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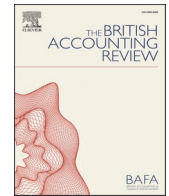
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# On the role and effects of supervisor feedback sign in auditing: Evidence from a cohort of early career auditors.

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## ABSTRACT

Supervisor feedback is essential for training and socialising early career auditors. One fundamental aspect and choice of a supervisor's feedback practice and style is whether to focus on encouraging good or discouraging poor performance. We acknowledge that early career auditors likely receive feedback on both good and poor performance in ongoing and extended feedback relationships with their closest supervisor. A work-life reality that implies that the effects of supervisors' inclinations towards a specific performance feedback sign must be assessed within a frame in which they coexist to varying degrees. We generate hypotheses on how the feedback sign from the closest supervisor affects early career auditors' underreporting of time and intrinsic work motivation, which are two matters related to audit quality. We found that supervisor feedback on negative performance was associated with increased underreporting of time and decreased intrinsic motivation. Feedback on positive performance lessens underreporting of time and supports the development of intrinsic motivation. In summary, our results support emphasising the type of performance for which supervisors choose to provide feedback.

## 1. Introduction

Performance feedback is central to early career auditors' work lives, as they learn about audit work (Larson, 1984; DeZoort & Lord, 1997; Allen & Meyer, 1990; Dirmsmith & Covaleski, 1985; Andiola, 2014; Church, 2014; Westermann et al., 2015; Andiola & Bedard, 2018; de Vries et al., 2022). Descriptions of the early time at an audit firm stress that it is tumultuous for young auditors because, when confronted with real accounting problems, they discover how little their academic training helps them solve those problems (Church, 2014; de Vries et al., 2022). To develop professional competence, early career auditors require continuous feedback from their supervisors on their performance (Westermann et al., 2015), which is delivered mainly through interactions and communication with supervisors (Dirsmith & Covaleski, 1985).

For a supervisor, what is at stake in a feedback situation is finding ways to communicate mistakes and poor performance to discourage negative behaviours (Larson, 1984; Andiola & Bedard, 2018), which could eventually threaten audit quality. Concomitantly, supervisors need to communicate good performance to encourage positive behaviours (ibid) to build audit quality. Despite the centrality of early career auditors receiving feedback on both positive and negative performance from their closest supervisors (Andiola, 2014; DeZoort & Lord, 1997), in her review of feedback research in auditing, Andiola (2014) concluded that there is an

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evident lack of empirical studies on how a supervisor's choice of feedback on positive and negative performance influences junior auditors' behaviour. Our study of early career auditors is an attempt to meet her call for such research, and we see two interrelated ways in which our study on the impact of the sign of performance feedback from the closest supervisor is important for the auditing literature.

First, psychology and management studies conclude that feedback on negative performance often has fewer desirable effects on subordinates than feedback on positive performance (Ashford, 1989; Baron, 1988; Fedor et al., 2001). Consequently, managers are often reluctant to provide feedback on negative performance (Larson, 1984; Baron, 1988; Ashford, 1989; Fedor et al., 2001; Andiola, 2014). However, this finding is not fully transportable to the audit firm setting because it is a highly legalistic milieu intense in negative feedback (Andiola, 2014; Church, 2014) and standardised and formal feedback practices, such as work paper reviews, often have error-detecting purposes (Lambert & Agoglia, 2011; Andiola & Bedard, 2018). How supervisors choose to either reinforce or balance their focus on compliance and errors in their extended and ongoing feedback relationships with junior auditors is relevant to consider. However, the interaction and feedback style of the individual supervisor is difficult for firms to control or streamline, as this is a coaching or leadership attribute. Therefore, instead of focusing on a specific engagement or activity, this study views supervisor feedback as an ongoing interaction over a day, week, or month (Anderson-Gough et al., 2001; Dirsmith & Covaleski, 1985; Westermann et al., 2015), during which the early career auditor likely receives feedback on both good and poor performance from the closest supervisor.

Such a description of junior auditors' feedback environments in relation to their closest supervisor is misaligned with both dichotomous conceptualisations of feedback signs as either positive or negative in auditing (Andiola, 2014; DeZoort & Lord, 1997) and experimental studies in which feedback is contrasted or measured as positive or negative for a specific and delimited feedback task or experience (Cianci & Bierstaker, 2009; Andiola & Bedard, 2018). Our contribution is that we focus on supervisors' interaction and communication styles when delivering feedback to subordinates and how this, at least for some junior auditors, implies the coexistence of positive and negative supervisor performance feedback. This research focus allows us to better understand the independent and potentially interdependent effects of a supervisor's choice of interaction and communication style related to the signs of performance feedback.

The second contribution comes from theorising and empirically testing hypotheses about the effects of supervisors' feedback signs on early career auditors' underreporting of time behaviour (Otey & Pierce, 1995; Weber & Stefaniak, 2018) and the development of their intrinsic motivation for auditing tasks (Kadous & Zhou, 2019; Westermann et al., 2015) – two outputs that we use to meet Andiola's call for research that relates feedback to auditors' attitudes and behaviours (2014). Underreporting of time and intrinsic motivation are two central outcomes in the development of early career auditors that capture important functions and dysfunctions in the auditing setting, and these two outcomes are closely related to audit quality (Kadous & Zhou, 2019; Otey & Pierce, 1995). To date, these two outcomes have not been related to signs of performance feedback from supervisors in previous research, which is surprising because of the evident theoretical connections between feedback signs from supervisors and these two outcomes (Deci, 1972; DeZoort and Lord, 1997; Ryan & Deci, 2000a, 2000b).

Methodologically, we took the rare opportunity to survey a cohort of early career auditors in Sweden (covering all big accounting or audit firms and a cluster of other firms), all of whom had started their careers as auditors one year earlier. Therefore, we explore and test the effects of supervisor performance feedback signs on a homogeneous sample of individuals who intensively search for and receive feedback on their performance during their first formative year at an auditing firm. In summary, we found that supervisor feedback on negative performance was associated with increased time underreporting of time and decreased intrinsic motivation. Feedback on positive performance lessens underreporting of time and supports the development of intrinsic motivation.

In the next section, we present the background literature on supervisor performance feedback, followed by the development of our hypotheses. The following sections describe the methods used in this study and present the results. The paper ends with a discussion of these findings and their implications.

## 2. Background and literature review

### 2.1. Organisational context of supervisor performance feedback

Feedback to early career employees in audit firms comes in different forms and from different sources (Andiola, 2014). To learn the craft and become socialized into the audit profession, the tight relationship between early career auditors and their closest supervisor (s) is one of the major mediums of feedback (Church, 2014; Dirsmith & Covaleski, 1985; Kornberger et al., 2011; Westermann et al., 2015). Early career auditors receive formal feedback from their supervisors via periodic performance evaluations, coaching notes, and work paper reviews (Andiola, 2014; Andiola & Bedard, 2018; Andiola et al., 2019; Gibbins & Trotman, 2002). Such performance feedback events are planned in time and standardised in content, enabling the evaluation of the general performance of a cohort. Because of the standardised and relatively infrequent nature, senior auditors understand it to be less effective for instructional purposes because 'one size does not fit all' (Westermann et al., 2015, p. 887). When working practically in real time, much feedback given to junior auditors by supervisors is informal, ad hoc, and typically emotionally driven (Andiola, 2014). Field studies on auditing have demonstrated that continuous feedback from supervisors in real time is critical for allowing an early career individual to learn a craft,

and for the profession to secure the reproduction of its technical knowledge base (Church, 2014; Dirsmith & Covaleski, 1985; Kornberger et al., 2011; Westermann et al., 2015). In this sense, capturing the extent to which junior auditors are affected by feedback from close supervisors becomes a matter of understanding a supervisor's general approach to feedback, that is, how feedback is typically delivered and communicated to junior auditors, regardless of whether information about performance emanates from periodic formal feedback events or daily work performance. This is important because a supervisor has great discretion in developing his or her unique approach to feedback because most of the feedback given and received from the closest supervisor occurs in daily interactions with junior auditors (Church, 2014; Dirsmith & Covaleski, 1985; Kornberger et al., 2011; Westermann et al., 2015).

One central dimension of a supervisor's feedback style and approach is the sign of performance feedback as experienced by subordinate early career auditors (Andiola & Bedard, 2018). Positive feedback refers to supervisors noting and communicating their progress and good performance. In contrast, negative feedback refers to a supervisor noting and communicating that an early career auditor has demonstrated unsatisfactory performance and made mistakes (Larson, 1984). In practice, as argued in the Introduction, most supervisors are likely to give feedback on both good and poor performance over different engagements and times. However, when judged from the perspective of the junior auditor receiving feedback, a supervisor likely also displays a central tendency, as a leadership attribute (Andiola, 2014), towards focusing on noting and communicating wrongdoings or 'rightdoings' to instruct and motivate subordinates.

In this study, we focus on the aggregate of interactions and communication between supervisors and subordinates and the milieu in which such interactions occur; we refer to this as the *supervisor performance feedback environment*. When operationalised, we refer to the typical feedback received by the early career auditor from the closest supervisor during a certain period rather than feedback from a specific work or feedback task. We are interested in how junior auditors experience the overall style and focus of supervisors, who provide continuous performance feedback (cf. Andiola, 2014; Dalton et al., 2015; Gibbins & Trotman, 2002). Understood and measured as such, we aimed to capture the communication and interaction style of the supervisor (Dirsmith & Covaleski, 1985) and whether the supervisor focused on noting and communicating poor or good performance, or both, when monitoring, training, motivating, and socialising early career auditors.

### 3. Hypotheses development

#### 3.1. Supervisor performance feedback sign and underreporting of time

The effort and diligence of early career auditors to meet time budgets (Ladva & Andrew, 2014; Otley & Pierce, 1995; Pierce & Sweeney, 2004; Sweeney et al., 2010; Weber & Stefaniak, 2018) relate, among other things, to the monitoring role of supervisor performance feedback (Larson, 1984). One reported detrimental effect of feedback as a monitoring mechanism is that it exerts accountability pressure on the individual (Larson, 1984; DeZoort and Lord, 1997; DeZoort et al., 2006), which might induce dysfunctional and unethical behaviours (Cianci & Bierstaker, 2009) to maintain the impression of being a superior performer (Gibbins & Trotman, 2002; Sweeney et al., 2010). From an audit firm's perspective, time underreporting may not always be viewed as a dysfunction. However, for an individual early career auditor who experiences accountability pressures, the behaviour of dishonest time reporting is dysfunctional and unethical (Sweeney et al., 2010) and may be closely related to other behaviours that could threaten audit quality (Otley & Pierce, 1995). Moreover, several ethnographic studies (Anderson-Gough et al., 1998; Dirsmith & Covaleski, 1985) describe how underreporting of time is widely known and used by early career auditors as well as by auditors who are up for an evaluation of whether they should be allowed to take their next career step (Kornberger et al., 2011); therefore, underreporting of time is a widely known trick of the trade to cope with a tumultuous time and accountability pressures. Although underreporting of time may be a known strategy by early career auditors, it may not necessarily be used. We determine whether the sign of feedback from the closest supervisor affects variation in the underreporting of time as a type of generic behaviour of junior auditors during their first formative time at an auditing firm.

While it is reasonable to predict that negative feedback from a close supervisor results in implicit performance pressure, which, in turn, results in time underreporting as an individual strategy to cope with this pressure (Cianci & Bierstaker, 2009; DeZoort et al., 2006; DeZoort & Lord, 1997; Kornberger et al., 2011), the opposite, that is an opposite effect of positive feedback, may not be equally obvious. Such a hypothesis requires elaboration, as previous theories and supporting experiments in the auditing literature on feedback only elaborate on negative versus positive feedback (cf. Larson, 1984).<sup>1</sup> Thus, the independent effects of positive and negative feedback on the functions and dysfunctions of feedback have not yet been analysed or explicitly theorised. Even if both positive and negative supervisor feedback may mean accountability or performance pressure (DeZoort & Lord, 1997), the pressure effect likely differs in quality depending on whether it is induced by feedback on poor or good performance (cf. Cianci & Bierstaker, 2009).

To support this argument, we rely on social exchange and learning theory on dysfunctional and (un)ethical behaviours in organisations as our starting point (Brown & Trevino, 2006), in which reciprocity between supervisors and subordinates is central (Andiola et al., 2019; Dalton et al., 2015; Dirsmith & Covaleski, 1985). Building on this theory, we believe that receiving feedback on positive performance will lead junior auditors to feel appreciated as members of the audit team and induce a sense of professional competence to contribute to completing the audit. A sense of professional competence will likely lead to increased commitment from the early

<sup>1</sup> In their review article DeZoort and Lord (1997) conceptualised feedback pressure as such, both positive and negative, to lead to an implicit or explicit accountability pressure and negative outcomes. Cianci and Bierstaker (2009) built on this conceptualization, but their hypotheses and design meant that they focused on negative versus positive feedback for (un)ethical behaviors.

career auditor to both the supervisor and the task (Fishbach et al., 2010). That is, by reciprocally honouring and encouraging positive performance feedback from a supervisor, an early career auditor is less likely to act unethically, such as by underreporting the time allocated to projects or clients. Therefore, we propose the following hypotheses.

**HYPOTHESIS 1a.** *Negative supervisor performance feedback is associated with an increased tendency to underreport the time allocated to time budgets by early career auditors.*

**HYPOTHESIS 1b.** *Positive supervisor performance feedback is associated with a decreased tendency to underreport the time allocated to time budgets by early career auditors.*

### 3.2. Supervisor performance feedback sign and intrinsic motivation

Generally, performance feedback and supervisor performance feedback play motivating roles (Deci & Cascio, 1972, pp. 1–25; Larson, 1984; Ryan & Deci, 2000a). Motivation is typically classified into two extremes: extrinsic and intrinsic. Intrinsic motivation refers to a person being motivated in a work activity for the activity's own sake; that is, the reward from the activity comes from overcoming challenges. Extrinsic motivation is the performance of an activity primarily aimed at achieving external recognition, which may include money, praise, or a better CV (Gebreiter, 2020). Actions are performed to gain recognition from others. Rewards and performance feedback (both negative and positive) can be used to strengthen early career auditors' extrinsic motivation, but such practices often risk crowding out intrinsic motivation (Deci, 1972; Ryan & Deci, 2000a; 2000b).

Early career auditors' intrinsic motivation is central to prompting them to seek and use feedback to learn how to solve tasks independently and handle complex problems (Kadous & Zhou, 2019; Westermann et al., 2015). Kadous and Zhou (2019) found that intrinsically motivated auditors search more deeply and have greater endurance when confronted with complex audit problems. Thus, intrinsic motivation is linked to auditors' task performance and audit quality.

An early career auditor's actions may not directly influence audit quality, because of the limited scope of tasks and responsibilities. However, intrinsic motivation must be upheld and sustained so that early career auditors can develop in a way that positively and directly influences audit quality. Additionally, before they reach the signing auditor rank, there is an obvious risk that their intrinsic motivational factors may be crowded out by functional external motivational factors (Ryan & Deci, 2000a). Because of the relation between motivation and the performance of the auditing task, Kadous and Zhou (2019, p. 125) argue that an auditing firm should not only 'foster and protect auditors' intrinsic motivation' but also 'retain auditors with higher levels of [...] intrinsic motivational orientation' in order to prevent auditors' intrinsic motivation from being crowded out by extrinsic motivation concerns.

According to self-determination theory (Ryan & Deci, 2000a), which focuses on explaining the crowding-out and crowding-in of intrinsic motivation (cf. Kadous & Zhou, 2019), feedback strengthens or weakens a person's feelings of competence and self-determination, which spill over into intrinsic motivation. When an individual is engaged in an intrinsically motivated task, the feedback received is associated with a positive or negative value of the task (Deci & Cascio, 1972, pp. 1–25). As feedback from the closest supervisor is the type of feedback most frequently received by early career auditors, this type of feedback is determinative and spills over into the joy and engagement early career auditors experience when executing their tasks. Experiencing negative feedback may offset the positive values connected to the auditing task, weaken feelings of competence, and decrease intrinsic motivation (Deci & Cascio, 1972, pp. 1–25; Kadous & Zhou, 2019). By contrast, receiving positive feedback strengthens the positive values connected to the task and enhances a person's feelings of competence, thereby increasing the intrinsic motivation to execute the task(s). Thus, we propose the following hypotheses.

**Hypothesis 2a.** *Negative supervisor performance feedback is associated with a decrease in early career auditors' intrinsic motivation.*

**Hypothesis 2b.** *Positive supervisor performance feedback is associated with an increase in early career auditors' intrinsic motivation.*

## 4. Method

### 4.1. Context, sample, and survey

This study relies on survey data collected in Sweden. To become a certified auditor in Sweden, it is necessary to have a university degree (including financial and managerial accounting and law), gather three years of experience in auditing at a registered auditing firm, and pass an auditor exam. This study focuses on early career auditors (also known as auditor assistants) who are employed directly after their university studies have ended. In the fall of 2019, a web-based survey was submitted (by email) to all newly recruited auditor assistants hired that year at large accounting firms in Sweden.<sup>2</sup> All auditors started their careers two to four weeks before the survey was sent out. The present research, focusing on supervisor feedback, was part of a more extensive survey investigating who gets hired (background) and their expectations (i.e. work environment, commitments, etc.) upon entering the occupation. From the register of addresses of 500 newly hired staff members obtained with permission and help from the auditing firms

<sup>2</sup> They were Deloitte, EY, KPMG, PWC, BDO, Maazar and a network of independent firms.

(proprietary data),<sup>3</sup> 280 responses were received. One year after the first survey, a second survey was submitted to the individuals who answered the first survey, followed by some of the questions posed in the 2019 survey.<sup>4</sup> After three reminders, 178 responses were obtained. In the 2020 survey, the primary source of data for this study (the data source for each variable is noted in Table 1), we included questions about early career auditors' experiences of the feedback they had received from their closest supervisor and the outcome variables of interest. This opportunity represents a rare occasion to analyse the feedback from their closest supervisor received by a cohort of early career auditors, all with one year of work experience in the profession, because '[t]he experiences of a given cohort of trainees in learning will have lasting effects, as those experiences can affect the ability to train the next generation' (Westermann et al., 2015, p. 892).

We designed the survey to reduce potential problems with common method variance (Podsakoff et al., 2003). First, we conducted a pilot survey to avoid ambiguous wording. Second, we promised anonymity, secured active consent, and informed the respondents that we were interested in their opinions and that there was thus no 'right' or 'wrong' answers to our questions. Third, the items for the independent and dependent variables were placed between other questions to reduce the risk of respondents spotting the theoretical model of links between the constructs (Podsakoff et al., 2003). To ensure that the data did not have obscure covariance patterns, potentially due to a common method effect, we conducted Harman's one-factor test.<sup>5</sup> The test resulted in seven factors with an eigenvalue greater than one (66.9% of the variance explained). The first factor accounted for 22.7% of the variance, indicating that the data did not merge into a common factor explaining most of the variance.

Item nonresponses were very few (notably, there were four nonresponses for the control variable of 'experience' and six for the control variable of 'sex' from the 2019 survey), and a highly insignificant Little's MCAR test (0.340) showed that these appear randomly. Therefore, we used FIML estimation, which is a powerful method for dealing with missing data in SEM (Enders & Bandalos, 2001). Non-response bias is a potential concern for longitudinal data collection, with the continuous dropout of participants. Although there was no method to fully evaluate this potential limitation of the study, we compared the background characteristics and answers to other questions of the 280 respondents in 2019 and 178 in 2020 and found no major differences between the two samples. The female share was approximately 2% larger in the 2020 sample, and the distribution of respondents was slightly higher in favour of the Big 4 firms in the 2020 sample than in the 2019 sample. Gender and firm are included as control variables (see below). Overall, we believe that the 178 respondents were representative of the early career cohort.

## 4.2. Variable measurements

### 4.2.1. Measurement evaluation and analysis strategy

Because several core variables are modelled as latent, covariance-based SEM is used to handle the problem of measurement error and simultaneously estimate the measurement and structural models (Kline, 2015). The structural model and hypothesised directions of the paths are shown in Fig. 1. Before assessing the structural paths for the hypothesis tests, we evaluated the convergent and discriminant validity of all constructs and variables (Bedford & Speklé, 2018; Fornell & Larcker, 1981). Acceptable convergent validity was set to an average variance extracted (AVE) equal to or greater than 0.4 and composite reliability equal to or greater than 0.7 (Fornell & Larcker, 1981).<sup>6</sup> Acceptable discriminant validity is set to the square root of the AVE that exceeds the correlation between two constructs (Fornell & Larcker, 1981) or a statistically significant hierarchical comparison of a constrained and unconstrained factor model (Bagozzi et al., 1991). All constructs were first assessed using exploratory factor analysis to evaluate convergent validity and, if needed, were fine-tuned (by deleting items if needed) to accommodate convergent validity (Bedford & Speklé, 2018). To evaluate the fit of the SEM models, we used the comparative fit index (CFI; >0.9) and root mean squared error of approximation (RMSEA; <0.08) as indicators of acceptable model fit (Hu & Bentler, 1999).<sup>7</sup> Because we modelled multiple dependent variables that are jointly caused by the same predictors (i.e. negative and positive feedback), we used SEM-SUR (e.g., Johansson, 2018) by correlating the residuals of the dependent variables (Zellner, 1962). The descriptive and measurement statistics are presented in Table 1, and the correlation matrix is presented in Table 2.

<sup>3</sup> Personal identification storage followed GDPR regulation (EU legislation). To obtain addresses to respondents from the firms, we promised confidentiality, and the consent form to the respondents included assurance of confidentiality (for data availability, please contact the corresponding author). The audit firms only approved contacting their employees and supplied us with addresses. Apart from two HR executives commenting on the wording of questions for face validity reasons, they were not involved in the survey development or its administration. A brief memo about the overall objectives of our research was disclosed to the firms to obtain approval and access to the addresses. In the cover letter, we assured the participants that participation was voluntary, and that we conducted the survey as independent researchers for research purposes only. This approach was not only important for a sound research ethic but also held important for reducing potential social desirability problems if the firms themselves had a stake in the survey and, for example, made it obligatory (by command), despite the fact that such an approach might have led to a higher response rate.

<sup>4</sup> By making use of their firm email-addresses, we ensured that they were still employed as auditors.

<sup>5</sup> We excluded the firm dummies from this analysis.

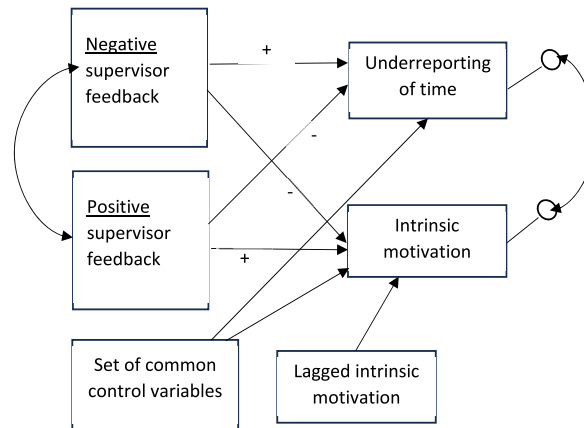
<sup>6</sup> If the AVE is below 0.5 but not below 0.4, the composite reliability should be above 0.7 for convergent validity to be at an acceptable level (Fornell & Larcker, 1981; see also Lam 2012).

<sup>7</sup> These are cut-off criteria for a small sample size (<250; Hu & Bentler, 1999).

**Table 1**  
Descriptive statistics and sample characteristics.

	Theoretical range	Mean	S.D.	Loading range	CR	AVE	Source (survey year)
URT	1–5	2.69	1.37	–	–	–	2020
INTRINSIC	1–7	5.65	0.92	0.534–0.863	0.73	0.48	2020
INTRINSIC 19 (lagged)	1–7	6.13	0.76	0.574–0.777	0.78	0.48	2019
PSF	1–7	4.55	1.44	0.734–0.964	0.77	0.71	2020
NSF	1–7	4.13	1.30	0.783–0.835	0.76	0.66	2020
TP	1–5	3.43	1.02	–	–	–	2020
Sex	Male 0/female 1	0.52	0.50	–	–	–	2019
Work exp.	1–3 (none to high)	1.61	0.66	–	–	–	2019
Extraversion	2–14	9.91	2.48	–	–	–	2019
Agreeableness	2–14	9.91	2.00	–	–	–	2019
Conscientiousness	2–14	10.52	2.11	–	–	–	2019
Emotional stability	2–14	10.00	1.97	–	–	–	2019
Openness to experience	2–14	8.74	2.01	–	–	–	2019
Audit firms	Percent		Percent				
KPMG	17.4	EY	16.3				2019/2020
PWC	24.2	GT	22.5				2019/2020
Other firms (BDO, Deoitte, Mazaar, network firms)	19.7						2019/2020

Authors own creation. CR = composite reliability; AVE = average variance extracted. URT: Under-reporting of time; INTRINSIC: Intrinsic motivation; INTRINSIC 19: intrinsic motivation to start a career as auditor in 2019; NSF: Negative supervisor feedback; PSF: Positive supervisor feedback; TP: Time performance; Work exp: extent of previous work experience of accounting administration.



**Fig. 1.** Structural equation model of hypothesised effects

Note: Authors own creation. Correlations between control variables and negative and positive supervisor feedback are not displayed but estimated.

#### 4.3. Dependent variables

Underreporting of time (URT) was measured by a question utilised in previous research (e.g., [Otley & Pierce, 1995, 1996](#); [Pierce & Sweeney, 2004](#)); namely, asking how often (from almost never, 1, to almost always, 5) the respondent underreports time to keep within time budgets. Intrinsic motivation (INTRINSIC) is conceptualised as a reflective latent variable represented by seven items, building on the items used by [Kadous and Zhou \(2019\)](#) to signal intrinsic motivation in an auditing task. These items included being motivated by curiosity about tasks, learning more, and feeling gratitude for experiences at work, regardless of outcomes. (See the Appendix for the full list of items). As suggested by [Bedford and Speklé \(2018\)](#), exploratory factor analysis (ML; varimax rotation) was conducted on seven items. Although only a one-factor structure with an eigenvalue greater than one emerged, three items loaded weakly ( $<0.5$ ) on the common factor, implying convergent validity problems. These items were removed, and the retained and excluded items for the construct are displayed in Appendix A. The trimmed construct showed acceptable convergent validity ( $CR > 0.7$ ;  $AVE = 0.48$ ).

**Table 2**  
Correlation matrix.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
1. URT	na																		
2. INTRINSIC	-0.113	<b>0.693</b>																	
3. PSF	-0.181	0.329	<b>0.843</b>																
4. NSF	0.139	0.103	0.481	<b>0.812</b>															
5. TP	-0.144	0.094	0.151	0.223	na														
6. Sex (female)	0.126	-0.111	-0.015	-0.093	0.016	na													
7. Work exp.	0.017	-0.171	-0.032	-0.101	-0.044	0.012	na												
8. Extraversion	0.024	-0.174	-0.052	-0.207	-0.030	0.065	-0.086	na											
9. Agreeableness	0.038	0.127	0.132	-0.038	-0.002	0.265	-0.046	0.117	na										
10. Conscientiousness	-0.088	0.170	0.096	-0.046	-0.033	0.145	-0.047	-0.093	0.095	na									
11. Emotional stability	-0.089	-0.047	0.019	0.026	0.038	-0.227	-0.053	0.250	0.018	-0.091	na								
12. Openness to experience	0.184	-0.013	-0.034	-0.036	-0.048	-0.111	0.062	0.250	0.106	-0.051	0.111	na							
13. Big4FirmA	0.114	0.005	-0.010	-0.081	-0.037	0.018	-0.103	-0.010	0.088	0.042	0.013	0.226	na						
14. Big4FirmB	0.033	0.056	0.104	0.138	-0.040	-0.070	-0.014	0.022	-0.133	0.013	0.136	0.053	-0.203	na					
15. Big4FirmC	0.160	0.092	0.058	0.125	0.046	-0.022	0.117	-0.050	-0.020	0.051	-0.076	-0.211	-0.247	-0.238	na				
16. Big4FirmD	-0.141	-0.057	0.047	-0.058	0.002	0.023	0.056	-0.011	0.137	0.058	-0.085	0.104	-0.259	-0.249	-0.304	na			
17. Other firms	-0.156	-0.092	-0.198	-0.119	0.023	0.047	-0.073	0.053	0.106	-0.168	0.032	-0.155	-0.227	-0.218	-0.266	-0.279	na		
18. Intrinsic 19 (lagged)	-0.042	0.345	0.162	0.058	0.022	0.038	-0.171	0.037	0.349	0.212	0.096	0.157	0.105	-0.132	0.015	0.093	-0.094	<b>0.691</b>	

Authors own creation. N 178 (FIML). Latent variable correlations (CFI, 0.926; RMSEA, 0.052, Pclose, 0.348). All correlations below -0.150 or above 0.150 are significant at  $p > 0.05$ . Bold diagonals are the square root of the AVE (na = not applicable).



#### 4.4. Independent variables

As argued in previous sections, in this article, we focus on the overall style or focus of ongoing supervisor performance feedback to junior employees by their closest supervisor<sup>8</sup> on positive or negative performance. The measures of negative and positive supervisor performance feedback were developed from the conceptualization of Larson (1984) with help from the validation of a measurement instrument of supervisor feedback by Marchionni (2003).<sup>9</sup> Negative supervisor feedback (NSF) was conceptualised as a reflective latent construct represented by four items capturing the extent to which the supervisor focuses on and communicates (i.e. gives feedback on) mistakes and poor performance as perceived by the early career auditor. Consequently, positive supervisor feedback (PSF) was conceptualised as a reflective latent construct represented by four items<sup>10</sup> that capture the extent to which the supervisor focuses on and communicates positive things and good performance. Both latent variables showed good convergent validity ( $CR > 0.7$ ,  $AVE > 0.5$ ) (Fornell & Larcker, 1981). The latent variable correlation between NSF and PSF was moderate (0.481) (Table 2), and the square root of their AVEs was higher than the correlation, indicating that they were discriminant dimensions of feedback (Fornell & Larcker, 1981; Kline, 2015). Moreover, we performed a confirmatory factor analysis that compared a model in which the correlation between NSF and PSF was fixed at one (constrained to unity) with a model that estimated the correlation freely (unconstrained;  $p < 0.01$ ), providing further evidence of discriminant validity between negative and positive feedback (Bagozzi et al., 1991).

#### 4.5. Control variables

When studying negative and positive feedback, it is important to control for individual performance. Performance might explain both the occurrence of feedback on poor or good performance and the outcomes of interest. This is theoretically the most obvious for the relationship with underreporting of time. However, as shown in the correlation matrix (Table 2), it is also relevant to the other main variables of the study. We asked respondents to rate how often they tended to stay within the time budget they received (TP). In the case of intrinsic motivation, we also had data for most respondents ( $N = 168$ ) on their stated intrinsic motivation to enter auditor occupations in 2019 ( $AVE = 0.48$ ).<sup>11</sup> Controlling for this lagged dependent variable (in an additional analysis) works as a means of controlling for the temporal stability of motivation (state or trait), and for omitted variables (i.e., unmeasured factors correlated with intrinsic motivation in 2020 ought to be correlated with intrinsic motivation in 2019, if motivation is partly a trait of individuals).

We are interested in how early career auditors perceive supervisors' feedback. Individual-level traits and dispositions may affect these perceptions and consequences (dependent variables). To close in on such controls, we used a short instrument (10 items; Gosling et al., 2003)<sup>12</sup> of the 'Big 5' personality traits. Personality (Big 5) has also been suggested as an important and appropriate control for social desirability in survey studies (Steenkamp et al., 2010), which might be relevant when enquiring about negative behaviours, such as URT.<sup>13</sup> We also control for some background characteristics of the respondent (sex and extent of previous work experience within accounting and financial administration<sup>14</sup>) as facets of different 'life experiences' affecting how feedback and its outcomes are perceived. As controls related to certain artefacts in the data structure, we control for the audit firm ( $N - 1$  firm dummies) to exclude the effects of firm-specific feedback cultures and formal performance feedback practices between firms. In the correlation matrix (Table 2), the firm dummies are labelled as 'Big4FirmA-D' and 'other firms' (a network of firms that are not Big 4 firms) for confidentiality reasons.

For the control variables, we inspected a correlation matrix before including controls in the hypothesis-testing models (Carlson & Wu, 2012). This reduces the risk of overfitted models, low power, and erroneous results from the naïve use of control variables (Spector & Brannick, 2011). The structural hypotheses testing models include only variables showing a zero-order correlation of more than 0.1 ( $\pm$ ) with the study variables (Carlson & Wu, 2012). All control variables were found to affect some of the study variables and were, therefore, included (see Table 2).

<sup>8</sup> In this setting, we cannot exclude the possibility that the early career auditor receives feedback from more than one supervisor or senior auditor. Therefore, we emphasized that the respondents should think of the person they regard as their closest supervisor when answering the questions about the feedback received. This person (structure and identification) is likely the one that interacts most frequently with the respondent and have the greatest impact on the respondents' attitudes and behaviors.

<sup>9</sup> Due to space limitations in the survey, we picked 9 items from Marchionni's net list of items (after validation of the gross list of items) we found most relevant to our setting. Some adjustments in wordings were made to increase face validity (English vs. Swedish and setting).

<sup>10</sup> PSF was designed to contain 5 items, but one item produced a low loading and cross-loaded evidently between NSF and PSF and was, thus, excluded from the final PSF latent variable used. See the appendix.

<sup>11</sup> Same items as for INTRINSIC but the items were stated with an ingress asking for their motivation for choosing auditing as a career.

<sup>12</sup> We used an adaption to a Swedish setting among professionals of the Gosling et al. (2003) scales used by Johansson-Berg and Wennblom (2023). See the appendix.

<sup>13</sup> Social desirability (SD) is largely a culturally laden method problem, and method studies show that, in Sweden, SD is generally not a major concern (Steenkamp et al., 2010).

<sup>14</sup> The question asked for previous work experience of financial work such as bookkeeping, salaries, ledger management, etc.

## 5. Results

### 5.1. Main results

The hypotheses were tested using a structural model (path estimates), as presented in Table 3. The model showed a satisfactory fit to the data (CFI > 0.9; RMSEA < 0.08). Hypothesis 1a-b gains evident support that NSF positively affects URT (std. B 0.320) and PSF negatively affecting URT (std. B -0.328). Both effects were statistically significant ( $p < 0.01$ ) and evident (Std. effect). Thus, Hypothesis 2 was supported. As hypothesised, NSF negatively affected INTRINSIC (Std. B -0.168). The effect was statistically significant at the 10%-level, but was small.<sup>15</sup> However, PSF had a positive effect on INTRINSIC (std B = 0.345), which was both evident and statistically significant ( $p < 0.01$ ).

### 5.2. Additional analyses

Several additional analyses were conducted to test the robustness of the results. As discussed in the Methods section, for 168 observations, we obtained data on the intrinsic motivation to enter an occupation/profession in 2019. We used the same items as in the INTRINSIC measure and added the latent variable along with the variables in Table 3 (URT was excluded as a DV). The standardised path between the two intrinsic motivation measures (INTRINSIC 2019 on INTRINSIC 2020) was  $B$  0.280 ( $p = 0.007$ ), which did not substantially change the effect of PSF (std.  $B = 0.319$ ,  $p < 0.01$ ) or NSF (std.  $B = -0.173$ ,  $p < 0.1$ ) on INTRINSIC, as presented in Table 3. Thus, this robustness check of controlling for lagged intrinsic motivation strengthens the cross-sectional evidence of PSF and NSF relationships with intrinsic work motivation.<sup>16</sup>

Because NSF and PSF are positively correlated, we also created a distance measure (PSF-NSF) between them.<sup>17</sup> This variable had a statistically significant effect on INTRINSIC (Std.  $B$  0.226,  $p < 0.01$ ) and URT (std.  $B$  -0.275,  $p < 0.01$ ). The results further corroborate  $H_1$  and  $H_2$  and show that the relative importance between them is also relevant to consider. The greater the central tendency towards either PSF or NSF from the supervisor, the greater the positive or negative effect, according to  $H_1$  and  $H_2$ . However, a stricter test against the hypothesis that the PSF and NSF have independent and additive effects is to test for potential interdependencies between the PSF and NSF by including their product term (Grabner & Moers, 2013). No statistically significant interaction effect ( $p > 0.650$ ) was observed (untabulated), indicating that PSF and NSF had independent effects on URT and INTRINSIC. In total, this additional analysis, together with the main results in Table 3, show that negative and positive feedback have independent and unique effects on the outcomes researched.

Elaborating on more intricate mechanisms between our two dependent variables, Weber and Stefaniak (2018) showed that self-efficacy reduces URT. As intrinsic motivation is closely related to self-determination (Ryan & Deci, 2000b), which is related to self-efficacy, and because the correlation matrix shows a negative correlation between INTRINSIC and URT, we formally tested for the indirect effect of NSF and PSF on URT through INTRINSIC.<sup>18</sup> The indirect effects are small (std.  $B < 0.02$ ) and statistically insignificant ( $p > 0.1$ ) (Sobel test), which contradicts the hypothesis of such relationships between the variables and constructs. This result is further supported by the weak residual correlation between INTRINSIC and URT (Table 3).

A model without firm dummies results in the same effects as the NSF and PSF, as presented in Table 3. As the sample size was small-to-medium, the statistical power may not have been sufficient to detect small effects. As an additional analysis, we specified a model without control variables. As a result, the effect of NSF on INTRINSIC became statistically non-significant ( $p > 0.1$ ) but remained substantially the same regarding direction and strength. Because the significant effect found in Table 3 is at the upper limit of the 10% level and the effect is small, this indicates that while the statistical support for PSF benefitting INSTRINSIC is strong, the support for NSF deteriorating INTRINSIC is weaker.

Considering the weaker effect and to support the hypothesis of a direct and independent negative effect of NSF on INSTRINSIC, we also considered moderators of the sample. From feedback and motivation research, we know that experience may act as a moderator of feedback effects, especially the effect of negative feedback (Fishbach et al., 2010). Considering this, we split the sample according to the 83 respondents who recorded they had no earlier work experience within accounting work (see method section), vis-à-vis the ones having such experience (reported that they had moderate to extensive experience).<sup>19</sup> We estimated a simplified SEM model without control variables due to its low power (half the sample size). Interestingly, the results from this subgroup analysis (Table 4) show that previous work experience moderates the relationship between NSF and INTRINSIC. However, that experience does not substantially change the effects of PSF on INTRINSIC or the effects of NSF and PSF on URT. For the *inexperienced* group, there was no effect (close to zero) of NSF on INTRINSIC. However, in the *experienced* group, there was an evident and statistically significant negative effect. However, because of the limited sample size (statistical power), the evident difference in the effect between the two groups only

<sup>15</sup> We use the two-sided 10% sig-level (5% one-sided) for the hypothesis tests (e.g., Cho & Abe, 2013).

<sup>16</sup> Using a lagged DV is substantially equal to creating a change measure of intrinsic motivation (2020–2019).

<sup>17</sup> We thank one of the reviewers for suggesting this additional analysis. The distance measure was created from summative index-variables of PSF and NSF and implemented with OLS regression.

<sup>18</sup> We thank one of the reviewers for suggesting this additional analysis.

<sup>19</sup> We thank one of the reviewers for suggesting this additional analysis.

**Table 3**  
Structural model for hypotheses tests.

From/To:	URT	INTRINSIC
NSF	0.320*** (3.512)	-0.168* (-1.676)
PSF	-0.328*** (-3.950)	0.345*** (3.687)
TP	-0.158** (-2.332)	0.074 (0.971)
Sex (female)	0.170** (2.330)	-0.155* (-1.882)
Work exp.	-0.004 (-0.057)	-0.191** (-2.442)
Extraversion	0.028 (0.359)	-0.216** (-2.497)
Agreeableness	0.034 (0.454)	0.148* (1.783)
Conscientiousness	-0.099 (-1.391)	0.105 (1.311)
Emotional stability	-0.082 (-1.115)	-0.056 (-0.677)
Openness to experience	0.193** (2.534)	0.076 (0.891)
Firm-dummies (1-N)	Yes	Yes
R <sup>2</sup>	0.270	0.242
Residual correlation of DVs: INTRINSIC	-0.030	

Authors own creation. Model fit:  $X^2 = 237.073^{***}$ ; Df = 168; CFI = 0.951; RMSEA = 0.048 (Pclose = 0.571). N = 178 (FIML). Standardised estimates shown. Two-tailed significance levels: \* $p < 0.1$ ; \*\* $p < 0.05$ ; \*\*\* $p < 0.01$ . T-statistics in parentheses. URT: Under-reporting of time; INTRINSIC: Intrinsic motivation; NSF: Negative supervisor feedback; PSF: Positive supervisor feedback; TP: Time performance; Sex (male 0, female 1); Work exp: extent of previous work experience with administrative tasks.

**Table 4**  
Sub-grouping according to previous work experience with accounting administration.

From/To	Moderate to extensive work experience		No work experience	
	URT	INTRINSIC	URT	INTRINSIC
NSF	0.248** (2.036)	-0.303** (-2.300)	0.322** (2.264)	0.063 (0.433)
PSF	-0.346*** (-2.901)	0.423*** (3.249)	-0.272** (-2.026)	0.324** (2.233)
R <sup>2</sup>	0.109	0.163	0.082	0.132
N	88		83	

Authors own creation. Model fit:  $X^2 = 188.112^{***}$ ; Df = 120; CFI = 0.941; RMSEA = 0.058 (Pclose = 0.200). Total N = 171. Since experience (the sample-divider) has missing data, FIML estimation does not cover the sample-divider and the total N-value is thus lower than 178. Standardised estimates shown. Two-tailed significance levels: \* $p < 0.1$ ; \*\* $p < 0.05$ ; \*\*\* $p < 0.01$ . T-statistics in parentheses. URT: Under-reporting of time; INTRINSIC: Intrinsic motivation; NSF: Negative supervisor feedback; PSF: Positive supervisor feedback; Work exp: extent of previous work experience with accounting and administration.

reached a two-tailed p-value of 0.1472<sup>20</sup>. Therefore, the difference can only be regarded as indicative of a one-tailed 10% significance level ( $p = 0.0736$ ). As an additional test (untabulated), we use a different moderator that asks for general work experience (not related only to accounting and administration). No substantial differences in the effects on INTRINSIC were observed between respondents with and without this type of work experience.<sup>21</sup> This moderation of previous work experience with accounting administration tasks (task similarity with the current job) corroborates H<sub>2a</sub> by identifying a boundary condition.

## 6. Discussion and contributions

The backdrop of our study is the centrality of ongoing supervisor feedback for early career auditors to learn craft and socialise into the audit profession (e.g., Church, 2014; Dirsmith & Covaleski, 1985; Westermann et al., 2015). Despite this work-life reality for early career auditors and their supervisors, comparatively few research efforts have detailed the nature of the wider supervisor feedback environment of early career auditors and have failed to relate it to their behaviours and attitudes (e.g., Andiola, 2014). As such, we provide an analysis of how supervisor feedback influences the behaviour of early career auditors, and in doing so, we follow Andiola's (2014, p. 18) call for research to analyse how such feedback influences early career auditors, as previous research suggests is central to influencing employee behaviour (Allen & Meyer, 1990).

Our analysis details the role of negative and positive supervisor performance feedback in relation to two important outcomes of performance feedback – underreporting of time and intrinsic work motivation – which capture both the supporting, nurturing (Westermann et al., 2015) and pressure (Cianci & Bierstaker, 2009; DeZoort & Lord, 1997) effects of feedback on audit quality-related outcomes. We hypothesise that the sign of supervisor performance feedback is important for early career auditors' time-reporting

<sup>20</sup> Executed by a model comparison test (chi square) between a model constraining the path to be equal and a model where the path is estimated freely ( $X^2$ -diff = 2.1, 1 df).

<sup>21</sup> For this variable, 40 claimed to have no previous work experience and the rest had moderate to extensive work experience (e.g., having worked in the service sector before or during university studies).

behaviour when handling the cost/quality dilemma of auditing. Our argument and support for this hypothesis suggest that we add a novel factor to the explanation of time underreporting in auditing (Otley & Pierce, 1995; Svanberg & Öhman, 2013; Sweeney et al., 2010; Weber & Stefaniak, 2018). The effect of the supervisor performance feedback sign, that is, whether the closest supervisor gives feedback on positive or negative junior auditor performance, is important for the audit profession as well as the research literature because it not only shows that negative performance feedback increases dysfunctional behaviour, such as underreporting of time, but also reveals that positive performance feedback decreases it. Our results evidence the importance of differentiating between the signs of feedback from supervisors in order to understand the functions and dysfunctions of performance feedback in relation to effort and (un)ethical behaviours (Cianci & Bierstaker, 2009; Dezoort et al., 2006; DeZoort & Lord, 1997). Importantly, as the practice of giving and receiving supervisor feedback is outside the immediate control of audit firm management but within the discretion of individual senior audit managers, negative and positive performance feedback are leadership features of senior auditors that matter to audit quality.

The second hypothesis concerns the feedback and intrinsic motivation. Intrinsic motivation is important for individual auditors throughout their careers, as it enables them to independently master complex audit tasks. Recent studies explored the consequences of intrinsic work motivation on various aspects of audit quality (Kadous et al., 2019; Kadous & Zhou, 2019). Although early career auditors may only indirectly influence audit quality in their respective audit engagements (signed by a senior auditor), both policy and research argue that auditors with high intrinsic motivation are central to a profession's well-being (Kadous & Zhou, 2019). Thus, supporting the development of intrinsic motivation among early career auditors is an important task for audit firms. We contribute to this discussion by demonstrating that performance feedback from the closest supervisor is important for intrinsic work motivation. Specifically, our study demonstrates a crowding-in effect from positive feedback and a small crowding-out effect from negative feedback.

Because the strength and significance levels of the latter effect are at the border of relevance, additional analyses indicate that the effect of negative performance feedback depends on previous work experience in accounting administration. For early career auditors with previous work experience in accounting and related administration, there is an evident negative effect of negative performance feedback on intrinsic motivation; however, for the inexperienced group of early career auditors, the negative effect vanishes. Nonetheless, we found no positive effects of negative performance feedback, indicating that such feedback practices were not beneficial to the outcomes studied. They are either less or more impactful depending on the auditor's (in)experience. These results are interesting because the most likely hypothesis from related research areas is that experience reduces the negative effect of negative performance (e.g., Fishbach et al., 2010), whereas our results suggest the opposite.

A tentative explanation for this finding may relate to the type of experience involved. Because experience, in this case, concerns accounting administration tasks and not life or unrelated work experience more generally, it might be that the self-selection of people enjoying and having worked with such work tasks experiences negative feedback that threatens their sense of competence more than it does for people with no experience in junior auditor work tasks (Fishbach, 2022). In addition, if pursuing a career in auditing was motivated by a person having had an earlier positive experience in related work and/or felt that such an experience was the reason for being selected, then negative feedback may be perceived as very personal, causing self-doubt in relation to work tasks and possibly even career choice.

Overall, our results further support the notion that positive feedback is generally more beneficial than negative feedback for auditing (Andiola, 2014; Andiola & Bedard, 2018). In this study, we extend this evidence by analysing this notion in relation to the performance feedback provided by superiors in audit firms during the professional development of early career auditors. Our results present a dilemma in auditor supervision, as feedback on negative performance (errors) is the modus operandi of many of the standardised and formal feedback practices used, such as the working paper review system. Beyond this baseline of operations, senior auditors have discretion on how to provide feedback when interacting with junior auditors. While it seems logical and ethical to sometimes remark on and communicate mistakes and poor performance to socialise and train junior auditors to become independent and skilled auditors, our results show that there are several dysfunctions to worry about.

Therefore, more research is needed on how to deliver critiques and constructively hinder mistakes (Andiola, 2014; Andiola & Bedard, 2018), as this is an important leadership feature of the supervisor. Psychology-based research has shown that feedback on negative performance can be constructive if it concerns information about failures from peers rather than oneself (Fishbach, 2022, p. 110f). Fully controlling for not giving negative performance feedback when working practically in real time with an audit engagement is likely difficult. However, having feedback sessions with junior employees that concern cases of others' poor performance and mistakes might be a practice for supervisors at audit firms to try to discourage negative behaviours that are not interpreted as a direct critique of the individual, thereby reducing the potential dysfunctional effects of negative feedback.

The practice of supervisors providing performance feedback means that negative and positive feedback potentially coexist; that is, some early career auditors are likely to encounter supervisors who tend to note and communicate feedback on both positive and negative performance. In contrast to findings from an experimental design that manipulates feedback into negative versus positive feedback for a delimited task or experience (e.g., Cianci & Bierstaker, 2009), our results (data) come from the fuzzier yet more realistic feedback milieu of a junior auditor, where the independent effects of feedback on positive performance, controlled for the potential co-occurrence of feedback on negative performance, and vice versa, can be assessed. Our main results and additional analyses show that positive and negative performance feedback from the closest supervisor have independent rather than interdependent effects. For example, it is not possible to compensate for negative feedback by also issuing positive feedback. This is a noteworthy result and lesson for the practice of supervisor feedback and related research.

## 7. Limitations and directions for future research

Our study has some limitations. While the external validity of the study is high, as we focus on a cohort of early career auditors starting their employment simultaneously in different firms and control for a lagged dependent variable for intrinsic motivation, it is not possible to establish causality given the nonexperimental design of this research. Because experimental research on feedback is frequent in the audit literature (and more so in the educational, psychology, and general management literature), many general mechanisms have already been established (Andiola, 2014). Therefore, survey studies exploring the relationship between aspects of feedback and certain outcomes should be seen as an important complement to the cumulative literature on feedback, adding external validity, generalisability, and new perspectives rather than being seen as using an inferior method (Luft, 2016). For example, the survey method enabled us to test hypotheses regarding the signs of performance feedback in a day-to-day setting, where feedback on positive and negative performances may coexist.

Our arguments and design focused on studying the influence of feedback from the closest supervisor. Future research could explore the complementary role of negative and positive feedback from other informal and unstructured sources to broaden the scope of influencers during the learning and socialisation processes of early career auditors. Previous research on feedback has shown that the effect of performance feedback from a more hierarchically distant ‘mentor’, ‘coach’, or ‘peer’ can cause somewhat different responses than feedback from a person that both supervises and coaches the auditor (Dalton et al., 2015; Anseel et al., 2013). Although we controlled for firm-wide differences in formal feedback designs and cultures, our design did not allow for an analysis that controlled for the interaction between supervisors’ idiosyncratic feedback styles and potential standardised firm-wide performance feedback practices. Thus, studying the complementarity between performance feedback styles from the closest supervisor and standardised office- and firm-level feedback practices is the next step in auditing research. Given the identified moderation of previous experience with accounting administration, future research could explore other moderators related to junior auditors’ skills and experiences, which might mitigate or amplify the effects of negative and positive supervisor performance feedback. Despite these limitations and considering the strengths of the study, we believe that this study of supervisor feedback on positive and negative performance for a cohort of early career auditors makes interesting and relevant contributions to both the practice of supervisor feedback and research on this topic.

### Data availability

The data that has been used is confidential.

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### Appendix. Measurement items of variables/constructs

#### *Positive supervisor performance feedback (PSF)*<sup>22</sup>

- My supervisor makes sure to tell me when I perform well at work.
- My supervisor gives feedback to employees when they deserve it to make them feel satisfied with their work.
- My supervisor agrees that positive feedback is vital for employees to improve their performance.
- My supervisor makes sure to congratulate an employee who gives a good presentation.
- My supervisor gives frequent feedback to all employees and not only to the ones that underperform (excl. from the trimmed latent variable).

#### *Negative supervisor performance feedback (NSF)*

- My supervisor lets the employees know when they are not performing up to par.
- My supervisor feels it’s important to inform employees about their poor performance.
- My supervisor is direct and upfront if he/she has to discuss the areas in which I need to improve with me.
- Even if it is a touchy subject, my supervisor still tells me when I have made a mistake.

#### *Intrinsic motivation at work (INTRINSIC)*<sup>23</sup>

- I feel good when I solve complex accounting and auditing tasks.

<sup>22</sup> The ingress to the items were: In this section, we are interested in your perceptions of the feedback you get. By supervisor, we mean your closest supervisor/boss. Please consider the following points.

<sup>23</sup> The ingress to the INTRINSIC items were: In this section, we are interested in the extent to which you agree with the following.

My job provides me with opportunities for increasing my analytical skills.  
 I want to find out how good I really can be at my work.  
 I enjoy the challenges that my job provides me with on a daily basis.  
 I enjoy learning about a client's business. (excl. from trimmed latent variable).  
 No matter what the outcome of a project, I am satisfied if I feel I gained a new experience. (ibid).  
 Curiosity is the driving force behind much of what I do. (ibid).

#### Underreporting of time (URT)<sup>24</sup>

How often do you underreport time to meet your time budget? (almost never 1, to almost always, 5).

#### Time performance (TP)

How often do you stay within your budget? (almost never 1, to almost always, 5).  
 Big 5 personality (items were randomly ordered)<sup>25</sup>.

#### Extraversion

Outgoing and social.  
 Reserved/withdrawn. (reverse coded).

#### Emotional stability (neuroticism)

Easily gets anxious. (reverse coded).  
 Emotionally stable and remain calm in tense situations.

#### Agreeableness

Tend to find fault with others. (reverse coded).  
 Tend to think well of people and gladly help others.

#### Conscientiousness

Execute work tasks thoroughly.  
 Tend to be comfortable and is sometimes a bit careless. (reverse coded).

#### Openness to new experiences

Have a vivid imagination and often come up with new ideas.  
 Conventional and prefer routine work tasks. (reverse coded).

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<sup>24</sup> The ingress to URT and TP were: Here we are interested in time budgets in connection with audit assignments. Answer the following questions.

<sup>25</sup> The ingress to the items were: How do you view on yourself?.

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