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Work Overload, Work–Life Balance and Auditors' Turnover Intention: The Moderating Role of Motivation

Iryna Alves, *ISCAL (Lisbon Accounting and Business School), Lisbon Polytechnic Institute, ISEG (Lisbon School of Economics & Management), Universidade de Lisboa, and ADVANCE, CSG Research Centre, Portugal*

Miguel Limão, *ISCAL (Lisbon Accounting and Business School), Lisbon Polytechnic Institute*

Sofia M. Lourenço, *ISEG (Lisbon School of Economics & Management), Universidade de Lisboa and ADVANCE, CSG Research Centre, Portugal*

Auditor turnover remains a persistent concern for regulatory bodies and auditing firms. Past research on auditors' turnover intention has explored various factors influencing auditors' turnover intention, including job satisfaction, organisational commitment, work overload and work–life balance. However, the potential role of motivation in mitigating the adverse effects of work overload and work–life imbalance has been overlooked. Our study addresses this gap in the existing literature by revealing the crucial role of motivation and identifying differences between Big4 and Non-Big4 firms. Using questionnaire data from 301 auditors, analysed using structural equation modelling, we find that work overload is positively but indirectly related to turnover intention via work–life balance. Additionally, organisational commitment (job satisfaction) is directly (indirectly) and negatively related to turnover intention. Moreover, and considering that, due to work overload, a lack of work–life balance can be responsible for increasing auditors' turnover intention, our study suggests that motivation can mitigate this effect. Finally, our study suggests that work–life balance can directly reduce turnover intention for Big4 firms, while for Non-Big4 firms this reduction can only occur via organisational commitment (a channel that is weaker for Big4 firms).

Workers' turnover is a critical problem for companies (Hall and Smith 2009), as it represents a significant loss of investment in human capital (Parker and Kohlmeyer 2005). This concern assumes even greater importance within the landscape of auditing organisations that historically experience remarkably high turnover rates (Nouri 2016). On the one hand, these high turnover rates pose challenges for accounting and auditing firms due to the considerable costs associated with selecting, recruiting, training and supervising new employees. On the other hand, turnover within audit firms can jeopardise audit quality as audits will be more dependent on newly recruited and inexperienced staff as more seasoned professionals leave (Chi et al. 2013; Persellin et al., 2019). In fact, accounting bodies such as the Association of Chartered Certified Accountants (ACCA) and the Accounting and Corporate Regulatory Authority (ACRA) often identify auditors' high turnover as one of the major long-term problems auditing companies face (ACCA and ACRA 2012; ACCA 2020; Nouri and Parker 2020).

This problem has attracted research into auditors' and accounting professionals' turnover intentions (e.g., Donnelly et al. 2003; Hiltebeitel and Leauby 2001; Herda 2012; Herda and Lavelle 2012; Cannon and Herda 2016), a proxy for voluntary turnover. One stream of this research relates turnover intention to other crucial work-related attitudes, such as job satisfaction and organisational commitment (e.g., Donnelly et al. 2003; Parker and Kohlmeyer 2005; Hall and Smith 2009). Another stream explores the pivotal role of work overload and/or work–life balance (e.g., Greenhaus et al. 1997; Pasewark and Viator 2006; Jones et al. 2010; Persellin et al. 2019; Smith et al. 2020). These latter factors are especially relevant in the auditing profession because work can be very demanding, particularly near the fiscal year end (DeZoort and Lord 1997; Sweeney and Summers 2002). This excessive workload has long been a concern in the profession as it may result in dysfunctional auditor behaviours and attitudes (e.g., Persellin et al. 2019). Moreover, work overload reflects an important

Correspondence: Sofia M. Lourenço, ISEG (lisbon School of Economics and Management), Universidade de Lisboa, Rua Miguel Lupi n. 20, 1249-078, Lisbon, Portugal. email: slourenco@iseg.ulisboa.pt

decision by audit firms that need to manage the allocation of scarce resources (Christensen et al. 2021). However, and despite the increased effort of accounting and auditing firms in monitoring and managing workloads (and therefore, work–life balance), that high workloads may threaten audit quality remains an ongoing concern (Persellin et al. 2019).

In this context, motivation stands out as a noteworthy factor because it can affect the perception of work overload and work–life balance, as well as have an impact on job satisfaction and organisational commitment. Intrinsic and extrinsic motivations are among the most extensively studied behavioural mechanisms (Cerasoli et al. 2014), but relatively little empirical evidence exists regarding auditors' intrinsic (Kadous et al. 2019; Kadous and Zhou 2019) and extrinsic motivations (Nelson and Tan 2005; Trotman 2014). And even less evidence is known about the effect of these types of motivation on auditor's behaviours (Dierynck et al. 2023) or their role in mitigating the negative effects of challenging work demands. In fact, Trépanier et al. (2013) claim that further investigation is needed regarding the moderating role of motivation in the link between job demands (such as work overload) and individual work-related outcomes. This question is of particular interest in auditing, as partners in these companies worry that the current generation of auditors lacks the motivation to invest the necessary resources into their job (Westermann et al. 2015).

Therefore, in our theoretical comprehensive model of auditors' turnover intentions, we consider the role of motivation and integrate it with prior streams of research that consider the role of work overload and work–life balance, as well as organisational commitment and job satisfaction.

To examine these issues, we have gathered data from Portugal. As of 2023, the accounting and auditing industry in Portugal has a value of €1.2 billion and is ranked 16th of 27 European Union countries. Notably, in 2023, the accounting and auditing industry is the 77th largest of 294 industries tracked by IBISWorld.[1] Its ranking has remained stable since 2018.[2]

Despite global accounting fraud scandals affecting the profession, the impact in Portugal appears to be relatively minimal (e.g., Leão and Gomes 2022). The professional associations representing accountants and auditors in Portugal maintain a prestigious and elite standing (Rodrigues et al. 2003). The presence of Big4 auditing firms has significantly contributed to this reputation, leveraging international prestige, technical expertise, human resources and engagement with global clients (de Almeida 2012). The Portuguese enforcement mechanisms also play a crucial role in upholding ethical standards for professional auditors (de Almeida 2014), fostering consistent development in the status and performance of this profession (Rodrigues et al. 2003).

Based on questionnaire data from 301 auditors, this study uses structural equation modelling (SEM) to test our theoretical model. Our results show that work overload is positively but indirectly related to turnover intention via work–life balance. Additionally, organisational commitment (job satisfaction) is directly (indirectly) and negatively related to turnover intention. Moreover, and considering that, work overload and a lack of work–life balance can be responsible for increasing auditors' turnover intention, our study suggests that motivation can mitigate this effect. Finally, our study suggests that work–life balance can directly reduce turnover intention for Big4 firms, while for Non-Big4 firms this reduction can only occur via organisational commitment (a channel that is weaker for Big4 firms).

Our study contributes to the auditing and management accounting literatures in two important ways. First, our study adds to the extant literature on auditor turnover by providing a comprehensive and up to date review of this phenomenon, integrating different streams of research (see the call by Nouri and Parker 2020). Specifically, our study suggests that work overload can have a detrimental effect on auditors' work–life balance and, therefore, negatively affect job satisfaction, organisational commitment and, ultimately, turnover intention. This is particularly relevant for auditing companies and regulatory bodies that daily make decisions regarding the expected workload of auditors. Second, our study adds to self-determination theory (e.g., Deci and Ryan 2000) by uncovering the role of motivation as a mechanism to cope with the negative effects arising from common phenomena in workplace settings, such as work overload and work–life imbalance. This finding directly contributes to a new and insightful stream of research regarding the pivotal moderator role of motivation in professional environments (e.g., Adler and Chen 2011; Trépanier et al. 2013; Van der Hauwaert et al. 2022). This finding also distinguishes our research from prior studies analysing auditors' turnover intention that do not consider the role of motivation in this phenomenon (e.g., Greenhaus et al. 1997; Pasewark and Viator 2006; Ahuja et al. 2007; Jones et al. 2010; Smith et al. 2020).

This study is organised as follows. First, we review current literature and develop research hypotheses. We then describe our research setting, data collection and survey instrument. Next, we present our empirical results, provide robustness analyses and additional evidence. Finally, we conclude.

Literature Review and Hypotheses Development

This section first develops a holistic model to analyse auditors' turnover intentions, highlighting the role of work

overload, work–life balance and motivation. Although the individual relationships have been previously documented in the literature (inclusively in the accounting context), we aggregate them in a comprehensive single model designed for auditors, as auditing firms face problems of high work overload and high turnover rates among their professionals (Sweeney and Summers 2002; Nouri 2016). The section then examines whether motivation – a key variable of self-determination theory (Deci and Ryan 2000; Deci and Gagné 2005) – plays a moderating role in the relationships of work overload and work–life balance with the remaining variables. Our reasoning is that motivation can change the perception of excess work and balance between professional and personal lives and, therefore, reduce the effects of work overload and work–life balance.

Prior research on turnover intention

Turnover intention can be defined as the deliberate and conscious will to leave the organisation and look for a new professional opportunity (Tett and Meyer 1993). Turnover intention is an important issue because it signals the probability of a highly negative event for organisations – a voluntary departure by the employee (Cannon and Herda 2016). This departure significantly influences the activity of organisations because it represents a loss of investment in human capital (Parker and Kohlmeyer 2005) and a potential overload for remaining employees, with negative effects on their productivity and morale (Tnay et al. 2013).

In the context of auditing, turnover is a key problem that characterises the industry (ACCA and ACRA 2012; ACCA 2020), where auditors openly recognise their turnover intention (ACCA and ACRA 2012). Spending a couple of years working in an auditing company can be seen as a short-term investment by auditors for several reasons. First, it is universally accepted that working in an auditing company, especially in a large one, is an excellent start for a career (ACCA and ACRA 2012). Second, when auditors start in the auditing profession, they already know the high turnover rates and, hence, consider the job to be only temporary and that new job opportunities can appear after this initial stage (Hiltebeitel and Leauby 2001; Herda 2012). Finally, there is a very active job market for auditors, with a permanent enticement exercised by companies in other industries. The so-called 'end customer' companies often look for auditors to occupy positions related to accounting and related areas. This occurs not only because these companies know that auditors consider auditing as a launching pad for other jobs, but also because auditors have a set of skills and knowledge across several industries that makes them attractive to companies (Hiltebeitel and Leauby 2001).

Given the pervasiveness and adverse impacts of turnover intentions, it is not surprising the extensive bulk of research regarding this phenomenon. One stream of this research relates turnover intention with other work-related attitudes, such as job satisfaction and organisational commitment (e.g., Donnelly et al. 2003; Parker and Kohlmeyer 2005; Hall and Smith 2009). In this regard, Gregson (1992: 80) argues that 'both job satisfaction and organisational commitment should be included in models that predict turnover'. Job satisfaction is considered as an emotional state derived from an individual's interpretation of the scope of their work objectives (Locke 1969), while organisational commitment is considered as the predisposition of an individual to maintain the existing relationship with the organisation, accompanied by a greater openness to support its objectives and spend additional effort at work (Mowday et al. 1979). Even though job satisfaction can have a direct influence on the turnover intention (Hall and Smith 2009), prior research suggests that this relationship is mediated by organisational commitment (Parker and Kohlmeyer 2005; Sweeney and Quirin 2009). In auditing and accounting research, prior studies also suggest that job satisfaction is positively related to organisational commitment (e.g., Parker and Kohlmeyer 2005; Muliawan et al. 2009), and that this latter variable is negatively related to turnover intention (e.g., Donnelly et al. 2003; Muliawan et al. 2009; Herda and Lavelle 2012; Cannon and Herda 2016).

Another stream of research in turnover intentions explores the role of work overload and/or work–life balance (e.g., Greenhaus et al. 1997; Pasewark and Viator 2006; Ahuja et al. 2007; Jones et al. 2010; Persellin et al. 2019; Smith et al. 2020). Work overload is a concept used to define a situation in which employees have more work than they can complete in a given period (Beehr et al. 1976). Work overload is particularly important in auditing, due to a huge amount of work after the end of the fiscal year, which most of the times coincides with the calendar year. Therefore, the first months of the year are generally a period of high stress and high demand of audit work (Sweeney and Summers 2002). Indeed, DeZoort and Lord (1997) argue that the overload may originate from the work itself during the audit process and may be exacerbated during the 'high season' (characterised by the long hours of work and the huge volume of requests).

This excess of work and high seasonality can lead auditors to feel overwhelmed with their job, experience stress and, hence, lead to a desire to leave the auditing firm, that is, turnover intention (Fogarty et al. 2000; Sweeney and Summers 2002). However, prior research has suggested that this negative relationship could be indirect via work–life (im)balance (Greenhaus et al. 1997; Ahuja et al. 2007).[3] Work–life balance refers to the individual's ability to obtain satisfaction from the

combination of life at home and at work, with a minimum of conflict between both roles (Clark 2000; Haar et al. 2014). By experiencing work–life balance, employees can feel greater vitality and psychological well-being, tending to have less desire to leave the organisation (Jones et al. 2010). Work–life balance is particularly relevant to public accounting firms and to auditing professionals, who are often expected to work overtime (Sweeney and Summers 2002). Moreover, the demands of the audit profession frequently entail auditors undertaking extensive travel for on-site work at the client's premises (Phillips and Crain 1996). Consequently, auditors can face numerous conflicts between their professional and personal lives, resulting in an imbalance between the two spheres (Buchheit et al. 2016).

Given these two streams of research, it is important to consider the inter-relationships between the variables from the different streams. Specifically, work–life balance can affect job satisfaction as work–family conflicts lead to lower levels of job satisfaction (e.g., Robbins and Judge 2013; Haar et al. 2014). For auditing and accounting professionals, work–life balance is reported as one of the most important factors of job satisfaction (e.g., AICPA, 2004, 2011; Khavis and Krishnan 2021), and empirically shown to be an antecedent of job satisfaction for accounting professionals (Pasewark and Viator 2006).

In our conceptual model, we also consider the role of motivation as a crucial factor that can impact the outcomes of work. Motivation refers to the energy that drives the actions of an individual towards a certain end (Deci and Ryan 2000). Self-determination theory (Deci and Ryan 2000; Deci and Gagné 2005) distinguishes between intrinsic and extrinsic motivation. Intrinsic motivation refers to a motivation that comes from the enjoyment of developing a certain action in itself and not from *ex post* results that occur after developing that action, such as a reward. Conversely, extrinsic motivation refers to a motivation that comes from external pressures or expectations of receiving some reward after the action is done.

When intrinsic motivation is high, employees derive greater pleasure and joy from their work (Roos and Van Eeden 2008), which translates into higher job satisfaction (Ogunnaike et al. 2014; Monnot 2018) and greater organisational commitment (Rani and Desiana 2019). When extrinsic motivation is high, employees are more satisfied with their job (e.g., Ogunnaike et al. 2014) and demonstrate high organisational commitment (e.g., Kuuvas et al. 2017). In the auditing profession, prior research has shown that intrinsic motivation and extrinsic factors are related to favourable work outcomes (Quarles 1994; Kadous et al. 2019; Kadous and Zhou 2019).

Based on the aforementioned findings from the literature, we integrate the various relationships between the variables and posit that work overload is related to turnover intention via work–life balance, job satisfaction and organisational commitment, while intrinsic and extrinsic motivation are positively related to job satisfaction and organisational commitment. Therefore, we predict the following hypothesis:

H1: Work overload is indirectly related to auditor's job satisfaction, organisational commitment and turnover intention via work–life balance, and intrinsic and extrinsic motivation are positively related to job satisfaction and organisational commitment.

This hypothesis is represented in our theoretical model in Figure 1.

Motivation as a moderator

Motivation is an important intervening variable in our theoretical framework developed above, but we also consider its role as a potential moderator in the relationships of work overload (linked to work–life balance) and work–life balance (linked to job satisfaction and turnover intention).

Since intrinsic motivation refers to the drive coming from the pleasure and joy derived from the work itself and extrinsic motivation to the drive that comes from the expectation of receiving a reward after the work is done as suggested by self-determination theory (Deci and Ryan 2000; Deci and Gagné 2005), these motivations can mitigate the negative and positive relationships of work overload and work–life balance. Because these effects are expected to be similar for intrinsic and extrinsic motivations, we only use a single concept of motivation as a moderator.

Specifically, employees with a high motivation can be willing to accept a higher workload (Trépanier et al. 2013) and, therefore, perceive it as less detrimental to their work–life balance. Hence, we would expect a weaker relationship (i.e., less negative) between work overload and work–life balance when motivation is high. Conversely, those with a low motivation are less tolerant to a higher workload and perceive it as highly detrimental to their work–life balance. The sparse empirical research into this is aligned with our hypothesis as it shows a moderating role of motivation in the relationship between job demands (e.g., work overload) and psychological health such as burnout and distress (e.g., Fernet et al. 2004; Trépanier et al. 2013). Hence, we pose the following hypothesis:

H2a: The relationship between work overload and work–life balance is weaker (i.e., less negative) when motivation is high.

Similarly, because those with a high motivation derive more joy from work and its related rewards (Deci and

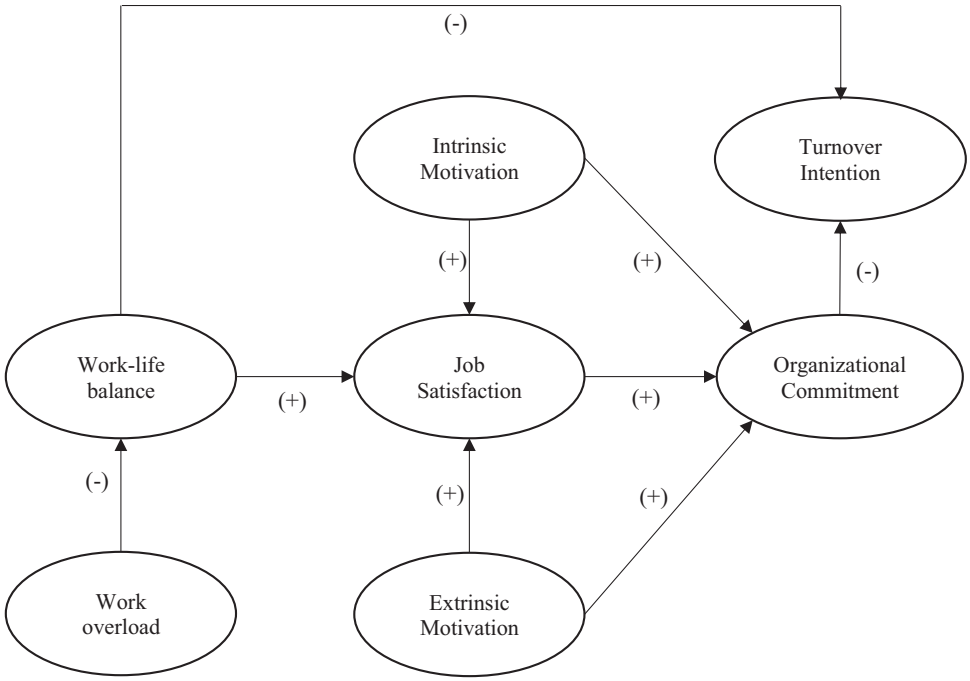

Figure 1 **Theoretical relationships between work overload and turnover intention predicted by H1**

Ryan 2000; Deci and Gagné 2005), the relationship between work–life balance and job satisfaction should be weaker (i.e., less positive) as conflicts between the personal and professional spheres can be compensated by this greater motivation. Hence, work–life balance may not be as important for job satisfaction when motivation is high. Conversely, for those with a low motivation, work–life balance should have a greater impact on their job satisfaction (i.e., more positive) as they derive less pleasure and joy from the task and its rewards. Therefore, we pose the following hypothesis:

H2b: The relationship between work–life balance and job satisfaction is weaker (i.e., less positive) when motivation is high.

Finally, we expect that the relationship between work–life balance and turnover intention is also weaker (i.e., less negative) for those with a high motivation. Work–life balance is a less important determinant of turnover intention when motivation is high because even if there are tensions between the personal and professional spheres, employees are more motivated to engage in the tasks and, hence, less willing to move to another job where their levels of motivation and work–life balance are unknown. Prior research corroborates this argument by showing that highly motivated employees are more likely to efficiently deal with job-related psychological strains (e.g., Fernet et al. 2004; Trépanier et al. 2013). Conversely, for those with low motivation, work–life balance should have a greater impact on their turnover intention (i.e., more negative) because work–life balance will be highly valued when employees are not truly motivated for the job. Consequently, when there are conflicts between the personal and professional spheres, low motivation will not compensate for negative effects on turnover intention. Hence, we hypothesise:

H2c: The relationship between work–life balance and turnover intention is weaker (i.e., less negative) when motivation is high.

These hypotheses are shown in our theoretical model in Figure 2.

Research Method and Design

Sample and data description

We develop an on-line questionnaire targeted at auditors in Portugal. The invitation to participate in the questionnaire was disseminated to auditors via different tools (LinkedIn, list of alumni and current students of two public universities, and a network of researchers in accounting). The link to the questionnaire was also available on the website of the Organisation of the Statutory Auditors. The use of multiple distribution channels aimed at increasing the number of responses received but limits our ability to determine the response rate.

We received 301 usable responses.[4] Given that all constructs are gathered through the same channel, the results could be subject to common method bias. Hence, to mitigate the potential for biases, we apply several pro-

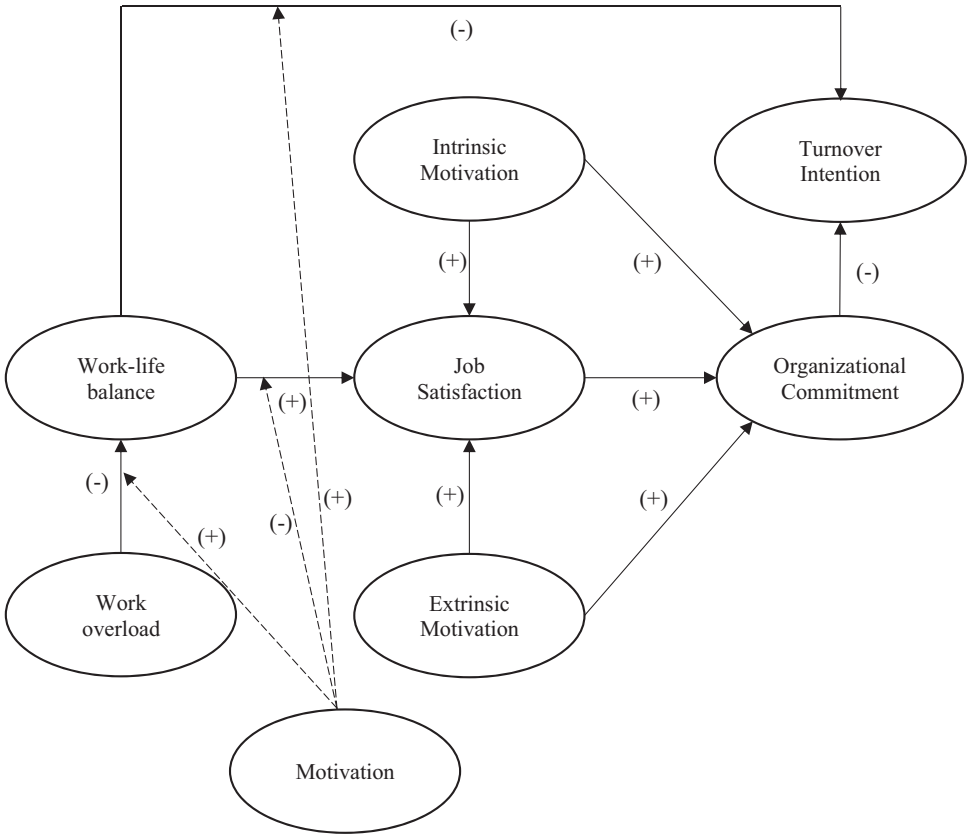

Figure 2 **Suggested theoretical model with moderation**

cedural and statistical remedies (Podsakoff et al. 2003; Speklé and Widener 2018). First, we ensured respondents of full anonymity of responses. To avoid ambiguity and complexity in the items, we used simple wording and made slight modifications with the aim to fit the items to the present research context. To ensure the instrument's clarity, readability and length, we thoroughly pre-tested the questionnaire with practitioners (auditors out of our sample) and academics (auditing and accounting researchers). We also positioned the variables in the questionnaire in a different order from our hypothetical model. Second, *ex post* to the survey design, we employ Harman's one-factor test as well as confirmatory factor analysis (CFA) (Podsakoff and Organ 1986; Mossholder et al. 1998). Based on eigenvalues greater than 1, the factor solution yields five factors with the first factor explaining 37% of the total variance, which means that it does not account for a majority of the variance. The CFA shows that the single-factor model has a $X^2(464) = 3950.29$, $p < 0.01$, CMINDF = 8.51, the root mean square error of approximation (RMSEA) = 0.158, the comprehensive fit index (CFI) = 0.483, Tucker-Lewis Index (TLI) = 0.448, which means that this model does not fit the data well.[5] In sum, we conclude that there is a low risk of common method bias.

Demographic data (see Table 1) shows that the respondents are, on average, 29 years old, have eight years of professional experience, four years of tenure in the current position, six years of experience in auditing and four years of tenure in the company. Most are only external auditors (88%) and are dedicated exclusively to auditing (87%). Of our sample, 50% are men. Table 1 also shows that most respondents have a master's degree (52%), occupy the position of staff/associate/trainee (46%) and work for a Big4 firm (55%).

Measurement of variables

We use questions that have been validated in prior studies and follow Bedford and Speklé's (2018) recommendations to increase the overall quality of the survey instrument.[6] The Appendix presents the questions and items used to measure the main constructs. Table 2 presents descriptive statistics for the measurement instruments.

Work overload

We assess work overload by using an instrument employed in prior accounting literature (e.g., Smith et al. 2020). We ask respondents to indicate on a 5-point Likert scale (1 = completely disagree, 5 = completely agree) the level of agreement with each of four items (e.g., 'I

Table 1 **Descriptive statistics for demographic variables (*N* = 301)**

Panel A: Demographic information of respondents					
Variable	P25	Mean	Median	P75	St Dev
Age (years)	25	29.47	27	31	7.77
Professional experience (years)	3	7.70	5	9	8.69
Tenure in the position (years)	1	3.72	2	4	5.90
Auditing experience (years)	2	6.27	4	7	7.87
Company tenure (years)	1	4.49	2	5	5.59
Panel B: Job titles					
				Number	Percentage
External auditor				265	88.04
External auditor who also performs internal auditing services				36	11.96
Panel C: Gender					
				Number	Percentage
Male				151	50.33
Female				149	49.67
Panel D: Dedication to other functions					
				Number	Percentage
Yes				37	12.98
No				248	87.02
Panel E: Education level					
				Number	Percentage
Bachelor's degree				136	45.18
Master's degree				155	51.50
PhD degree				2	0.66
Other				8	2.66
Panel F: Position in the current firm					
				Number	Percentage
Staff/Associate/Trainee				137	45.51
Senior/Supervisor				105	34.88
Manager/Director				30	9.97
Partner				22	7.31
Other				7	2.33
Panel G: Type of auditing firm					
				Number	Percentage
Big4				164	54.85
Non-Big4				135	45.15

Note: The number of observations per variable may differ from the total sample (*N* = 301) due to missing data.

simply have more work to do than can be done in an ordinary day').

Work–life balance

We assess work–life balance by adopting an instrument also employed in prior accounting literature (e.g., Buchheit et al. 2016). We ask respondents to indicate on a 5-point Likert scale (1 = completely disagree, 5 = completely agree [reverse coded]) the level of agreement with each of six items (e.g., 'My job produces stress that makes it difficult to fulfil personal or family duties').

Intrinsic and extrinsic motivation

We assess intrinsic and extrinsic motivation by using an instrument developed by Amabile et al. (1994). We ask respondents to indicate the extent to which each a set of items describes them (e.g., 'Curiosity is the driving force behind much of what I do' for intrinsic motivation; 'I am strongly motivated by the money I can earn' for

Table 2 **Descriptive statistics for measurement instruments**

Variable	Theoretical range	*N*	P25	Mean	P75	St Dev	Skewness	Kurtosis
Work overload	1–5	298	3.00	3.52	4.00	0.91	−0.47	2.69
Work–life balance	1–5	300	1.83	2.49	3.00	0.96	0.44	2.59
Job satisfaction	1–7	301	4.33	5.39	6.33	1.28	−0.90	3.27
Intrinsic motivation	1–4	301	2.80	3.19	3.60	0.56	−0.23	2.34
Extrinsic motivation	1–4	299	2.33	2.80	3.33	0.68	−0.41	2.98
Organisational commitment	1–7	301	4.38	5.04	5.88	1.25	−0.74	3.30
Turnover intention	1–7	300	2.00	3.64	5.00	1.90	0.13	1.82

Note: The number of observations per variable differ from the total sample ($N = 301$) due to missing data.

extrinsic motivation), where 1 = never or almost never true and 4 = always or almost always true.

Next, we create a dummy variable 'Motivation' that has the value of 1 if both the intrinsic motivation score is higher than the median and the extrinsic motivation score is higher than the median, and 0 otherwise.

Job satisfaction

To measure job satisfaction, we use an instrument employed in prior literature (e.g., Saks 2006). We ask respondents to indicate on a 7-point Likert scale (1 = completely disagree, 7 = completely agree) the level of agreement with each of three items (e.g., 'All in all, I am satisfied with my job').

Organisational commitment

To measure organisational commitment, we use an instrument previously employed in accounting studies (e.g., Wong-On-Wing et al. 2010). We ask respondents to indicate on a 7-point Likert scale (1 = completely disagree, 7 = completely agree) the level of agreement with each of nine items (e.g., 'I am proud to tell others that I am part of this firm').

Turnover intention

To measure auditor's turnover intention, we use three items from the Michigan Organisational Assessment Questionnaire developed by Cammann et al. (1979). The responses for the first and second items ('I often think about quitting' and 'I will probably look for a new job in the next year') are based upon a 7-point Likert-scale with a range between 1 = strongly disagree and 7 = strongly agree. The responses for the third item ('How likely is it that you will actively look for a new job in the next year?') are based on a 7-point Likert-scale with a range between 1 = not at all likely to 7 = extremely likely.

Results

To test our models, we employ covariance-based SEM, using software program STATA.[7] We adopt a generally accepted two-step SEM method (e.g., Bagozzi and Yi 2012; Hair et al. 2014) that encompasses the evaluation of the measurement model to assure its fit and the examination of the structural model.[8] Multivariate normality of data is a principal assumption of the full information maximum likelihood (FIML) in SEM. However, Kline (2016) notes that multivariate non-normality can usually be identified through univariate procedures. An examination of skewness and kurtosis reveals that all variables indicated in Figure 1 are well below 3.0 and 10.0, respectively, demonstrating that the data are within tolerable levels of univariate normality (Kline 2016).

Measurement model and assessment of model fit

First, we estimate the measurement model with a CFA and eliminate items with standardised loading less than 0.5 and items that have large measurement error variance, which causes low average extracted variance (AVE). After removing the problematic items, CFA reveal the unidimensionality of the constructs and their convergent validity (see Table 3). Specifically, the results show that all standardised loadings are significant ($p < 0.01$) and equal to or greater than 0.5, AVE of each construct is around or greater than 0.5, and composite reliability (CR) is greater than 0.7 (Hair et al. 2014). Only the variable extrinsic motivation has an AVE slightly below 0.5. Fornell and Larcker (1981) argue that despite low levels of AVE, convergent validity of the construct can be achieved since its composite reliability meets the acceptable level.

Next, we analyse discriminant validity by using the multi-trait matrix presented in Table 4. The Cronbach's alphas exceed the bivariate Pearson's correlation coefficients in all cases (Churchill 1979; Bagozzi et al. 1991). Additionally, our Cronbach's alphas vary between 0.72 and 0.94, which clearly support the internal

Table 3 Results of confirmatory factor analysis

Construct indicators	Standardised factor loading	AVE	CR
Work overload		0.63	0.87
wol1	0.72		
wol2	0.81		
wol3	0.79		
wol4	0.85		
Work–life balance		0.71	0.93
wlb1	0.85		
wlb2	0.91		
wlb3	0.85		
wlb4	0.86		
wlb5	0.80		
wlb6	0.76		
Job satisfaction		0.58	0.77
jobsat1	0.77		.77
jobsat2	0.52		
jobsat3	0.93		
Intrinsic motivation		0.53	0.86
intmot1	0.60		
intmot2	0.50		
intmot11	0.88		
intmot12	0.86		
intmot13	0.74		
Extrinsic motivation		0.46	0.72
extmot1	0.81		
extmot2	0.63		
extmot11	0.58		
Organisational commitment		0.60	.92
orgcom1	0.70		
orgcom2	0.79		
orgcom4	0.82		
orgcom5	0.80		
orgcom6	0.85		
orgcom7	0.77		
orgcom8	0.77		
orgcom9	0.70		
Turnover intention		0.79	0.92
turnov1	0.97		
turnov2	0.72		
turnov3	0.97		

Note: The result of the Kaiser–Meyer–Olkin test is 0.93, indicating good sampling adequacy (greater than 0.80) and the Bartlett test of Sphericity is highly significant ($p < 0.01$).

consistency of the constructs (Nunnally 1978). Thus, we conclude that there is strong support for discriminant validity.

Furthermore, the CFA shows that the measurement model does well in all fit indicators: $X^2(443) = 919{,}81$, $p < 0.01$, CMINDF = 2.08, CFI = 0.93, TLI = 0.92, RMSEA = 0.060. Although the data fit the model when chi-square is non-significant, the chi-square test is sensitive to sample size and, therefore, may be misleading (Lawrence et al. 1982).

Structural model results

In step two, we analyse the structural model. Table 5 presents the results of the structural model, in the column 'Base model', in terms of path coefficients and goodness-to-fit indices. In general, we find strong support for H1. Specifically, we find that work overload is negatively related to work–life balance ($p < 0.01$) and work–life balance is negatively related to turnover intention and positively related to job satisfaction ($p < 0.01$). Additionally, our base model reveals that intrinsic and extrinsic motivation are positively related to job satisfaction ($p < 0.01$) and that the relationship between extrinsic motivation and organisational commitment is positive and statistically significant ($p < 0.05$). However, we do not find a significant positive relationship between intrinsic motivation and organisational commitment. On the one hand, this non-result can be explained by the fact that, in the case of this sample, employers may not be offering the conditions that the auditors consider necessary to activate their intrinsic motivation and, therefore, be committed to their employer. Previous studies show contradictory evidence regarding the behavioural effects of offering rewards that meet the preferences of employees (Rynes et al. 2004; Lourenço 2020). On the other hand, an alternative explanation for this non-result is that the relationship between intrinsic motivation and organisational commitment is indirect via job satisfaction. Untabulated results of a model that does not consider job satisfaction corroborate this speculation. That is, when we exclude job satisfaction, the relationship between intrinsic motivation and organisational commitment becomes significant and has the predicted sign (coeff. = 0.149, $p < 0.05$).[9] Finally, we find that job satisfaction is positively related to organisational commitment ($p < 0.01$) and that this latter variable is negatively related to turnover intention ($p < 0.01$).

Significant results of the base model are presented in Figure 3.

Alternative models

Although the base model presented in Table 5 fits well, there is no assurance that it is the only model (Kline 2016). Accordingly, to rule out alternative model specifications, we compare the base model to alternative theory-based models. The first alternative model considers only a direct path between work overload and turnover intention. As expected, we find a positive relationship between work overload and turnover intention when work–life balance is not considered. In the second alternative model we add work–life balance as an intervening variable in the relationship between work

Table 4 **Multi-trait matrix†**

Variable	1	2	3	4	5	6	7
1. Work overload	**0.87**						
2. Work–life balance	−0.84***	**0.94**					
3. Job satisfaction	−0.38***	0.41***	**0.78**				
4. Intrinsic motivation	−0.15***	0.19***	0.38***	**0.84**			
5. Extrinsic motivation	−0.06	0.03	0.22***	0.38***	**0.72**		
6. Organisational commitment	−0.34***	0.35***	0.73***	0.35***	0.30***	**0.92**	
7. Turnover intention	0.42***	−0.47***	−0.67***	−0.27***	−0.13**	−0.62***	**0.91**

†The diagonal of the matrix (in bold) reports the Cronbach's alpha for each variable. The remainder of the table reports the bivariate Pearson's correlation coefficients.
Note: ** and *** indicate the significance of the *p*-value at < 0.05 and < 0.01, respectively, all *p*-values are two-tailed.

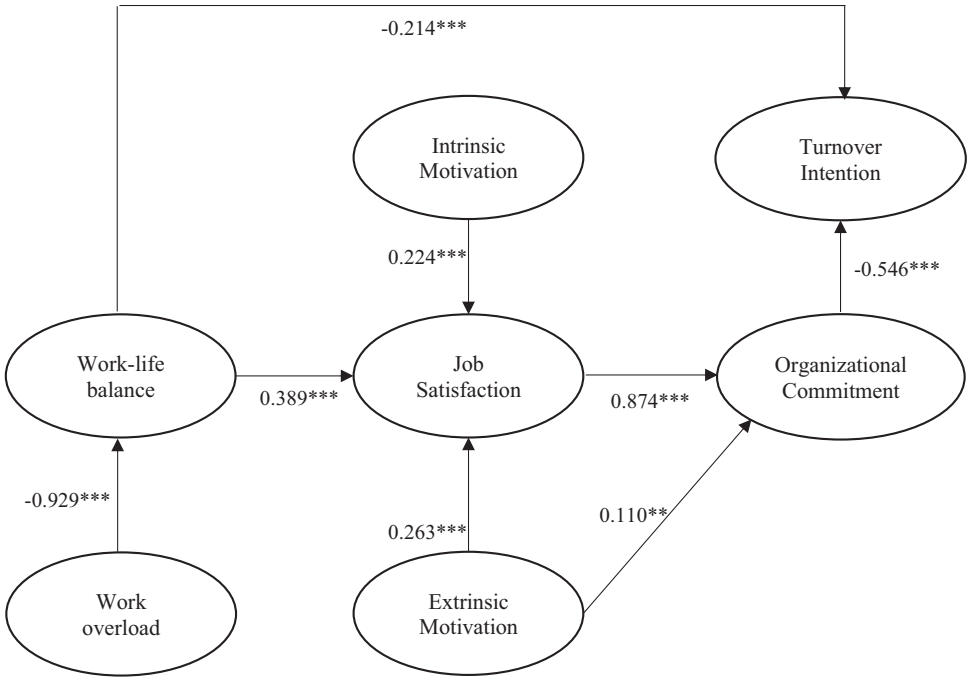

Figure 3 **Graphical depiction of significant results for the base model**

overload and turnover intention. In this model, and as expected, the relationships between work overload and work–life balance, and between work–life balance and turnover intention, are negative and statistically significant. More importantly, the path between work overload and turnover intention is no longer significant. These results show that work–life balance absorbs the effect of work overload on turnover intention. A X^2 difference test comparing the base model with either the alternative model 1 or the alternative model 2 suggests that the former has a better fit to the data. Following the results from the second alternative model, we estimate an alternative model 3, in which we replicate our base model and include one direct path between work overload and turnover intention. The results show that this additional relationship is not statistically significant and thus support the intervening role of work–life balance in the relationship between work overload and turnover intention. Additionally, all remaining coefficients are qualitatively similar to the base model. In this case, where an alternative model is built by adding one or more paths (in contrast to the previous alternative models), a non-significant X^2difference test suggests that the alternative model is not better fitting than the base model (Kline 2016), and, thus, we can reject the alternative model 3. In the alternative model 4, we exclude work–life balance from the base model and find that the direct relationship between work overload and job satisfaction is negative and significant (coeff. = −0.349, $p < 0.01$). When we exclude work–life balance and job satisfaction from the base model and add a direct path between work overload and organisational commitment (alternative model 5), we find a negative and significant relationship between work overload

Table 5 **Results of SEM analyses**

Pred. sign	Independent variable	Dependent variable	Base model	Model1	Model2	Model3	Model4	Model5	Model6
			Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.
−	Work overload	Work–life balance	−0.929***		−0.926***	−0.929***			−0.926***
		Turnover intention		0.364***	−0.113	−0.153			
		Job satisfaction					−0.349***		
		Organisational commitment						−0.306***	
+	Work–life balance	Job satisfaction	0.389***			0.389***			0.445***
−		Turnover intention	−0.214***		−0.530**	−0.360*			−0.213***
+	Intrinsic motivation	Job satisfaction	0.224***			0.224***	0.255***		
+		Organisational commitment	−0.050			−0.050	−0.048	0.175***	
+	Extrinsic motivation	Job satisfaction	0.263***			0.263***	0.246***		
+		Organisational commitment	0.110**			0.110**	0.105**	0.324***	
+	Job satisfaction	Organisational commitment	0.874***			0.874***	0.879***		0.895***
−	Organisational commitment	Turnover intention	−0.546***			−0.545***	−0.633***	−0.618***	−0.546***
Model fit		*N*	301	301	301	301	301	301	301
		X^2	933.559	62.000	230.919	932.935	655.524	501.372	611.403
		Df	452	13	63	451	289	223	247
		p-value	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		CMINDF	2.065	4.769	3.665	2.069	2.268	2.248	2.475
		CFI	0.929	0.966	0.949	0.929	0.924	0.932	0.937
		TLI	0.922	0.945	0.937	0.921	0.915	0.923	0.929
		RMSEA	0.059	0.112	0.094	0.060	0.065	0.064	0.070
Model comparison		X^2 difference		4910.71	3138.61	0.62	1786.39	2443.24	901.21
		Df		36	28	1	8	14	15
		p-value		$p < 0.01$	$p < 0.01$	$p = 0.43$	$p < 0.01$	$p < 0.01$	$p < 0.01$

Note: ***, ** and * indicates $p < 0.01$, $p < 0.05$ and $p < 0.10$, respectively, two-tailed test. Standardised coefficients are presented. First column reports predicted sign of the relationships.

and organisational commitment (coeff. = −0.306, $p < 0.01$).[10] The results from alternative models 4 and 5 show that work overload is directly related to job satisfaction and organisational commitment when work–life balance is not considered. Finally, the sixth alternative model considers our base model but excludes the intrinsic motivation and extrinsic motivation variables. The idea is to investigate the relevance of the motivation variables in our model by comparing this model with our base model. We find that all our previous results hold and, more importantly, the X^2 difference test comparing this model and our base model is significant ($p < 0.01$), indicating that the base model is a better fitting model (Kline 2016). Consequently, after testing six alternative models, we conclude that our base model is the best-fitting model (Kline 2016).[11]

Multi-group analysis for hypothesised moderating effects

To test the hypothesised moderating effects of motivation, we apply multi-group analysis to our base model. Using the motivation variable, we divide the entire sample into two groups: the first group consists of 107 auditors who have high motivation (high motivation group); the second group comprises the remaining 194 auditors (low motivation group). This allows us to use both types of motivation (intrinsic and extrinsic) and select those who have high motivation on both constructs simultaneously. Prior research advocates that unequal sample size of groups may be problematic for multi-group analysis (i) due to its large effect on the constrained estimates and (ii) because a large sample has the power to demonstrate statistical significance even when the effect is subtle, while a small sample has little power to demonstrate statistical significance (Acock 2013). To mitigate this concern, we randomly generate a subsample of 107 auditors from the low motivation group of 194 auditors and perform multi-group analysis for two groups with equal sample size (107 auditors from the high motivation group and 107 auditors from the low motivation group). We use a X^2 difference test to compare an unrestricted model (where structural paths are allowed to differ for the two motivation groups) to a restricted model (where structural paths are constrained to be the same for the two motivation groups). The results are presented in Table 6. We find that the models differ significantly ($p < 0.01$), which means that an unrestricted model fits the data better than a restricted model, indicating that the two groups, divided by the moderating variable, are significantly different from each other. Nevertheless, our moderation hypotheses are only partially supported.

Specifically, we do not find evidence that motivation moderates the relationship between work overload and work–life balance, since the X^2 statistic does not reveal a significant difference ($p > 0.10$). Hence, we do not find support for H2a.

However, Table 6 reveals a strong moderating effect of motivation on the relationships between work–life balance and job satisfaction, and work–life balance and turnover intention, supporting H2b and H2c, respectively. Relative to the former relationship, the path coefficient is stronger for auditors with low motivation (coeff. for low motivation group = 0.462, $p < 0.01$; coeff. for high motivation group = 0.342, $p < 0.01$), and the two coefficients are significantly different ($p < 0.05$). Regarding the relationship work–life balance – turnover intention, the path coefficient is significant for the low motivation group (coeff. = −0.427, $p < 0.01$) but not significant for the high motivation group (coeff. = −0.122, $p > 0.10$). Nonetheless, the two coefficients are significantly different ($p < 0.01$). Hence, as expected, our results suggest that work–life balance is more important for auditors with low motivation in terms of their job satisfaction and intention to leave the organisation because the (dis)equilibrium between the personal and professional spheres cannot be compensated by motivation. These results extend prior literature suggesting a beneficial moderation effect of motivation on individual well-being outcomes (e.g., Fernet et al. 2004; Trépanier et al. 2013).

Although we did not hypothesise, our results reveal a strong moderating effect of motivation on the relationship between organisational commitment and turnover intention. The path coefficient is weaker for auditors with low motivation (coeff. for low motivation group = −0.364, $p < 0.01$; coeff. for high motivation group = −0.595, $p < 0.01$), and the two coefficients are significantly different ($p < 0.01$). In this case, our results suggest that motivation reinforces the effect of organisational commitment on turnover intention.

A possible explanation for rejecting H2a is the intervening role of work–life balance in the relationship between work overload and turnover intention. In fact, when we perform multigroup analysis for a simple model with a unique relationship between work overload and turnover intention, untabulated results show that the path coefficient is significant for the low motivation group (coeff. = −0.482, $p < 0.01$) but not significant for the high motivation group (coeff. = −0.145, $p > 0.10$), and the two coefficients are significantly different ($p < 0.01$). Similarly, when we apply multigroup analysis to our base model without work–life balance and linking work overload to job satisfaction and turnover intention, in untabulated results we find a strong moderation of motivation on the relationships work overload – job satisfaction and work overload – turnover intention. These results show that motivation moderates the effects of work overload when work–life

Table 6 **Results for the multi-group analysis for motivation**

Independent variable	Dependent variable	Multi-group analysis for motivation		
		Low motivation ($N = 107$)	High motivation ($N = 107$)	X^2 difference
Work overload	Work–life balance	−0.874***	−0.956***	2.505
Work–life balance	Job satisfaction	0.462***	0.342***	5.565**
	Turnover intention	−0.427***	−0.122	9.599***
Intrinsic motivation	Job satisfaction	0.254***	0.049	0.716
	Organisational commitment	−0.081	−0.103	0.183
Extrinsic motivation	Job satisfaction	0.259***	0.085	0.000
	Organisational commitment	0.069	0.058	0.606
Job satisfaction	Organisational commitment	0.919***	0.815***	1.109
Organisational commitment	Turnover intention	−0.364***	−0.595***	7.954***
Model comparison statistics	*N*			214
	X^2 unrestricted (restricted)			1593.241 (1638.506)
	Df unrestricted (restricted)			958 (969)
	p-value			0.000
	CMINDF			1.663
	CFI			0.863
	TLI			0.858
	RMSEA			0.079
	X^2 difference			45.26
	Df			11
	p-value			$p < 0.01$

Note: *** and ** indicates $p < 0.01$ and $p < 0.05$, respectively, two-tailed test. Standardised coefficients are presented.

balance is not considered in the model and are aligned with those from Table 5.

Robustness tests

We perform several additional tests to ensure that our findings are robust. First, we estimate the base model by adding one control path from risk attitude to turnover intention.[12] The untabulated results show a positive and significant relationship between risk attitude and turnover intention ($p < 0.01$), which indicates that auditors with a greater risk tolerance have a higher turnover intention (e.g., MacCrimmon and Wehrung 1985). More importantly, we find that the results remain qualitatively unchanged since all the results that were previously (non-) significant are still (non-) significant.

Second, we estimate a series of SEM models that control for auditor's age, auditing experience, professional experience, company tenure, tenure in the position and position.[13] We implement these controls by modelling paths between each of the control variables and each of the exogenous and endogenous variables included in our base model. In untabulated results, we find that our statistical inferences are robust across the various tests. Additionally, we find that professional experience, auditing experience, company tenure and tenure in the position are significantly and positively associated with work–life balance, intrinsic motivation and organisational commitment. In addition, age is significantly and positively associated with intrinsic motivation, while tenure in the position is significantly and positively associated with extrinsic motivation. Regarding position, results show that the positions of partner, manager/director, senior/supervisor and staff/associate/trainee are significantly and positively associated with organisational commitment. Additionally, the positions of manager/director, senior/supervisor and staff/associate/trainee are significantly and positively associated with work overload, while the position of partner is significantly and positively associated with job satisfaction, and significantly and negatively associated with turnover intention.

Third, our sample includes partners who may hold equity in the auditing firms. This issue may give rise to the criticism that they do not experience workload and turnover intention in the same way as non-partners in the sample (as also suggested by previous results). To overcome this criticism, we estimate our base model in a sample without partners (the small number of responses from partners prevents running our model in a sample composed exclusively of partners).[14] The results are inferentially identical to those reported in Table 5, with similar significance levels for the hypothesised paths.

To ensure that the multi-group results are robust, we create an alternative motivation variable that has the value of 1 if the average of all items of intrinsic and extrinsic motivation is higher than the median, and 0 otherwise. Next, using this dummy variable, we split our sample into two samples (randomly generating a subsample from the group with higher number of observation) and apply a X^2 difference test to compare an unrestricted model to a restricted model. Similar to our main results, we find evidence of the moderating effect (and in the same direction) of motivation on the relationships work–life balance and job satisfaction and work–life balance and turnover intention (but not on the relationship work overload and work–life balance).

Additional evidence

Prior research suggests that auditors working in Big4 firms, compared to those working in other auditing firms, can have different perceptions of their work conditions (Clabaugh et al. 2000; Jackson et al. 2023), as well as different work-related behavioural outcomes (e.g., Patten 1995; Persellin et al. 2019; Jackson et al. 2023). Therefore, in this section, we explore whether working in a Big4 firm has an impact on our model of auditors' turnover intention.

We begin by comparing our model variables for Big4 (164 auditors) and Non-Big4 (135 auditors) firms.[15] Table 7 shows that auditors working in Big4 firms, compared to those working in Non-Big4 firms, have higher work overload (difference in means t-test $= -3.77$; $p < 0.01$) and turnover intention ($t = -3.95$; $p < 0.01$). Conversely, auditors working in Non-Big4 firms report higher levels of work–life balance ($t = 5.28$; $p < 0.01$), intrinsic motivation ($t = 2.47$; $p < 0.05$) and job satisfaction ($t = 2.76$; $p < 0.01$). This evidence is consistent with prior research showing that (i) opportunities for work–life balance in Big4 firms tend to be consistently ranked below other accounting firms (Buchheit et al. 2016), (ii) job satisfaction is higher for auditors at mid-tier and smaller audit firms then for Big4 firms (Patten 1995; Persellin et al. 2019) and (iii) auditors working in Big4 firms are more likely to make career changes (Gertsson et al. 2017).

Overall, this first evidence suggests that auditors working in Big4 firms, compared to those working in Non–Big4 firms, may experience turnover intention differently due to their higher workload and lower levels of work–life balance, intrinsic motivation and job satisfaction.

Next, we estimate the base model by adding control paths from the type of auditing firm (Big4) to each of the exogenous and endogenous variables included in our base model. Untabulated results show that working in a Big4 firm is significantly and positively associated with work overload, organisational commitment and turnover intention, and significantly and

Table 7 Difference in means between Non-Big4 and Big4 firms

Variable	Non-Big4 ($N = 135$)	Big4 ($N = 164$)	*T*-test
Work overload	3.30	3.70	−3.77***
Work–life balance	2.81	2.23	5.28***
Intrinsic motivation	3.28	3.12	2.47**
Extrinsic motivation	2.79	2.82	−0.40
Job satisfaction	5.61	5.21	2.76***
Organisational commitment	5.05	5.02	0.25
Turnover intention	3.18	4.03	−3.95***

Note: Unequal variances are considered in the *t*-test for all the cases where the test of equal variances rejects the null hypothesis. Some differences are computed with fewer observations than the grand total reported due to missing values. *** and ** indicate the significance of the *p*-value at < 0.01 and < 0.05, respectively, all *p*-values are two-tailed.

negatively associated with work–life balance and intrinsic motivation.[16] These results are generally consistent with the prior analysis. Given these significant differences, and to provide a more in–depth exploration of the effects of working in a Big4 firm in our model of auditors' turnover intention, we perform a multigroup analysis for equal sized subsamples of respondents working in Big4 firms (a randomly generated group of 135 auditors out of a total of 164) and Non-Big4 (135 auditors).

Table 8 supports our conjecture that the theoretical model presented in this study is different for auditors working in a Big4 firm compared to those working in other types of firms as the two groups differ significantly from each other ($p < 0.01$). Our findings also show a strong moderating effect of the type of auditing firm on the relationships between (i) work–life balance and turnover intention (X^2 difference test $p < 0.01$), (ii) extrinsic motivation and job satisfaction (X^2 difference test $p < 0.05$), (iii) extrinsic motivation and organisational commitment (X^2 difference test $p < 0.01$), (iv) job satisfaction and organisational commitment (X^2 difference test $p < 0.01$) and (v) organisational commitment and turnover intention (X^2 difference test $p < 0.05$). Specifically, our findings suggest that, in Big4 firms, work–life balance is negatively related to turnover intention, and extrinsic motivation is positively related to job satisfaction and organisational commitment. Conversely, in Non-Big4 firms, the relationships between job satisfaction and organisational commitment, and this latter variable and turnover intention are stronger.

These findings advance prior literature regarding differences in work-related behaviours in Big4 and Non-Big4 firms. Specifically, we not only document differences in work overload, work–life balance, intrinsic motivation and job satisfaction, but also show how these differences affect the turnover intentions of auditors working in these firms. For example, our study suggests that job satisfaction is not only higher in Non-Big4 firms, similar to prior studies by Patten (1995) and Persellin et al. (2019), but also more important for these companies to boost organisational commitment and, therefore, reduce turnover intention. Moreover, previous studies document that large public accounting firms have a more stressful work environment than do smaller accounting firms (Gaertner and Ruhe 1981), which can lead to a greater job dissatisfaction (Collins and Killough 1992) and, ultimately, to a desire to leave. Our study shows similar differences in work overload, job satisfaction and turnover intention, but also suggests how Big4 and Non-Big4 firms can manage auditors' turnover intentions. For Big4 firms, turnover intention can be mitigated via work–life balance or organisational commitment. These firms can act upon these drivers by either reducing work overload (which has a negative impact on work–life balance) or increasing intrinsic/extrinsic motivation (which have positive effects on job satisfaction and, subsequently, on organisational commitment). In these companies, extrinsic motivation can also spur job satisfaction, which also has positive effects on organisational commitment. Conversely, in Non-Big4 firms, the only path to reduce turnover intention is via organisational commitment. These companies can increase organisational commitment by boosting job satisfaction, which can be achieved with intrinsic motivation and work–life balance.

Conclusion

This study develops and tests a holistic model of auditors' turnover intention, a proxy for voluntary turnover. This phenomenon is extremely important in auditing firms that historically have very high turnover rates (Nouri 2016), which is usually identified as one of the major problems auditing firms face (ACCA and ACRA 2012; ACCA 2020; Nouri and Parker 2020). In our theoretical framework, we integrate two streams of research – one related to job satisfaction and organisational commitment (e.g., Donnelly et al. 2003; Parker and Kohlmeyer 2005; Hall and Smith 2009; Cannon and Herda 2016) and another related to work overload and/or work–life balance (e.g., Greenhaus et al. 1997; Pasewark and Viator 2006; Ahuja et al. 2007; Jones et al.

Table 8 **Results for the multi-group analysis for type of auditing firm**

Pred. sign	Independent variable	Dependent variable	Multi-group analysis for type of auditing firm		
			Non-Big4 ($N = 135$)	Big4 ($N = 135$)	X^2 difference
–	Work overload	Work–life balance	−0.932***	−0.928***	0.390
+	Work–life balance	Job satisfaction	0.375***	0.355***	1.265
–		Turnover intention	0.011	−0.406***	20.637***
+	Intrinsic motivation	Job satisfaction	0.276***	0.181**	0.150
+		Organisational commitment	−0.067	−0.032	0.178
+	Extrinsic motivation	Job satisfaction	0.143	0.386***	4.018**
+		Organisational commitment	0.007	0.303***	7.102***
+	Job satisfaction	Organisational commitment	0.941***	0.751***	16.299***
–	Organisational commitment	Turnover intention	−0.712***	−0.383***	5.207**
Model comparison statistics		*N*			270
		X^2 unrestricted (restricted)			1601.50 (1714.28)
		Df unrestricted (restricted)			958 (970)
		p-value			0.000
		CMINDF			1.67
		CFI			0.896
		TLI			0.892
		RMSEA			0.077
		X^2 difference			112.79
		Df			12
		p-value			$p < 0.01$

Note: *** and ** indicates $p < 0.01$ and $p < 0.05$, respectively, two-tailed test. Standardised coefficients are presented. First column reports predicted sign of the relationships.

2010; Persellin et al. 2019; Smith et al. 2020) – and also develop the role of motivation as a mechanism to mitigate negative effects in the workplace (e.g., Deci and Gagné 2005; Trépanier et al. 2013).

Based on questionnaire data from 301 auditors, this study uses SEM to test our theoretical model. Our results show a negative relationship between work overload and work–life balance and a positive relationship between work–life balance and job satisfaction. We also document a negative relationship between work–life balance and turnover intention but only for Big4 firms, Additionally, we find a positive relationship between job satisfaction and organisational commitment, and a negative relationship between this latter variable and turnover intention and these relationships are stronger for Non-Big4 firms. Regarding motivation, we find that intrinsic motivation is positively related to job satisfaction but not to organisational commitment. Conversely, extrinsic motivation is positively related to job satisfaction and organisational commitment but only in Big4 firms. These findings advance the study of motivation in auditing as prior research has only focused on a limited set of motivational factors and work-related behavioural outcomes (e.g., Quarles 1994; Kadous et al. 2019; Kadous and Zhou 2019). The non-result for the relationship between intrinsic motivation and organisational commitment can be explained by the fact that, in the case of this sample, employers may not be offering conditions considered necessary by auditors to activate their intrinsic motivation and, therefore, commit to their employer. Previous studies show contradictory evidence regarding the behavioural effects of offering rewards that meet the preferences of employees (Rynes et al. 2004; Lourenço 2020). Alternatively, this non-result can be due to an indirect relationship between intrinsic motivation and organisational commitment via job satisfaction. These findings can help to answer the question posed by Christensen et al. (2021) regarding the type of interventions audit firms can implement to offset the effects of burnout and distraction among junior auditors. Specifically, our study suggests that intrinsic and extrinsic motivation can play an important role in stimulating more positive attitudes on auditors.

Finally, we do not find evidence that motivation moderates the relationship between work overload and work–life balance, but we do find a strong moderating effect of motivation on the relationships between work–life balance and job satisfaction, and work–life balance and turnover intention. Hence, our results suggest that work–life balance is more important for auditors with low motivation in terms of their job satisfaction and intention to leave the organisation because the disequilibrium between the personal and professional spheres cannot be compensated for by motivation. These results add to self-determination theory (e.g., Deci and Ryan 2000; Deci and Gagné 2005) by uncovering the role of motivation as a mechanism to mitigate negative effects in workplace settings. They also address a call in the literature for more research on the moderator role of motivation (Trépanier et al. 2013; Van der Hauwaert et al. 2022).

This study has practical implications for decision makers in auditing firms and auditing regulatory bodies such as ACCA and ACRA. First, this study shows the importance of managing adequately the workload of auditors as it may negatively impact work–life balance. Even though, in the short-term, increasing the workload of auditors can increase profits as new auditors are not hired, in the long-term, the heavy workload may have a huge cost in terms of job satisfaction, organisational commitment and, ultimately, turnover. Second, our study suggests that work–life balance can directly reduce turnover intention in Big4 firms, while this reduction in Non-Big4 firms occurs via organisational commitment (a channel that is weaker for Big4 firms). This evidence implies specific strategies for different types of auditing companies to reduce the turnover intentions of their auditors. Third, given that work–life imbalance, resulting from work overload, may contribute to the escalation of auditors' turnover intention, our study proposes that motivation can alleviate this impact. Therefore, auditing companies may develop recruitment policies targeting candidates with high motivation, who are more resilient to the conflicts of the professional and personal spheres.

Our results should be interpreted in light of the limitations of this study. First, and although we take several steps to ensure the reliability of the data (i.e., pretest of instrument, construct and content validity), our study shares the common drawbacks of survey studies, such as social desirability bias (Podsakoff et al. 2003). To mitigate this risk, we used neutral wording in the questions, assured the respondents that there were no right or wrong answers, and collected anonymous responses so that respondents did not fear that their answers could be traced. Second, because the questionnaire was available in a website and participants could have shared the questionnaire link with their colleagues, we cannot confidently compute the response rate. However, this method allowed us to enlarge our sample and, hence, use more sophisticated and robust statistical methods in our analyses. Finally, because our study is cross-sectional, we cannot empirically draw conclusions about the causality of the relationships we document. The direction of the relationships can only be developed at a theoretical level.

This study provides multiple avenues for future research. For example, it would be interesting to develop our study in a longitudinal manner, or to use experimental methodologies, in order to infer the causality of the relationships we report (Lourenço 2019). Another

possibility is to explore is the comparison of external and internal auditors, as these groups may experience different workloads and turnover intentions.

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Data Availability Statement

The datasets generated and analysed during the current study are not publicly available due the fact that they constitute an excerpt of research in progress.

Notes

1 IBISWorld is a global industry research firm that provides detailed reports and analysis on various industries used by banks and financial firms, academic institutions, government organisations, consulting firms and corporations.
2 Data retrieved from https://www.ibisworld.com/portugal/industry-statistics/accounting-auditing/3880/ on 13 October 2023.
3 Using a sample of AICPA members, Greenhaus et al. (1997) found evidence of a relationship between work overload, work–home conflict and turnover intention (i.e., intention to leave public accounting). Ahuja et al. (2007) achieve similar results for information technology professionals.
4 The original dataset contained 398 valid observations. We removed 42 responses provided by non-auditors and 55 by internal auditors.
5 CFI compares how much better an implied model fits as compared to a null model, TLI contains a penalty for lack of parsimony and RMSEA adjusts for both sample size and number of degrees of freedom (Chen et al., 2001). CFI and TLI close to 1 (Hu and Bentler, 1999), RMSEA less than 0.08 (Browne and Cudeck, 1989) and CMINDF ratio less than 5 (Wheaton et al., 1977) reflect a good model fit.
6 As suggested by Ady (1994), we used a double translation method to ensure the quality of translation.
7 We choose to use SEM because it compensates for the measurement error in the latent variables and allows for the simultaneous examination of relationships among multiple dependent variables. Moreover, according to Kline (2016), SEM remains a large-sample technique, which is the case for our study.
8 We use the full information maximum likelihood (FIML) estimation method for both the measurement model and structural model. FIML is superior to other imputation techniques as it gives unbiased estimates of means, variances and other parameters (Wothke, 2000).
9 Additionally, the results for the remaining relationships are qualitatively unchanged as all the results that were previously significant are still significant in this model.
10 Consistent with the prior discussion of the base model, in this alternative model there is a positive and significant relationship between intrinsic motivation and organisational commitment as job satisfaction is not considered.
11 We also estimate our base model with additional relationships between (i) work overload and intrinsic motivation, (ii) work–life balance and intrinsic motivation, (iii) work–life balance and extrinsic motivation and iv) work overload and job satisfaction. Again, untabulated results show that our base model fits the data better than the model with these additional paths.
12 We use the variable risk attitude to control for risk-seeking behaviours in turnover intention. Extant research suggests that turnover intention may be an indicator of willingness to engage in risky behaviour (MacCrimmon and Wehrung, 1985). Moreover, analysing the relationship between turnover intentions and actual turnover, Allen et al. (2005) find that this relation is stronger for individuals with low risk aversion. We assess risk attitude by adapting an instrument developed by Pennings and Smidts (2000) for our sample. We ask respondents to indicate on a 7-point Likert scale the level of agreement with each of three items related to risk attitude, ranging from 1 = strongly disagree to 7 = strongly agree. Factor analysis of the variable 'risk attitude' reveals that the three questions load on a single factor. All standardised loadings are significant ($p < 0.01$) and equal or greater than 0.50, AVE is 0.63 and CR is 0.85.
13 Since past research shows that demographic characteristics influence individual perceptions, behaviours and attitudes (e.g., Burdett et al., 2011; Lok and Crawford, 2001; Martin and Edwards, 2009), we control for their effects. The respondent's professional experience, auditing experience, company tenure, tenure in the position, position and age are self-reported measures that are collected via the questionnaire. The continuous variables were transformed into their natural logarithms to mitigate their high skewness and kurtosis.
14 We also exclude three responses that belong to the 'Other' position as the descriptions suggested that they may also hold equity in the auditing firms.
15 To measure the type of auditing firm, we ask respondents to indicate their employer from three options: (i) Big 4 (Deloitte, EY, KPMG, PwC); (ii) other firms included in international networks and (iii) small firm of Chartered Accountants. Based on these responses, we create a dummy variable that is equal to 1 if the respondent indicates working in a Big4 company, and 0 otherwise.
16 The results for the remaining relationships are inferentially identical to those reported for the base model.

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APPENDIX A: Measurement instrument

Work overload *(1 = I completely disagree, 5 = I completely agree)*
Indicate your level of agreement with the following statements:

Item	Label
I am responsible for an almost unmanageable number of projects or assignments at the same time.	wol1
I simply have more work to do than can be done in an ordinary day.	wol2
I feel that I just don't have time to take an occasional break.	wol3
Overall, I have too much work to do.	wol4

Work–life balance *(1 = I completely disagree, 5 = I completely agree; reverse coded)*
Indicate your level of agreement with the following statements:

Item	Label
The demands of my work interfere with my personal life (home, family or leisure time).	wlb1
The time demands of my job make it difficult to attend to home, family or personal responsibilities.	wlb2
Things I want to do at home do not get done because of the demands of my job.	wlb3
My job produces stress that makes it difficult to fulfil personal or family duties.	wlb4
Due to work-related duties, I have to make changes to my plans for personal time or family activities.	wlb5
The demands of my job make it difficult to be relaxed at home and with friends.	wlb6

Intrinsic motivation *(1 = Never or almost never true, 4 = Always or almost always true)*
Please rate each item in terms of how true it is of you at work:

Item	Label
I want to find out how good I really can be at my work.	intmot1
I want my work to provide me with opportunities for increasing my knowledge and skills.	intmot2
Curiosity is the driving force behind much of what I do.	intmot3
I prefer to figure things out for myself.	intmot4
It is important for me to have an outlet for self-expression.	intmot5
What matters most to me is enjoying what I do.	intmot6
No matter what the outcome of a project, I am satisfied if I feel I gained a new experience.	intmot7
I'm more comfortable when I can set my own goals.	intmot8
I enjoy doing work that is so absorbing that I forget about everything else.	intmot9
It is important for me to be able to do what I most enjoy.	intmot10
I enjoy trying to solve complex problems.	intmot11
I enjoy tackling problems that are completely new to me.	intmot12
The more difficult the problem, the more I enjoy trying to solve it.	intmot13
I prefer work I know I can do well over work that stretches my abilities (reverse coded).	intmot14
I enjoy relatively simple, straightforward tasks (reverse coded).	intmot15

Extrinsic motivation *(1 = Never or almost never true, 4 = Always or almost always true)*
Please rate each item in terms of how true it is of you at work:

Item	Label
I am strongly motivated by the recognition I can earn from other people.	extmot1
I want other people to find out how good I really can be at my work.	extmot2
To me, success means doing better than other people.	extmot3
I have to feel that I'm earning something for what I do.	extmot4
I believe that there is no point in doing a good job if nobody else knows about it.	extmot5
I'm concerned about how other people are going to react to my ideas.	extmot6
I prefer working on projects with clearly specified procedures.	extmot7
I'm less concerned with what work I do than what I get for it.	extmot8
I am not that concerned about what other people think of my work (reverse coded).	extmot9
I prefer having someone set clear goals for me in my work.	extmot10

I am strongly motivated by the money I can earn.	extmot11
I seldom think about salary and promotions (reverse coded).	extmot12
I am keenly aware of the income goals I have for myself.	extmot13
As long as I can do what I enjoy, I'm not that concerned about exactly what I'm paid (reverse coded).	extmot14
I am keenly aware of the promotion goals I have for myself.	extmot15

Job satisfaction *(1 = I completely disagree, 7 = I completely agree)*
Indicate your level of agreement with the following statements:

Item	Label
All in all, I am satisfied with my job.	jobsat1
In general, I do not like my job (reverse coded).	jobsat2
In general, I like working here.	jobsat3

Organisational commitment *(1 = I completely disagree, 7 = I completely agree)*
Indicate your level of agreement with the following statements:

Item	Label
I am willing to put in a great deal of effort beyond that normally expected in order to help this organisation be successful.	orgcom1
I talk up this organisation to my friends as a great organisation to work for.	orgcom2
I would accept almost any type of job assignment in order to keep working for this organisation.	orgcom3
My values and the organisation's values are very similar.	orgcom4
I am proud to tell others that I am part of this firm.	orgcom5
This organisation really inspires the very best in me in the way of job performance.	orgcom6
I am extremely glad that I chose this organisation to work for over others I was considering at the time I joined.	orgcom7
For me this is the best of all possible organisations for which to work.	orgcom8
I really care about the fate of this organisation.	orgcom9

Turnover intention

Regarding your current job: *(1 = Not at all likely, 7 = Extremely likely)*

Item	Label
How likely is it that you will actively look for a new job in the next year?	turnov1

Indicate your level of agreement with the following statements:
(1 = Strongly disagree, 7 = Strongly agree)

Item	Label
I often think about quitting.	turnov2
I will probably look for a new job in the next year.	turnov3

Risk Attitude *(1 = Strongly disagree, 7 = Strongly agree)*

Indicate your level of agreement with the following statements:

Item	Label
I am willing to take risks in order to realise higher annual compensation.	risk1
I like taking risks.	risk2
In my professional life, I am willing to take risks in order to obtain a higher return.	risk3