \rho \leq 0.5$) positively correlated with all WWB indicators, except for experiential NA ($\rho = -0.17$).

Following Green (2010), I investigate systematic differences in the profiles of ‘Quitters’ (workers who respond “Yes” or “Not Sure” to the QI question) and ‘Stayers’ (workers who respond “No”). The results are outlined in Table 3. Columns 2–4 depict the mean scores/responses associated with the personal/work-related and WWB variables for all workers, Quitters, and Stayers respectively. Column 5 reports the *p*-value from a t-test or chi-test of identical means. I find that, in line with extant research, Quitters are on average younger, less likely to be parents and more likely to earn a low monthly salary than Stayers. They also on average more likely to be less senior and to report lower tenure and self-rated performance. In terms of personality, Quitters score on average higher on openness and neuroticism and lower on extraversion, conscientiousness and agreeableness than Stayers. They are also more likely to have a mental health condition and to rate their mental health lower than Stayers.

I also find evidence of systematic differences in the WWB profiles of Quitters and Stayers. Quitters report significantly lower scores for all positive WWB indicators, and higher scores for all negative WWB indicators, than Stayers. As WWB indicators are ordinal rather than cardinal, an engagement score of 2 cannot be interpreted as being twice as high as a score of 1. I thus show the percentage of Quitters and Stayers who score ‘highly’ in respect to each of the outcomes (≥ 75 th percentile) in the bottom-half of Table 3. I find that a higher percentage of Quitters fall into the top (bottom) quartile of all negative (positive) WWB scores. I find the largest raw differences between Quitters and Stayers in relation to JS (24.7% v 65.6%) and engagement (50.7% v 15.8%). WWB differences between the two groups are significant at the 1% level across all indicators.

I refine this analysis in columns by decomposing Quitters into ‘Definite Quitters’ (“Yes” responders) and ‘Possible Quitters’ (“Not Sure” responders) and testing for differences between the two groups. The results are set out in columns 6–8 of Table 3. On average, Definite Quitters are significantly younger, more likely to have been working for their organisation for less time and to report lower self-rated performance scores for the past month than Possible Quitters. Definite Quitters also report higher (lower) scores on average across all positive (negative) WWB measures than Possible Quitters, suggesting an element of progression. In particular, Definite Quitters report significantly lower levels of JS, PA, engagement, competence, relatedness and autonomy and significantly higher levels of NA, than Possible Quitters.

²⁶ I implicitly assume that X and Y can be treated as continuous. By way of sensitivity analysis I also run a non-parametric Spearman rank correlation test with the Bonferonni adjustment which produces marginally lower correlation scores.

Table 3 Quitters v Stayers

	All workers (n = 909)	Quitters (n = 366)	Stayers (n = 543)	p-value	Possible Quitters (n = 204)	Definite Quitters (n = 162)	p-value
Personal/work-related factors							
Age	36.9	35.7	37.7	0.002	37.0	34.1	0.003
Female	66.6%	68.0%	65.6%	0.439	66.2%	70.1%	0.393
Parent	48.4%	39.3%	54.5%	<0.001	44.1%	33.3%	0.036
Education				0.140			0.480
Lower Secondary	6.4%	4.3%	7.7%		4.9%	3.7%	
Higher Secondary	14.6%	14.2%	14.9%		15.2%	13.0%	
Cert/Diploma	8.1%	6.6%	9.2%		6.4%	6.8%	
Vocational	10.7%	12.3%	9.6%		14.7%	9.3%	
Undergraduate	42.4%	43.2%	41.8%		39.2%	48.1%	
Postgraduate	17.8%	19.3%	16.6%		19.6%	19.1%	
Net Monthly Income				0.003			0.313
<£2 k	32.0%	38.3%	27.9%		33.8%	43.8%	
£2–3 k	29.7%	27.9%	30.9%		30.9%	24.1%	
£3–5 k	28.2%	24.0%	30.9%		26.5%	21.0%	
£5–7 k	6.0%	4.4%	7.2%		4.4%	4.3%	
> £7 k	4.1%	5.4%	3.1%		4.4%	6.8%	
Single	25.0%	26.0%	24.3%	0.574	26.0%	25.9%	0.991
Personality							
Openness	3.48	3.57	3.42	0.024	3.55	3.59	0.696
Extraversion	2.88	2.80	2.94	0.063	2.79	2.81	0.810
Conscientiousness	3.87	3.75	3.94	<0.001	3.77	3.74	0.769
Agreeableness	3.53	3.43	3.59	0.009	3.43	3.42	0.941
Neuroticism	2.99	3.19	2.86	<0.001	3.18	3.20	0.815
Mental Health score (1–5)	3.56	3.36	3.69	<0.001	3.43	3.28	0.097
Mental Health Condition	25.7%	30.0%	22.8%	0.015	26.9%	33.9%	0.147

Table 3 (continued)

	All workers (n = 909)	Quitters (n = 366)	Stayers (n = 543)	p-value	Possible Quitters (n = 204)	Definite Quitters (n = 162)	p-value
Tenure				0.094			0.010
< 2 years	23.3%	24.0%	23.2%		19.6%	28.4%	
2–5 years	28.6%	32.3%	25.6%		29.5%	33.2%	
5–10 years	23.2%	22.4%	23.6%		23.5%	22.1%	
> 10 years	24.9%	21.3%	27.6%		27.4%	21.3%	
Seniority (0–5)	2.30	2.15	2.41	0.001	2.16	2.13	0.834
Hours worked last month	149.8	146.4	152.0	0.065	146.7	146.2	0.924
Net monthly salary				<0.001			0.143
≤£2 k	63.3%	72.8%	56.8%		68.2%	78.4%	
£2–3 k	25.8%	20.2%	29.8%		23.5%	16.1%	
£3–4 k	7.6%	5.1%	9.2%		6.4%	3.7%	
> £4 k	3.3%	1.9%	4.2%		1.9%	1.8%	
Self-rated performance past month (0–10)	7.54	7.3	7.7	<0.001	7.5	7.0	0.006
WWB profiles							
JS (0–10)	5.93	4.75	6.72	<0.001	5.22	4.15	<0.001
PA (0–6)	2.54	2.18	2.79	<0.001	2.26	2.07	0.056
NA (0–6)	1.56	2.01	1.26	<0.001	1.85	2.23	0.002
Engagement (1–7)	2.52	2.18	2.73	<0.001	2.33	2.00	<0.001
BPN Competence (1–7)	4.95	4.57	5.20	<0.001	4.75	4.35	<0.001
BPN Relatedness (1–7)	4.93	4.64	5.13	<0.001	4.74	4.51	0.051
BPN Autonomy (1–7)	4.44	4.04	4.72	<0.001	4.22	3.80	<0.001
% in 'high' category							
JS (>= 7.0)	49.3%	25.7%	65.2%	<0.001	31.9%	17.9%	0.002
PA (>= 3.4)	22.8%	12.8%	29.5%	<0.001	14.2%	11.1%	0.378

Table 3 (continued)

	All workers (n = 909)	Quitters (n = 366)	Stayers (n = 543)	<i>p</i> -value	Possible Quitters (n = 204)	Definite Quitters (n = 162)	<i>p</i> -value
NA (>=2.2)	25.5%	39.9%	15.8%	<0.001	34.8%	46.3%	0.026
Engagement (>=2.9)	24.6%	6.5%	36.8%	<0.001	8.8%	3.7%	0.049
BPN Competence (>=5.7)	22.6%	11.5%	30.0%	<0.001	13.2%	9.3%	0.236
BPN Relatedness (>=5.7)	26.4%	18.3%	31.9%	<0.001	21.1%	14.8%	0.124
BPN Autonomy (>=5.1)	29.9%	15.6%	39.6%	<0.001	20.6%	9.3%	0.003

'High' thresholds are based on 75th percentile level. *p*-values are calculated using a two-sample *t*-test or chi-squared test to test for differences between the mean scores reported by Quitters and Stayers (column 5) and the mean scores reported by Definite Quitters and Possible Quitters (column 8)

Table 4 Main regression analysis: head-head comparison of links between Global WWB indicators and the probability of QI (binary outcome; standardised scores)

	(1) JS	(2) JS	(3) Affect	(4) Affect	(5) Engagement	(6) Engagement	(7) BPN	(8) BPN
JS	-0.225*** (0.012)	-0.215*** (0.014)						
PA			-0.073*** (0.017)	-0.070*** (0.018)				
NA			0.121*** (0.017)	0.125*** (0.019)				
Engagement					-0.232*** (0.012)	-0.222*** (0.014)		
Relatedness							-0.017 (0.018)	-0.026 (0.019)
Competence							-0.074*** (0.020)	-0.068*** (0.021)
Autonomy							-0.097*** (0.021)	-0.090*** (0.021)
Age		-0.008 (0.014)		-0.002 (0.017)		-0.000 (0.014)		-0.013 (0.017)
Gender		0.011 (0.016)		0.023 (0.016)		0.007 (0.015)		0.002 (0.017)
Parent		-0.035** (0.015)		-0.041*** (0.016)		-0.024 (0.015)		-0.043** (0.017)
Education		0.029* (0.015)		0.031** (0.016)		0.040*** (0.015)		0.038** (0.015)
Openness		0.027* (0.015)		0.029** (0.015)		0.035** (0.014)		0.042*** (0.015)
Extraversion		0.007 (0.014)		-0.001 (0.017)		-0.001 (0.015)		0.009 (0.016)
Agreeableness		-0.005 (0.015)		-0.005 (0.016)		0.002 (0.015)		-0.005 (0.016)
Conscientiousness		-0.006 (0.014)		-0.010 (0.017)		-0.002 (0.016)		-0.012 (0.017)
Neuroticism		0.005 (0.017)		-0.031* (0.018)		0.004 (0.017)		0.006 (0.017)
Tenure		-0.009 (0.015)		-0.001 (0.017)		-0.022 (0.015)		0.007 (0.017)
Seniority		0.001 (0.016)		-0.010 (0.018)		0.007 (0.016)		0.014 (0.017)
Salary		-0.034** (0.017)		-0.055*** (0.017)		-0.033* (0.016)		-0.050*** (0.017)
Hours last month		-0.068** (0.031)		-0.071** (0.033)		-0.054* (0.031)		-0.057* (0.032)

Table 4 (continued)

	(1) JS	(2) JS	(3) Affect	(4) Affect	(5) Engagement	(6) Engagement	(7) BPN	(8) BPN
Constant	0.405*** (0.014)	0.399*** (0.014)	0.403*** (0.014)	0.399*** (0.015)	0.402*** (0.013)	0.397*** (0.014)	0.403*** (0.014)	0.399*** (0.015)
Controls	NO	YES	NO	YES	NO	YES	NO	YES
Observations	982	929	982	929	982	929	982	929
McFadden R ²	0.2112	0.2382	0.1212	0.1622	0.2249	0.2520	0.1156	0.1585
RMSE	0.4361	0.4317	0.4606	0.4529	0.4323	0.4278	0.4622	0.4542
BIC	1168.82	1163.18	1281.83	1258.25	1151.61	1146.17	1294.94	1269.23

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Benjamini–Hochberg p values adjusted for multiple inference. Robust standard errors in parentheses. Dependent Variable is binary QI, namely stated intention to quit the job within the next 6 months, with Yes and Not Sure categories merged (0 = No; 1 = Yes/Not Sure). Standardised scores are used throughout. 60 observations with missing well-being or control observations are dropped

5.2 Regression Analysis

5.2.1 Main Regression Analysis—Individual Indicators

Next, I formally test the relationship between WWB indicators and QI using multivariate regression analysis. I compare the extent to which 4 (global) WWB indicators: (1) JS (2) Affect (PA + NA); (3) engagement and (4) BPN satisfaction (relatedness + competence + autonomy) explain variations in QI, with and without controls. A positive coefficient implies that a one standard deviation increase in the WWB measure increases the probability of QI. The results (with controls) are set out in Table 4. With the exception of relatedness, all WWB measures are significantly associated with QI at the 1% level adjusted for multiple inference. All WWB coefficients are signed in line with expectations and the extant VT literature, with higher levels of positive WWB indicators (JS, PA, engagement, BPN) associated with reduced QI, and higher levels of negative WWB indicators (NA) associated with increased QI. This meets the criterion validity requirements of a WWB measure and supports the assumption outlined in the Empirical Framework section that workers are using perceived levels of WWB to guide QI formation. It also allows me to accept **H1** and **H2**, namely that positive (negative) WWB indicators are significantly negatively (positively) associated with QI.

Individual effect sizes (without controls) range from 0.017 (relatedness) to 0.232 (engagement). Following Mehmetoglu and Jakobsen (2016),²⁷ I find large effects for JS and engagement, a medium effect for NA and small effects for PA, relatedness, competence and autonomy. The engagement measure produces the largest individual effect. A one standard deviation (2.2 units) increase is associated with a 22.2 percentage point decrease in QI, even after incorporating a wide range of controls, including wages and hours.²⁸ The effect size associated with the standard JS measures is, however, only marginally smaller, at 0.215. All WWB indicators offer greater predictive power than wages and hours combined, which explain just 2.7% of variation in QI. Consistent with previous research, earning more, working longer hours, being a parent, not being university educated and scoring lower on the Big-5 openness trait, are significantly negatively associated with QI. In terms of overall explanatory power (R^2) and fit, I find that engagement outperforms JS, explaining 25.2% of variation in QI (22.% without controls) versus 23.8% for JS (21.1% without controls), and producing a lower BIC and RMSE. The WWB indicators are ranked as follows in terms of explanatory power: (1) engagement (2) JS (3) affect and (4) BPN.

To glean further insights into the relationship between WWB and QI, I analyse the affect, engagement and BPN sub-scale items. In relation to PA, three emotions appear to primarily drive the negative relationship with QI, namely *enthusiastic* (-0.091 ; $p < 0.001$), *inspired* (-0.028 ; $p = 0.092$) and *at ease* (-0.036 ; $p = 0.025$). Similarly, for NA the positive relationship with QI appears to be driven by three emotions, namely *depressed* (0.063; $p < 0.001$), *dejected* (0.058; $p = 0.001$) and *despondent* (0.039; $p = 0.018$). Interestingly, while high activation positive emotions appear, on balance, to have greater explanatory power in relation to QI, a finding which is in line with AET, the opposite is the case for

²⁷ $\beta_1 < 0.1$ = 'small' effect; $0.1 < \beta_1 < 0.19$ = 'medium' effect; $\beta_1 > 0.2$ = 'large' effect.

²⁸ Using log hours in the JS specification marginally increases R^2 from 23.8% to 24.1% and reduces effect sizes i.e. a one-unit increase in log hours reduces QI by 2.7% ($p = .088$), whereas a one-hour increase in standard hours reduces QI by 6.8% ($p = .032$).

NA. This may reflect reverse causality if people who have already formed QI are forced to stay for reasons outside of their control, resulting in negative emotions.

In relation to engagement, the extent to which workers *talk about their work in a negative way* (-0.173 , $p=0.020$), find their work to be a *positive challenge* (0.064 ; $p=0.016$), *can't imagine doing any other type of work* (0.055 ; $p=0.002$) or *feel engaged in their work* (0.096 ; $p<0.001$) appears to be particularly relevant in terms of shaping QI formation.²⁹ Finally, in relation to BPN, workers who report feeling a *sense of accomplishment* (-0.045 ; $p<0.001$), who *get a chance to show how capable they are* (-0.032 ; $p=0.002$) and who believe that their *feelings are taken into consideration* work (-0.068 ; $p<0.001$) report lower QI.³⁰ Somewhat surprisingly, workers who *are told they are good at their job* (0.024 ; $p=0.038$) and who *feel free to express their opinions* (0.030 , $p=0.038$) are more likely to form positive QI. This may reflect higher levels of self-confidence and self-efficacy, which could in turn be independently positively associated with QI if those same workers feel that there are a wider range of job options available to them.

5.2.2 Hierarchical Step-Wise Regression—WWB Model Comparison

I next examine whether using a composite model increases explanatory power in relation to QI. Table 5 depicts the results. Starting with the standard WWB measure, single-item JS (column 2), I gradually introduce affect, engagement and BPN, changing the order each time. I find little evidence of sequence sensitivity. However, combining affect with any other measure reverses the sign of PA and renders it non-significant. To identify the 'best' model, I use the Stata *hireg* command (Bern, 2005) to test for significant differences in R^2 across the 4 models. Based on the criteria of highest R^2 and lowest RMSE and BIC, Model 6 (column 7 in Table 5) (JS + affect + engagement + controls) is optimal, explaining 29.4% of variation in QI, versus 23.8% for JS + controls. Using a composite model significantly increases explanatory power by 5.6 percentage points.³¹ This result allows me to accept **H3**, namely that incorporating additional WWB indicators over and beyond JS will significantly increase explanatory power in relation to predicting QI.

5.2.3 Heterogeneity Analysis

Organisations may be concerned about retaining particular sub-groups of workers. I thus re-run the main regression analysis, incorporating interaction terms to investigate heterogeneity in the predictive power of alternative WWB indicators for university graduates, women, high self-rated performers, recent hires and senior workers. Table 6 outlines the results. I find limited evidence of heterogeneity. The JS, engagement, PA and competence measures all appear to offer greater predictive power in relation to longer-tenured employees. Interestingly however, I also find a larger competence effect for less senior workers. This may reflect the fact that more senior workers are more confident in their own ability to perform their jobs effectively, thus rendering competence a potentially less salient issue for

²⁹ 1 = Strongly Agree and 4 = Strongly Disagree, therefore a negative relationship between negative items and QI is expected.

³⁰ 1 = Not at all true and 7 = Very True, therefore a negative relationship between positive items and QI is expected.

³¹ While incorporating BPN marginally raises R^2 , the increase is not significant and BIC and RMSE increase.

Table 5 Hierarchical Regression Model (binary QI; standardised variables)

	(Model 1) JS	(Model 2) JS	(Model 3) JS + A	(Model 4) JS + A	(Model 5) JS + A + E	(Model 6) JS + A + E	(Model 7) JS + A + E + BPN	(Model 8) JS + A + E + BPN
JS	-0.225*** (0.013)	-0.215*** (0.014)	-0.202*** (0.017)	-0.195*** (0.019)	-0.132*** (0.020)	-0.128*** (0.021)	-0.132*** (0.020)	-0.128*** (0.021)
PA			0.013 (0.017)	0.014 (0.016)	0.050** (0.017)	0.049** (0.016)	0.047*** (0.017)	0.047** (0.019)
NA			0.057** (0.018)	0.058** (0.014)	0.040** (0.018)	0.038* (0.014)	0.043** (0.019)	0.040* (0.0121)
Engagement					-0.155*** (0.013)	-0.152*** (0.019)	-0.164*** (0.020)	-0.159*** (0.020)
Relatedness							-0.008 (0.020)	-0.014 (0.018)
Competence							0.035 (0.020)	0.033 (0.021)
Autonomy							-0.009 (0.021)	-0.010 (0.022)
Controls	NO	YES	NO	YES	NO	YES	NO	YES
Observations	982	929	982	929	982	929	982	929
McFadden R ²	0.211	0.238	0.220	0.246	0.272	0.294	0.274	0.296
Change in R ²			0.009***	0.008***	0.052***	0.047***	0.002	0.002
RMSE	0.4361	0.4317	0.4341	0.4299	0.4196	0.4164	0.4195	0.4164
BIC	1168.82	1163.18	1171.41	1167.03	1110.59	1113.42	11,128.09	1131.11

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Robust standard errors in parentheses. Dependent Variable is binary QI, namely stated intention to quit the job within the next 6 months, with Yes and Not Sure categories merged (0=No; 1 = Yes/Not Sure). Standardised scores are used throughout. 65 observations with missing well-being observations are dropped. Change in R² estimated using Stata hireg command and is calculated first comparing columns 2, 4, 6 and 8 (no controls) and then comparing columns 3, 5, 7 and 9 (with controls)

Table 6 LPM—Heterogeneity analysis

Indicator	(1) All	(2) *Education	(3) *Performance	(4) *Tenure	(5) *Seniority	(6) *Gender
JS	-0.225*** (0.012)	-0.003 (0.012)	-0.010 (0.012)	0.032*** (0.012)	-00.004 (0.012)	-0.017 (0.027)
PA	-0.132*** (0.014)	-0.001 (0.013)	-0.026* (0.014)	0.028** (0.014)	-0.001 (0.014)	0.005 (0.030)
NA	0.159*** (0.014)	0.018 (0.013)	0.006 (0.014)	0.006 (0.014)	0.022 (0.014)	0.025 (0.032)
Engagement	0.232*** (0.012)	-0.008 (0.011)	0.012 (0.010)	0.033*** (0.011)	-0.005 (0.013)	-0.024 (0.027)
Relatedness	-0.109*** (0.014)	0.003 (0.013)	-0.022 (0.013)	0.008 (0.014)	0.003 (0.015)	-0.004 (0.033)
Competence	-0.146*** (0.014)	-0.001 (0.013)	-0.005 (0.013)	0.027* (0.014)	-0.035** (0.013)	-0.030 (0.031)
Autonomy	-0.155*** (0.014)	-0.005 (0.012)	-0.026** (0.012)	0.018 (0.015)	-0.019 (0.015)	0.046 (0.033)
Controls	NO	NO	NO	NO	NO	NO
Observations	982	982	982	982	982	982

*** $p < .01$, ** $p < .05$, * $p < 0.1$; Column 1 provides the standardised beta coefficient for each global WWB indicator for the entire sample. Columns 2–6 provide the coefficients for the interaction between each well-being variable and education (base category = lower secondary), performance (base category = 0 'worst performance'), tenure (base category = < 12 months), seniority (base category = 0 'most junior'), and gender (base category = female) respectively

Table 7 Main regression analysis—global v experiential measures (without controls). Head-head comparison of links between global and experiential worker well-being models and QI (binary outcome; standardised scores)

	Global JS	Experiential JS	Global affect	Experiential affect	Global BPN	Experiential BPN
Global JS	-0.222*** (0.012)					
Experiential JS		-0.113*** (0.015)				
Global PA			-0.078*** (0.018)			
Global NA			0.106*** (0.018)			
Experiential PA				-0.089*** (0.016)		
Experiential NA				0.061*** (0.016)		
Global Competence					-0.107*** (0.018)	
Global Relatedness					-0.051*** (0.018)	
Experiential Competence						-0.070*** (0.019)
Experiential Relatedness						-0.055*** (0.018)
Constant	0.408*** (0.014)	0.409*** (0.016)	0.411*** (0.015)	0.409*** (0.016)	0.410*** (0.015)	0.410*** (0.016)
Controls	NO	NO	NO	NO	NO	NO
Observations	879	879	879	879	879	879
McFadden R ²	0.2068	0.0547	0.1080	0.0563	0.0842	0.0510
RMSE	0.4386	0.4788	0.4654	0.4787	0.4671	0.4800
BIC	1057.32	1211.54	1167.30	1216.85	1177.01	1221.79

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Robust standard errors in parentheses. Dependent Variable is binary quit Intentions, namely stated intention to quit the job within the next 6 months, with Yes and Not Sure categories merged (0=No; 1=Yes/Not Sure). Standardised scores are used throughout. 112 observations with missing well-being data are dropped

them in relation to QI formation, whereas less senior workers may intend quitting due a lack of promotion opportunities, something which they may, in turn, attribute to a lack of perceived competence on their part. Similarly, autonomy has more predictive power for low performers, possibly due to the fact that they are performing poorly as a result of working in jobs/roles which do not cohere with their own sense of self and personal goals.

5.2.4 Global v Experiential

Finally, I compare the predictive power of global and experiential measures. Table 7 depicts the results. While all experiential coefficients are significant and are signed identically to their global equivalents, they are generally smaller and are outperformed by global measures in terms of the standard criteria (higher R^2 , lower BIC, lower RMSE). Furthermore, a composite model containing experiential measures + disengagement explains just 13.3% of variation in QI versus 29.4% for the global equivalent. The experiential affective measures appear to be more stable than their global counterparts when combined with other WWB measures, with experiential PA remaining significant and negatively signed throughout.

As a final piece of analysis, I therefore investigate whether using experiential instead of global affect in the composite model improves explanatory power. I find no material differences between the two specifications. These findings allow me to accept **H4**, namely that global measures will significantly outperform experiential measures in relation to predicting QI.

6 Robustness Checks

I perform a number of robustness checks as part of my analysis. First, I address the issue of sample non-representativeness by re-running the main regression analysis using weights for gender, age and education taken from Wheatley's (2021) nationally representative subsample of non-self-employed workers in the UK (see Table 1). The results are set out in **S6**. Using weights does not materially affect the sign, magnitude or significance level of any of the individual WWB coefficients, with the exception of BPN. Using a weighted sample, produces a larger and significant negative effect for relatedness on QI. In terms of overall explanatory power, using a weighted sample increases R^2 across the board by a range of approximately +1% (engagement) to approximately +4% (BPN).³²

I then test the appropriateness of merging *Yes* and *Not Sure* responses by examining the impact of excluding *Not Sure* responses. I estimate a binary LPM (*No* responses are coded as zero and *Yes* responses are coded as 1). The results are outlined in **S1**. While the coefficients are identically signed, with similar *p*-values, excluding the *Not Sures* increases the effect size of all WWB measures substantially, almost doubling the magnitude of the engagement and JS coefficients, to -0.43 and -0.42 respectively. It also increases the R^2 of all indicators, in particular JS and engagement, both of which increase by approximately 7%, to 30.4% and 31.8% respectively. Next, I relax the assumption of linearity, assume that the error terms of Eq. 1 have a logistic distribution, and estimate a logistic regression. The

³² The increase is driven by a 4.4 percentage point increase in relatedness, which may reflect the fact that relatedness has been shown to be negatively correlated with age (Van den Broeck et al., 2016) and the re-weighted sample has a higher number of workers under the age of 25.

results of the logistic model (marginal effects) are reported in **S4**. I find no differences in the signs of the coefficients in the LPM and logistic regression modes, although effect sizes are generally smaller, and explanatory power lower, in the logistic model than in the LPM model.

I then drop the binary model assumption by unbundling the *Yes* and *Not Sure* responses and using all 3 category responses (Long & Freese, 2006). I first run a standard OLS model (see **S2**). I then run an ordered logistic model, which assumes that the responses are ordered, increasing from *No* to *Yes*, with *Not Sure* positioned in-between (see **S3** for the ordered logistic marginal effects), and finally a multinomial logistic regression model. The binary logistic model fits the data better than either the multinomial or ordered logistic models in that it produces higher R^2 values and lower log likelihood figures for all measures. Furthermore, (as shown in **S3**) the coefficients for the *Not Sure* responses are signed identically (but with smaller magnitudes) to the *Yes* coefficients across all measures, providing empirical support for the merging of these two categories in the main analysis.

Finally, I draw on Boes and Winkelmann (2006) by relaxing the parallel regression assumption and running a generalised ordered logistic regression model. Unlike the standard ordered logit model, the generalised ordered logistic model does not assume that the relative magnitudes of the effects of each of the explanatory variables are constant across the distribution of single-scale responses. I find no material differences in the sign or magnitude of the marginal effects in the generalised ordered logistic model as compared to the ordered logistic model. *Yes* and *Not Sure* responses are signed the same (opposite to *No* responses). In general, the generalised ordered logistic model has more predictive power for *Yes* and *No* than *Not Sure* responses and fits the data marginally better than both the multinomial and ordered logistic models. However, it significantly underperforms both the logistic and LPM models.

7 Discussion

My results build on earlier work in organisational psychology and labour economics by clearly demonstrating the crucial role played by WWB in shaping QI. I find that WWB indicators explain between 11.6% and 22.5% of variation in QI (without controls), compared to just 2.7% for wages and hours combined. Furthermore, I find systematic differences in the WWB profiles of Quitters and Stayers across all indicators examined, with Quitters reporting significantly lower WWB than Stayers. Furthermore, there is evidence of progression, with Definite Quitters reporting lower WWB than Possible Quitters across all WWB measures. This is encouraging for organisations as it supports the process model characterisation of VT as a gradual withdrawal process, which can potentially be halted, or even reversed, through the judicious use of targeted WWB interventions, particularly when increasing salaries may not be feasible.

The primary aim of this paper is to examine whether the historic use of JS as a proxy for WWB in the VT and labour economics literatures is empirically justifiable. My results favour a (qualified) affirmative response. While the engagement measure outperforms JS in terms of effect size, explanatory power and fit, the difference between the two measures is marginal. However, while the standard single-item JS measure produces just a single figure by way of output, analysing the engagement sub-scale items reveals potentially actionable insights into aspects of the work experience which employees are struggling with. Interestingly, despite the fact that JS and engagement are highly positively correlated,

combining the two measures explains a significantly higher proportion of variation in QI than either measure on its own, suggesting that, while the two measures overlap, there is still value to be added in using both. This may reflect the fact that the engagement indicator causes workers to focus on specific aspects of their day-to-day experiences at work, whereas the single-item JS measure asks workers to reflect on and evaluate their experiences of working overall.

With regards to my second research question, namely does using additional WWB indicators improve explanatory power, my results suggest that WWB measures may act as complements. Combining JS with any additional WWB measure increases explanatory power significantly. Organisations may, however, need to trade-off increased predictive accuracy with pragmatism. Multi-faceted measures are more costly and burdensome, increasing the risk of non- and / or incomplete responses. If the organisation's aim is to merely identify a future potential VT problem, then single-item JS may suffice. However, where organisations do not face cost or time constraints and / or are keen to obtain more nuanced insights which can be fed back into the design of interventions which are targeted at potential quitters, then incorporating additional multifaceted measures, in particular engagement, may be justified.

My results suggest that, given the wide variation in explanatory power associated with different WWB indicators, the choice of measure matters when predicting QI. In relation to my third research question, namely do global measures outperform experiential measures in relation to QI prediction, I find that, as hypothesised, global WWB measures outperform experiential measures across the board. This finding, when combined with the low effect sizes found for all affective measures, lends support to Green (2010)'s conclusion that global measures may be inherently better suited to predicting QI than experiential measures due to their more evaluative nature. My results suggest that what workers think about their jobs matters more than how workers actually experience their jobs moment-to-moment when it comes to QI formation. It is, however, possible that this result may reflect the temporal framing of the QI question used in this study (6 months), and that experiential measures could prove more effective were a more immediate, or no, timeframe to be employed. It is also plausible that this finding only holds up to a certain 'threshold', and that if the lived daily reality of working life were to become sufficiently miserable and / or lacking in purpose, autonomy, sense of accomplishment or social support, it could eventually become intolerable, forcing workers to act with their feet and quit.

VT is only problematic if organisations are losing employees who they wish / need to retain, for example high performers. Information as to the relative superiority of particular WWB indicators in predicting QI amongst target sub-groups of employees could therefore be extremely valuable for organisations. My final research question thus examines whether there is any evidence that particular WWB indicators might be better suited to predicting the QI of women, graduates, high-performers, recent hires or more senior workers. I find limited evidence of heterogeneity using self-reported data. Future research which incorporated third-party data may, however, yield fresh insights in this regard.

The paper has a number of limitations which could be addressed by future research. The sample is, by design, non-representative. While the evidence that 'professional' survey participants differ from other survey participants is mixed (Hillygus et al., 2014; Huff & Tingley, 2015), the participants may differ systematically from the 'average' UK worker which would detract from wider generalisability. The fact that my main results still hold using a re-weighted sample provides some comfort in this regard however, at least in relation to the UK labour market. An obvious direction for future research would be to target a more diverse online sample and/or to extend the study to a field setting/other labour

markets. Secondly, the data comprises cross-sectional, self-rated scales, which may raise concerns about self-report and recall bias and which limits the conclusions to conditional correlations. While subjective data is essential to uncovering subjective perceptions of how well one is doing at work, using multiple data points and/or additional longitudinal quit data would strengthen internal and external validity. Finally, it is possible that using alternative WWB indicators to the ones employed in this study, for example a dynamic or multi-faceted JS measure, would produce a different ranking of WWB indicators. It is also possible that the regression analyses used in this paper may mask potential indirect links between the WWB indicators and QI. Further studies, in particular mediation analyses, would yield valuable insights in this regard.

That said, my findings have important implications for organisations seeking to proactively identify and prevent dysfunctional VT. They highlight the potential for organisations to vary those non-pecuniary factors which are under their control (e.g., promotion policies, annual leave, flexible work practices, job design etc.) with a view to improving WWB, thus reducing the risk of QI formation and by extension, actual quits. My results also highlight the potential value-add to organisations of using more nuanced WWB indicators than single-item JS which may afford them a valuable head-start in terms of assessing and reducing quit risk.

Supplementary Information The online version contains supplementary material available at <https://doi.org/10.1007/s11205-023-03166-x>.

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Declarations

Ethical approval This study is approved by the University College Dublin (UCD) Human Research Ethics Committee.

Conflict of interest The author has no relevant financial or non-financial interests to disclose.

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