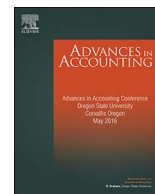




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# An analysis of the relation between resilience and reduced audit quality within the role stress paradigm

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## ABSTRACT

This study examines the relation between individual resilience levels and reduced audit quality practices (RAQP) within the context of an expanded role stress model. The premise for this investigation is that while role stressors, stress arousal, and burnout may enhance the likelihood of RAQP, resilience has the potential to directly and indirectly reduce RAQP. This reduction in RAQP is hypothesized to be a consequence of resilience serving as an attenuating influence on the other factors. The sample consisted of 258 auditors from seven of the 10 largest US accounting firms in 2015. The expanded role stress model includes resilience, role conflict, role ambiguity, and role overload as exogenous antecedents, stress arousal and burnout as mediators, and RAQP as the dependent variable. Our findings show that higher levels of resilience are associated with lower reported levels of RAQP, as well as decreases in both stress arousal and burnout tendencies. The data also indicate that reduced audit quality practices still represent a serious issue for the profession, but also identify ways by which firms may be able to reduce their occurrence. Emanating from these findings, we suggest future research to investigate viable intervention strategies designed to counteract the damaging effects of stress before they manifest in negative consequences to the individual and the firm.

## 1. Introduction

Independent auditors have a responsibility to examine a firm's financial statements and offer an opinion regarding whether those statements fairly represent, in all material respects, that company's financial position as of a particular date. Thus, auditors serve as "critical gatekeepers in the financial reporting process," and play an essential role in the effective functioning of the capital markets around the world (SEC, 2013). Consequently, anything that has the potential to degrade the quality of financial audits is of concern to management, investors, regulators, the audit firm itself, and any other stakeholder who may rely on these opinions (Herrbach, 2001). Auditor involvement in reduced audit quality practices (RAQP) has that potential. It is our contention that, *ceteris paribus*, the higher one's level of resilience, i.e., the ability to persevere under stressful conditions, the less likely that person will engage in these dysfunctional audit behaviors. Thus, the objective of this study is to test the proposition that one's resilience level is associated with a change in the propensity to engage in RAQP.

Our primary motivation is to determine if highly resilient individuals report lower levels of dysfunctional audit behaviors – taking into account the simultaneous influence of role stressors and other identifiable factors. Highly resilient individuals are those who have the skill

and capacity to bounce back and remain productive in the face of adversity. We premise this assertion on the notion that resilience is a learned characteristic, one that can be enhanced through workplace interventions. This tactic has heretofore escaped significant attention in the accounting stress literature and by those charged with bettering the public accounting work environment.

Methodologically, we test an expanded role stress model that included established measures of resilience and role stressors as exogenous antecedents, stress arousal and burnout as mediators, and RAQP as the dependent variable. We gather the data for each of the measures using recall survey instruments as described in the [Methods section](#) below. Using structural equations modeling procedures we find resilience to have significant direct negative relations with stress arousal, burnout, and RAQP, as well as a significant indirect negative relation with RAQP though its associations with arousal and burnout.

The balance of this paper is organized as follows. The following section provides an in-depth review of the constructs examined in this study. [Section 3](#) presents the theoretical model and provides the rationale for each hypothesis tested. Next, we discuss the methods employed to test the hypothesized associations among the constructs, followed by a detailed examination of the results. We then consider the implications of our findings with respect to the primary motivation of

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the study. The concluding sections delineate the limitations of the study followed by conclusions focused on the auditing work environment.

## 2. Background

### 2.1. Reduced audit quality practices (RAQP)

Audit quality may be thought of as the probability that an auditor will discover, report and eliminate any material misstatements that may appear in the client's financial reports (DeAngelo, 1981; Davidson & Neu, 1993). RAQP are intentional actions that compromise the quality of the audit by decreasing the quality or extent of evidence gathering (Malone & Roberts, 1996), thereby increasing the risk of an inappropriate audit opinion (Coram, Glavovic, Ng, & Woodliff, 2008). Acts associated with RAQP are of concern to the profession because they appear to be systemic, with prior research indicating that more than half of auditors admit to engaging in at least one of the aberrant behaviors (Donnelly, Quirin, & O'Bryan, 2003; Raghunathan, 1991; Coram, Glavovic, Ng, & Woodliff, 2003).

A number of RAQP behaviors have been identified and include: accepting weak client explanations, failing to properly research an item, making superficial reviews of documents, prematurely signing-off on audit steps, and reducing audit work below an acceptable level. A considerable stream of research has evolved investigating these dysfunctional audit behaviors, and much of it has shown a link between these behaviors and "pressure" as perceived by the auditor. These pressures include time budget pressure, fee pressure, pressure to under-report the time spent on audit procedures, and deadline pressure (e.g., Agoglia, Hatfield, & Lambert, 2015; Coram et al., 2008; Otley & Pierce, 1996; Kelley & Margheim, 1990; Herda & Martin, 2016). At a fundamental level, these pressures arise as a result of the tension between a need to provide a quality investigation and the costs necessary to do so.

RAQP have been shown to be a source of concern for many years with several studies reporting a high incidence of auditors admitting to engaging in one or more of these behaviors. For example, Coram et al. (2003) found that 63% of auditors admitted to engaging in RAQP, while Raghunathan (1991) reported that 55% of study participants had engaged in premature sign-off of audit evidence, and Otley and Pierce (1996) found that 88% of respondents reported committing at least one of these undesirable acts. Moreover, Kelley and Margheim (1990) noted that 33% of their sample had accepted weak client explanations and 31% had reduced the amount of work performed on an audit step. Otley and Pierce (1996) found that 89% of auditors in their sample admitted to engaging in RAQP at some point in their career, while Willet and Page (1996) reported that 70% of those included in their analysis had done so.

Other research has evaluated the personal and professional characteristics of the auditor (e.g., self-esteem, locus of control, Type A personality, organizational commitment, intent to stay, need for achievement, experience, professional commitment) when seeking the underlying factors that may motivate RAQP. These researchers (e.g., Donnelly et al., 2003; Malone & Roberts, 1996; Paino, Smith, & Ismail, 2012; Herda & Martin, 2016) provide evidence that individual-level differences can also play a role in predicting RAQP.

### 2.2. Auditor stress and RAQP

By definition, public accounting is a stressful profession (Gaertner & Ruhe, 1981; Weick, 1983), and this demanding environment has been demonstrated to exert a negative influence on job performance (e.g., Choo, 1995; Choo & Tan, 1997; Senatra, 1980;

Fogarty, Singh, Rhoads, & Moore, 2000; Smith, Davy, & Everly, 2007; Persellin, Schmidt, & Wilkins, 2015; Glover, Hansen, & Seidel, 2016). Auditors face stress from the quantity of work (i.e., role overload) they must do, and the limited time allotted to complete it (Center for Audit Quality - CAQ, 2014; Public Company Accounting Oversight Board - PCAOB, 2014). For example, Glover et al. (2016, 2) found that "auditors completing procedures at or near the required filing deadline may compromise audit quality to meet the filing deadline." Persellin et al. (2015) examined the extent to which workload affected audit quality with a survey of 776 current and former auditors of various ranks from a mix of small, medium, and large firms. Their results showed that "auditors are working, on average, five hours per week above the threshold at which they believe audit quality begins to deteriorate and often twenty hours above this threshold at the peak of busy season" (Persellin et al., 2015, 1). Specifically, the surveyed auditors reported that during the busy season they worked an average of 10 h above the required 55 h required minimum in place at most firms up to an average high of 80 h per week. The respondents further reported that they believe that audit quality begins to deteriorate (e.g., taking shortcuts, declines in professional skepticism, impairment of auditor judgement, and compromising of audit procedures) at workloads of 60 h per week or more (Persellin et al., 2015).

Furthermore, auditors are often subjected to the pressure that arises from dealing the conflicting demands imposed by supervisors, investors, and clients, i.e., role conflict (Goolsby, 1992; DeZoort & Lord, 1997). Individuals are further exposed to tension when they are subjected to multiple demands on their time. For example, tension can result from time conflicts between job demands and familial obligations and/or personal time commitments, or the implicit pressure to underreport time spent on audit procedures (Jackson, Schwab, & Schuler, 1986; Herda & Martin, 2016). Another oft-cited stressor occurs when there is a lack of clarity about one's role within the organization, or when the employee is faced with two mutually exclusive expectations, i.e., role ambiguity (e.g., Fogarty et al., 2000; Smith et al., 2007; Bamber, Snowball, & Tubbs, 1989; Senatra, 1980). The demands of regulatory compliance and the challenges associated with recruiting and retaining quality personnel further add to the burden. Moreover, according to a survey of large and medium-sized CPA firms administered by the AICPA, seasonality/workload compression, client retention, succession planning, and finding and retaining qualified staff are all areas of concern (AICPA, 2013). These stressors, combined with the onus of compliance with new state and federal regulations, have only served to escalate workplace stress for auditors.

As noted, investigations into RAQP typically do so by evaluating the acts in relation to one or more specific "pressures," most typically time budget pressure. Time budget pressure arises when the firm allocates an inadequate amount of time relative to the amount of effort required to complete specified audit steps (e.g., Cook & Kelley, 1988; Coram, Glavovic, Ng, & Woodliff, 2004; Otley & Pierce, 1996).

When faced with various job-related pressures, auditors have the choice to respond either functionally or dysfunctionally, subject to internal and external factors unique to the individual and situation (Coram et al., 2008; Donnelly et al., 2003; DeZoort & Lord, 1997). They may consider the "moral intensity" of the act, i.e., they may evaluate the extent to which the act is "wrong", assess the consequences that may occur as a result of the act, and appraise the relative likelihood of those consequences transpiring (Coram et al., 2008). They may also take into account the control systems in place, such as the need to complete the engagement within the mandated time and cost constraints.

These factors interact with individual-level difference variables

(e.g., locus of control, personality attributes, organizational commitment, turnover intentions, etc.) to form a course of action. It is our contention that highly resilient auditors are better able to cope with job-related pressures, thus allowing them to respond in a more functional manner, i.e., with lower reported levels of RAQP.

### 2.3. Stressor mediators: stress arousal and burnout

Smith et al. (2007) noted that early role stress studies focused primarily on the direct relations between job-related stressors (e.g., role ambiguity, role conflict, role overload) and key outcomes such as job satisfaction and performance, often resulting in mixed results. The authors echoed Fogarty et al.'s (2000) proposition that the inconsistent findings may have been attributable to misspecification bias due to the omission of key variables linking role stressors with job outcomes. In apparent recognition of this concern, over the past two decades studies have incorporated key mediator variables in a continuing effort to refine the stress paradigm among accountants, two of which are stress arousal and burnout.

Stress arousal is the “fairly predictable arousal of psycho-physiological (mind-body) systems which, if prolonged, can fatigue or damage the system to the point of malfunction or disease” (Girdano & Everly, 1986, 5). Because of differences in individual susceptibility to job stressors, factors that would engender excessive stress arousal in one person may have little or no influence on another. Consequently, in order for stress arousal to occur, stressors must first be perceived by an individual as threatening (Lazarus & Folkman, 1984).

Burnout represents a negative psychological response resulting from persistent exposure to work demands and/or interpersonal stressors (Maslach, 1982; Cordes & Dougherty, 1993; Almer & Kaplan, 2002). There are three distinct dimensions to the burnout construct: emotional exhaustion, reduced personal accomplishment, and depersonalization. Emotional exhaustion is a lack of energy and a feeling that one's emotional resources are depleted. Reduced personal accomplishment is defined by feelings of low self-esteem, low motivation, and the inability to perform satisfactorily. Depersonalization represents an uncaring attitude toward others (e.g., clients, co-workers) and emotional detachment (Cordes & Dougherty, 1993; Smith, Emerson, & Everly, 2017).

Fogarty et al. (2000) extended previous role stress research by empirically documenting that burnout served as a mediator between job stressors (i.e., role conflict, role ambiguity, and overload) and the outcomes of job satisfaction, turnover intentions, and performance. Almer and Kaplan (2002) evaluated the effect of flexible work arrangements on the role stress model and found that auditors with flexible work schedules experienced higher job satisfaction and reported lower levels of role conflict, emotional exhaustion, depersonalization, and turnover intentions. Workload has also been shown to influence burnout tendencies. In a longitudinal study, Sweeney and Summers (2002, 224) examined the effect of busy season workload on burnout and found that “the additional hours worked during the busy season caused public accountants' job burnout to escalate to alarmingly high levels.”

Smith, Davy, and Everly (2006) noted that both stress arousal and burnout are theoretically defined as responses to job-related and other environmental stressors, and empirically positioned as antecedents to various job-related and personal outcomes. However, the authors observed that while stress arousal appears to be an immediate response to environmental stressors (Smith, Davy, & Stewart, 1998), burnout represents the consequence of chronic exposure to those same stressors (Maslach & Schaufeli, 1993; LePine, Podsakoff, & LePine, 2005). It is this prolonged exposure that can overpower individuals' coping resources

(Feldman & Weitz, 1988) and which culminates in dysfunctional outcomes. These conceptual distinctions motivated Smith et al. (2006) to propose that stress arousal may be directly related to detrimental job outcomes before burnout tendencies manifest themselves, and may also exert a direct influence on burnout in addition to serving as a mediating influence between the elements of job stress and burnout.

Smith et al. (2007) further enhanced the model in a national study of public accounting employees by adding stress arousal positioned as a consequence of role stress and as an antecedent of burnout. Their findings provided empirical support for Smith et al.'s (2006) assertions regarding the temporal ordering of stress arousal and burnout in accountant stress models. Moreover, Smith et al. (2017) found evidence of linkages between stress arousal and the individual components of burnout as well as between the burnout dimensions and the outcomes of job satisfaction, turnover intentions, and job performance.

### 2.4. Resilience

While considerable progress has been made to model a stress paradigm for accountants, there are still many organizational and personal factors that may play a role in this dynamic that have not yet been fully explored. Perhaps most important among these are the unique individual characteristics which may have the potential to diminish the negative influence of organizational stressors. Jones, Norman, and Wier (2010) found that one's psychological well-being, vitality, and healthy lifestyle served as coping tools that mediated the relations between burnout and job outcomes. We propose that resilience represents a personal characteristic that may have similar potential to mitigate the negative organizational and personal consequences of role stressors.

Resilience is the skill and capacity to remain robust under conditions of stress and adversity, and individual differences in resilience appear to influence the threshold at which one reacts to stressors (Coutu, 2002; Ong, Bergeman, Bisconti, & Wallace, 2006). We suggest that resilience may immunize people against potentially incapacitating stress, and/or assist them in quickly and effectively rebounding from acute behavioral and psychological distresses. This becomes self-evident when one considers that not everyone exposed to potentially disabling psychological and behavioral stressors ultimately develops incapacitating stress arousal, burnout, and/or dissatisfaction. Consider the example of posttraumatic stress disorder (PTSD), the most severe stress-related psychological disorder of which we are aware. According to the U.S. Surgeon General's 1999 report (Department of Health and Human Services, 1999), only about 9% of those exposed to a traumatic stress event develop PTSD. The rationale underlying personal differences in stress susceptibility in general, and PTSD in particular, may very well be at least partially attributable to individual levels of resilience.

Resilience can also be thought of as stress resistance, i.e., the ability to withstand exposure to stressors without negative consequences. Resilient individuals are able to envision positive outcomes in the face of adversity, see work demands as challenges to be overcome, and have confidence in their ability to do so (Britt & Jex, 2015). Factors that influence one's resilience include support, coping mechanisms, and elements of their personality.

Support can come from co-workers, supervisors, as well as others external to the organization. This support may be in the form of tangible resources such as time off or scheduling flexibility, or through emotional support such as active listening, or providing advice and encouragement. Supervisors can play an important role in providing such resources and in helping to develop the resilience of their

employees (Britt & Jex, 2015).

Britt and Jex (2015, 82) define coping as a person's response set once a stressor is experienced. There are two primary ways that people can cope with stressors: they can address the problem by directly eliminating or minimizing the source of the stress, or they can attempt to minimize the arousal that is felt as a result of exposure to stressors. Jones et al. (2010) addressed this component of the stress dynamic when they found that an active and healthy lifestyle served as an effective coping mechanism by reducing burnout and its consequences that are detrimental to the firm and individual.

Personality traits such as locus of control have also been shown to be influential in both resilience and stress research (e.g., Donnelly et al., 2003; Paino et al., 2012; Britt & Jex, 2015). An individual's locus of control is related to the attributions they make about life's occurrences. If they conclude that the outcomes in their lives are the result of forces outside of their control, they are said to have an external locus of control, whereas an individual with an internal locus of control believes that they are responsible for outcomes and results in their lives (Donnelly et al., 2003). People with an internal focus are generally able to handle stressful situations without engaging in dysfunctional behaviors because they believe that they have the power to influence outcomes in a constructive manner (Britt & Jex, 2015).

For the purposes of this study we contend that resilience is a generalized personality characteristic that mitigates the adverse effects associated with various stressors (Wagnild & Young, 1993). In this sense, resilience is viewed as a predisposition, rather than a state which may be thought of as a highly specific, one-time behavior (Block & Kremen, 1996). However, while we believe resiliency is dispositional, we do not deny that resilience is also adaptive, influenced by environmental factors, and can be developed and managed (Norman, Luthans, & Luthans, 2005; Rutter, 1985; Luthans, 2002; Cadogan-McClean, 2009).<sup>1</sup> In this context, resilience can be thought of as a set of actions, thoughts and behaviors that can be learned. Indeed, Luthans (2002) advocated adding resiliency to the list of constructs (e.g., confidence/self-efficacy, hope, optimism, and emotional intelligence) elemental to implementing positive organizational behavior, wherein theory-driven research can stimulate performance improvement in the workplace. Just as self-efficacy can be effectively trained in the workplace (Bandura, 2000), so too can resilience, which has "profound implications for promoting competence and human capital in individuals and society (Masten, 2001, 235). Indeed, there has been increasing interest in the organizational psychology arena related to the concept of resilience in the workplace as a way to counter the debilitating effects of stress and burnout (e.g., Robertson & Cooper, 2013).

### 2.5. Construct synthesis

There is an extensive body of research evaluating the effects of stress in the accounting work environment (e.g., Choo, 1986, 1995; Fogarty et al., 2000; Smith et al., 2007; Sweeney & Summers, 2002; Almer & Kaplan, 2002; Coram et al., 2003). However, those studies do not address how stress is related to RAQP, nor does the extant research on RAQP examine dysfunctional behaviors within the context of job stress and the role stress model (Fogarty et al., 2000), or within the wider theoretical framework of generic job stress advocated by Weick (1983) to examine a number of issues related to the performance and wellbeing of accountants in the workplace.

This investigation examines the sequential influence of role stressors, stress arousal, and burnout on auditor's self-reported involvement

<sup>1</sup> A useful analogy can be made between an influenza inoculation and resilience training. The former is designed to boost one's resistance to the flu virus, whereas the latter is designed to boost one's resistance to the impact of stressors. In both cases, the result is a system that is better able to resist the deleterious consequences of the pathogen (stressor).

in dysfunctional audit practices. Building on prior role stress research (e.g., Smith et al., 2007; Fogarty et al., 2000), we add resilience as a distinct exogenous antecedent to stress arousal and burnout to assess its potential to attenuate dysfunctional audit behaviors.<sup>2</sup> We also use an industry-specific performance metric that avoids the potential limitations of the generalized measures used in earlier studies. We further contribute to the understanding of the role stress/stress arousal paradigm by incorporating a measure designed to capture the worry and rumination aspects of arousal which are activated under exposure to stressors, and which are thought to be the most germane elements of arousal in the role stress model as currently configured.

### 3. Model development

Fig. 1 presents the theoretical model with hypothesized paths to be tested. The hypothesized model is derived from a fusion of prior accounting, organizational behavior, and psychological research. The placement of resilience is congruent with that of healthy lifestyle in the Jones et al. (2010) model, i.e., as a coping mechanism with the potential to mitigate the impact of role stressors on stress arousal, burnout, and RAQP. The positioning of burnout as a mediator of role stress in accountants emanates from the Fogarty et al. (2000) and Jones et al. (2010) models, and the positioning of stress arousal as a separate mediator of role stressors prior to burnout is premised on the Smith et al. (2007) model.

Our model examines the direct and indirect effects of both resilience and individual role stressors (i.e., role conflict, role ambiguity, and role overload) on RAQP as mediated by stress arousal and burnout. Similar to Jones et al. (2010), our mediator constructs serve as both predictor and criterion variables and are expected to transmit the influence of the exogenous role stressor constructs (and resilience) to RAQP. As a result, role stressors and resilience are predicted to primarily affect RAQP through their influence on stress arousal and burnout, and that any direct influence will be diminished or eliminated by mediation effects.

#### 3.1. Resilience

As noted above, resilience is the unique characteristic that helps individuals cope with adversity and which appears to influence the threshold at which one reacts to stressors (Connor & Davidson, 2003; Coutu, 2002; Ong et al., 2006). However, little empirical research has been conducted with regard to resilience and its interaction with work stressors (Youssef & Luthans, 2007).

As an individual perceives a situation as stressful, they will call on their available resources to deal with the circumstances at hand. These resources may include the individual's problem solving skills, sense of mission, social support systems, self-efficacy and resilience (Zunz, 1998). In effect, resilience serves as a coping mechanism that individuals employ to attenuate the effects of stress by increasing the threshold at which stress arousal is activated. Therefore, we expect more resilient individuals to report lower levels of stress arousal, prompting us to hypothesize:

**Hypothesis 1(a).** *There is a negative association between resilience and stress arousal.*

While we expect stress arousal to at least partially mediate the relation between resilience and burnout, we cannot disregard the possibility that there may still be a significant direct relation between them. We premise this argument on: 1) Strumpfer's (2003) finding that burnout arises when coping mechanisms such as resilience are overwhelmed by the cumulative effects of stress arousal; 2) Zunz's (1998) determination that the personal protective factors associated with

<sup>2</sup> If stress can be viewed as a form of adversity, then an individual's capacity to deal with that adversity should be influenced by their level of resilience.

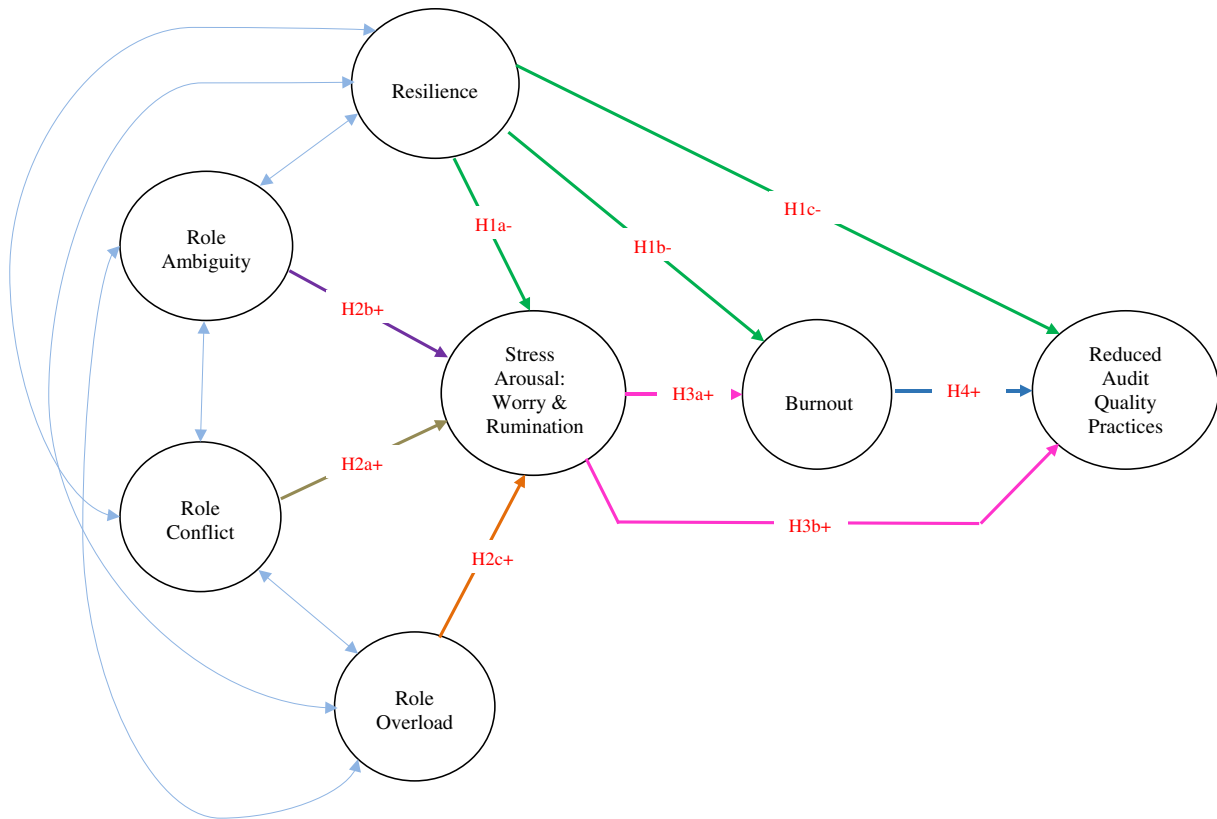


Fig. 1. Theoretical model to be tested.

resilience were each negatively associated with individual dimensions of burnout (e.g., emotional exhaustion, depersonalization, personal accomplishment); and, 3) Caverly's (2005) report that resilient employees possessed characteristics that were associated with a number of positive outcomes including lower burnout rates. Thus, we predict:

**Hypothesis 1(b).** *There is a negative association between resilience and burnout.*

Because resiliency may be “viewed as a measure of stress-coping ability,” (Connor & Davidson, 2003, 77) and because burnout arises as a result of stressors that “overwhelm the coping resources of the individual” (Fogarty et al., 2000), higher levels of coping resources (i.e. resilience) should serve to attenuate the negative consequences (i.e., RAQP) that may arise as a consequence of those stressors. Accordingly, while we expect significant mediation of the relation between resilience and RAQP via stress arousal and burnout, we cannot rule out the possibility of a direct and unmediated association between resilience and RAQP, thus leading us to predict:

**Hypothesis 1(c).** *There is a negative association between resilience and RAQP.*

### 3.2. Role stressors

We hypothesize links between each of the role stressors and stress arousal. Stressors such as role conflict, role ambiguity, and/or role overload must first be perceived as threatening by an individual before stress arousal can occur (Smith et al., 2007). As stress levels rise, it becomes more likely that the stress will be perceived as threatening and result in stress arousal. In fact, Smith et al. (2007) found role conflict and role overload to have significant positive relations with stress arousal, and Smith et al. (1998) found role ambiguity and role overload to have significant positive relations with stress arousal, thus prompting

the following hypotheses<sup>3</sup>:

**Hypothesis 2(a).** *There is a positive association between role conflict and stress arousal.*

**Hypothesis 2(b).** *There is a positive association between role ambiguity and stress arousal.*

**Hypothesis 2(c).** *There is a positive association between role overload and stress arousal.*

### 3.3. Stress arousal

Stress arousal is an immediate response to stressors, whereas burnout arises as a consequence of exposure to stressors over an extended period of time. Smith et al. (2006) found stress arousal and burnout to be related, yet conceptually unique constructs, and Smith et al. (2007) found stress arousal to have a direct positive relation with burnout. Moreover, Smith et al. (2017) found stress arousal to be positively associated with the emotional exhaustion component of burnout. Based on the foregoing, we offer the following hypothesis:

**Hypothesis 3(a).** *There is a positive association between stress arousal and*

<sup>3</sup> Although stress arousal is expected to mediate the relations between the role stressors and burnout, we must acknowledge the possibility that high levels of role stress may also exert a direct and unmediated influence on burnout, as well as RAQP. Indeed, Smith et al. (2007) found that role conflict and role ambiguity each had significant positive associations with burnout after accounting for the mediating influence of stress arousal. Moreover, Fogarty et al. (2000, 51) reported a significant relation, albeit positive as opposed to negative, between overload and their generalized performance measure. The full model tests described in the Methods section below include paths from each of the role stressors to both burnout and RAQP, in recognition of the possibility of direct associations among these constructs. However, our effort to focus on the new components of the role stress model, i.e., the addition of resilience and RQAP, motivated us to formally hypothesize and illustrate only those paths shown in Fig. 1.

### burnout.

Prior research has found that excessive stress can lead to detrimental personal and organizational outcomes including reduced job satisfaction, higher levels of voluntary turnover, and lower levels of performance (Libby, 1983; Fogarty et al., 2000, Smith et al., 1998; Smith et al., 2007; Smith et al., 2017). However, despite the demonstrated negative consequences of elevated stressor levels, role stress alone is not necessarily harmful. Indeed, researchers have identified an inverted-U relation between stress and performance (e.g., Anderson, 1976), wherein individuals under stress experience an increase in performance to some optimal point (eustress), beyond which exposure to additional stressors result in performance declines (distress). Stress arousal is invariably a negative response that only arises after the stressor has been perceived as threatening, and it is the activation of stress arousal that prompts the change from eustress to distress (Smith et al., 2006). Once the stress arousal response has been evoked, the negative consequences associated with this activation, such as declines in performance, are initiated as well. Among individuals working in public accounting, Smith et al. (2007) found stress arousal to have a direct negative association with performance, and Smith et al. (2017) found a positive relation between stress arousal and turnover intentions. Based on this reasoning, we test the following hypothesis:

**Hypothesis 3(b).** *There is a positive association between stress arousal and RAQP.*

### 3.4. Burnout

Almer and Kaplan (2002) found that stressors such as heavy workloads lead to burnout and a subsequent decline in performance, and Sweeney and Summers (2002) identified a link between busy season workload and burnout. Persellin et al. (2015) extended this line of reasoning by finding a positive association between workload and perceptions of burnout and a relation between workload and a subsequent decline in audit quality. Similarly, Smith et al. (2017) found a negative relation between one of the decomposed elements of burnout (feelings of reduced personal accomplishment) and job performance. Moreover, Fogarty et al. (2000) found burnout to have significant negative relation with job performance and a significant positive association with turnover intentions. Conversely, Smith et al. (2007) failed to find any significant relation between burnout and job performance. However, the current analysis contains a targeted measure of job performance that is more relevant to the study of auditor behavior which may reverse the counterintuitive results identified by Smith et al. (2007). We argue that once a person's coping mechanisms have been overcome, and burnout has occurred, they will become more susceptible to engaging in RAQP. We thus propose:

**Hypothesis 4.** *Burnout will be positively associated with RAQP.*

## 4. Methods

### 4.1. Participants

Participants for this study were 258 auditors drawn from the offices of seven public accounting firms. These firms included two of the Big Four, and five others ranked among the 10 largest U.S. accounting firms in 2015. Volunteers were solicited via email by HR representatives at each firm and asked if they would be willing to participate in a 10-minute Lifestyle Survey with complete confidentiality and anonymity assured.<sup>4</sup> Those who volunteered to participate were sent the survey instrument package via firm e-mail and requested to complete the

<sup>4</sup> We offered no incentives to participants in the study. All data were gathered outside the January 1st to April 15th timeframe.

questionnaire in private. To protect their anonymity, respondents were directed to place their completed surveys in a sealed envelope for return directly to the authors. To guard against response patterning issues, three different versions of the package were distributed in which the scale and item ordering varied. We received 265 packages within eight weeks of the initial solicitations, but seven were incomplete and excluded from further analysis.<sup>5</sup>

### 4.2. Measures

The measures incorporated in this study have proven valid and reliable in prior research. With the exception of the resilience measure, all have been utilized in prior role stress studies with accounting populations. All of the measures are self-report recall scales as described below.

#### 4.2.1. Stress Arousal Scale-4 (SAS4)

This study measures stress arousal using the SAS4 (Smith, Everly, & Haight, 2012). This four-item scale is designed to measure the worry and rumination, i.e., negative reiteration, component of arousal. This component has been posited to be the missing link in the relationship between environmental stressors and deleterious physiological and psychological health consequences (Everly, 1989). According to the Perseverative Cognition Hypothesis (Brosschot, Gerin, & Thayer, 2006), worry and rumination represent the pathways that sustain the negative reiteration component of arousal. The present study will examine the extent to which the worry and rumination aspects of arousal are associated with burnout and RAQP.

#### 4.2.2. Reduced Audit Quality Practices (RAQP) Scale

In this study, we use Otley and Pierce's (1996) RAQP scale which evaluates five actions that diminish the quality of the audit and which may result in a material misstatement. Accepting weak client explanations occurs when an auditor accepts a client's explanation about a transaction or entry rather than reviewing alternative evidence that the auditor could reasonably expect to be available (Coram et al., 2008). Overreliance on work prepared by the client or acceptance of suspicious evidence would also fall in this category. Failure to research an accounting principle occurs when an auditor is unsure of the appropriate accounting treatment when confronted with an unfamiliar issue, and subsequently elects not to seek guidance from the relevant technical and professional standards (Coram et al., 2008). Superficial review of client documents involves making an inadequate examination of client documentation without properly evaluating its accuracy and credibility (Coram et al., 2008). RAQP in the form of premature signoff of an audit step arises when the auditor indicates that they have completed all required audit procedures without actually completing the work or noting the omission in the documentation (Raghunathan, 1991), and reduction of work below a reasonable level occurs when the auditor performs less work than would be typically be done in the completion of an audit step (Coram et al., 2008).

Each of the above actions potentially reduces audit quality by decreasing the effectiveness of the audit and/or increasing the risk that the audit opinion will be based upon insufficient, inaccurate, or falsified documentation (Kelley & Margheim, 1987; Malone & Roberts, 1996; Otley & Pierce, 1996; Herrbach, 2001; Coram et al., 2003). Furthermore, these dysfunctional audit behaviors reduce the quality of an audit because

<sup>5</sup> Disparate staff sizes and response rates precluded us from examining non-response bias by firm. However, we utilized Oppenheim's (1966) early-late hypothesis to assess non-response bias by conducting independent sample *t*-tests were conducted to assess the significance of mean score differences between the first 50 respondents and the final 50 respondents from the full sample on each of the scales administered. No significant mean score differences between groups emerged from these analyses ( $p < 0.05$ ), thus providing us with reasonable assurance that there was no significant non-response bias associated with the study.

**Table 1**  
Incidence of reduced audit quality practices.

During the past year, how often have you acted in the following manner when carrying out an audit? <i>N</i> = 265					
RAQP	Never	Rarely	Sometimes	Often	Nearly always
1. Accepted weak client explanations	56 (21.1%)	128 (48.3%)	73 (27.5%)	8 (3.0%)	0 (0%)
2. Failed to research an accounting principle	90 (34.0%)	127 (47.9%)	43 (16.2%)	3 (1.1%)	2 (0.8%)
3. Made superficial reviews of documents	98 (37.0%)	113 (42.6%)	51 (19.2%)	3 (1.1%)	0 (0%)
4. Prematurely signed-off on an audit step	135 (50.9%)	92 (34.7%)	37 (14.0%)	1 (0.4%)	0 (0%)
5. Reduced work below what you considered reasonable	125 (47.2%)	114 (43.0%)	22 (8.3%)	4 (1.5%)	0 (0%)

“by lowering the care and skepticism involved in auditing, they threaten the outcome of the engagement and the validity of the audit opinion” (Herrbach, 2001, 190). Individually or collectively, engaging in these behaviors does not necessarily presume an incorrect audit opinion, but does have the potential to threaten its validity (Herrbach, 2001).

#### 4.2.3. Connor Davidson –Resilience Scale 10 (CD-RISC10)

This study measures resilience using the CD-RISC10 (Campbell-Sills & Stein, 2007). The scale is a unidimensional self-report measure with excellent psychometric properties. It has been used in a wide variety of settings and populations, and “captures the core features of resilience,” i.e., “the ability to tolerate experiences such as change, personal problems, illness, pressure, failure, and painful feelings” (Campbell-Sills & Stein, 2007, 1026–1027). The scale queries respondents as to how often each of the 10 items apply to them over the past month on a scale that ranges from 0 (not true at all) to 4 (true nearly all of the time). The items comprising the scale assess one's perceptions of their ability to adapt to change, deal with adversity, see the humorous side of things, cope with stress, etc. The higher one's summated score for each of the individual items, the higher their level of perceived resilience.

#### 4.2.4. Additional measures

In addition to the aforementioned stress arousal, RAQP, and resilience scales, this study's measures include:

1. Role Conflict using three items from three items from Rizzo, House, and Lirtzman's (1970) 14-item Role Conflict and Role Ambiguity Scale;
2. Role Ambiguity using three items from Rizzo et al.'s (1970) 14-item Role Conflict and Role Ambiguity Scale;
3. Overload using four items from the Beehr, Welsh, and Tabor's (1976) scale; and,
4. Burnout using nine items drawn from the Maslach Burnout Inventory (MBI) as developed by Singh, Goolsby, and Rhoads (1994).<sup>6</sup>

All of the above-referenced instruments have been shown to be valid and reliable in prior research.<sup>7</sup> Appendix A contains the complete text of the survey instrument with the exception of the CD-RISC10 as noted.

<sup>6</sup> Three items measured Emotional Exhaustion, three measured Depersonalization, and three measured Reduced Personal Accomplishment.

<sup>7</sup> We used data from an independent randomized sample of 491 American Institute of Certified Public Accountants members to conduct a series of classical test-item analyses on Scales 1–4 in the interest of parsimony and response rate maximization. The results of these analyses indicated that: 1) the three selected Role Conflict items had a Coefficient Alpha of 0.792, Spearman-Brown Reliability Coefficient of 0.828, and explained 71.13% of the variance; 2) the three selected Role Ambiguity items had a Coefficient Alpha of 0.840, Spearman-Brown Reliability Coefficient of 0.829, and explained 75.92% of the variance; 3) the four selected Overload scale items had a Coefficient alpha of 0.912, Spearman-Brown Reliability Coefficient of 0.907, and explained 79.16% of the variance; the three selected Emotional Exhaustion items had a Coefficient alpha of 0.862, Spearman-Brown Reliability Coefficient of 0.907, and explained 79.01% of the variance; 5) the three selected Depersonalization items had a Coefficient alpha of 0.865, Spearman-Brown Reliability Coefficient of 0.905, and explained 79.42% of the variance; and, 6) the three selected Reduced Personal Accomplishment items had a Coefficient alpha of 0.843, Spearman-Brown Reliability Coefficient of 0.876, and explained 77.45% of the variance.

## 5. Statistical analysis

Prior to evaluating the theoretical model depicted in Fig. 1, we conducted confirmatory factor analysis on the sample data to independently test the construct and discriminant validity among the constructs represented by the measures. By doing so, we were able to assess whether the factors would load on their respective underlying theoretical constructs. Anderson and Gerbing (1988) prescribe that this measurement model assessment must precede before testing structural linkages. We next conducted EQS structural modeling tests to evaluate the theoretical model. We then dropped statistically non-significant parameters from the model based on the output of Wald tests applied to the full model.<sup>8</sup>

We evaluated model fit using several measures as there is no one definitive assessment metric (Fogarty et al., 2000). Specifically, we used the Satorra and Bentler (2001) Chi-squared ( $SB\chi^2$ ) statistic, Wheaton, Muthen, Alwin, and Summers' (1977) relative/normed chi-square ( $\chi^2/df$ ),<sup>9</sup> the robust normed and nonnormed fit indices (NFI and NNFI), the robust comparative fit index (CFI), the Average Off-Diagonal Absolute Standardized Residual (AOASR), and the adjusted root mean squared error of approximation (RMSEA) for nonnormal conditions.

## 6. Results

### 6.1. Descriptive statistics

Of the 245 respondents reporting occupational level, 79 (32%) were staff, 60 (24.5%) were senior/supervisors, 99 (40.5%) were managers, and 7 (3%) were directors. Of the 256 reporting gender, 123 were women and 133 were men. Eighty four came from Big-4 firms and 147 came from the five largest U.S. public accounting firms in 2015.

### 6.2. Reduced audit quality practices

Table 1 presents the results of the survey items related to the frequency of dysfunctional audit behaviors. As with prior research, our results reveal a troubling pattern regarding the prevalence of RAQP. While strong majorities “rarely” or “never” engage in any of the activities, and while it is comforting to note that only two individuals reported failing to adequately research an accounting principle “nearly always,” significant numbers of our respondents admitted to engaging in each of the behaviors either “sometimes” or “often.” For example, the most commonly reported behavior was accepting weak client explanations, with 78.9% of our sample admitting having done at least once, 27.5% did so “sometimes,” and 3.0% acknowledged that they did so “often.” Conversely, the behavior least likely to be reported was prematurely signing off on an audit step

<sup>8</sup> The Wald test is a post-hoc procedure that is sample-specific, not theory-driven. Thus, to determine whether the relations uncovered in this investigation hold, replication is needed with another sample.

<sup>9</sup> Hooper, Coughlan, and Mullen (2008) propose that the relative/normed chi-square ( $\chi^2/df$ ) minimizes the impact of sample size on the model chi-square while conceding that there is no consensus regarding an acceptable ratio for this statistic, with recommendations ranging from as high as 5.0 (Wheaton et al., 1977) to as low as 2.0 (Tabachnick & Fidell, 2007).

**Table 2**  
Factors for measurement model tests with standardized measurement model coefficients for the construct indicators.

Latent construct (indicators)	Model test results <sup>a,b</sup>	Standardized coefficient	t-Value <sup>c,d</sup>
Resilience	$\bar{x}$ = 3.994 s = 0.531 $\alpha$ = 0.885		
Resilience <sub>1</sub>		0.913	–
Resilience <sub>2</sub>		0.887	11.299
Role conflict	$\bar{x}$ = 2.536 s = 0.914 $\alpha$ = 0.778		
Conflict <sub>1</sub>		0.782	–
Conflict <sub>2</sub>		0.811	9.208
Role ambiguity	$\bar{x}$ = 2.297 s = 0.806 $\alpha$ = 0.834		
Ambiguity <sub>1</sub>		1.000	–
Ambiguity <sub>2</sub>		0.688	7.537
Role overload	$\bar{x}$ = 2.690 s = 0.916 $\alpha$ = 0.886		
Overload <sub>1</sub>		0.913	–
Overload <sub>2</sub>		0.905	11.638
Stress arousal	$\bar{x}$ = 1.952 s = 0.777 $\alpha$ = 0.905		
Arousal <sub>1</sub>		0.970	–
Arousal <sub>2</sub>		0.881	16.875
Burnout	$\bar{x}$ = 2.353 s = 0.813 $\alpha$ = 0.854		
Emotional exhaustion		0.803	–
Reduced personal accomplishment		0.503	6.541
Depersonalization		0.723	9.176
Reduced audit quality practices	$\bar{x}$ = 1.809 s = 0.569 $\alpha$ = 0.819		
RAQP <sub>1</sub>		0.832	–
RAQP <sub>2</sub>		0.881	11.286

<sup>a</sup> Cronbach's alpha reliability computed to index the internal consistency of the measure. Values exceeding 0.70 are considered satisfactory (Nunnally, 1978).

<sup>b</sup> With two exceptions, the reported mean values fell within a range of 1–5. Stress arousal values fell within a range of 1–4, and burnout values fell within a range of 1–6.

<sup>c</sup> Each of the reported t-values is significant at  $p < 0.001$ .

<sup>d</sup> Structural equation modeling procedures require that one measure of each construct be fixed to 1.0 to establish the scale of the latent construct.

with 50.9% responding that they had never done so, and only 14.4% admitting doing so sometimes or often. Each of the other RAQP measured showed similar patterns. On average, 18.6% of respondents reported engaging in the various activities at least "sometimes".

### 6.3. Measurement model tests

Table 2 presents the items comprising each latent variable to be tested, the mean score for each predicted latent variable, the Cronbach's alpha reliability coefficients for the manifest indicators comprising each latent construct, the standardized coefficients for each manifest indicator, and t-tests of significance for the path coefficients from each latent construct to its respective manifest indicator(s). As indicated, all of the Cronbach's alpha coefficients exceeded Nunnally's (1978) minimum threshold of 0.70, thus establishing the internal consistency of the items comprising each measure. Moreover, the path coefficients from each latent construct to its manifest indicator is significant at  $p < 0.001$ .

The goodness-of-fit summary presented in Panel A of Table 3 indicates that the model provides a good fit to the data. The  $\chi^2/df$  ratio for the measurement model of 2.127 is close to Tabachnick and Fidell's (2007) rigorous upper threshold of 2.0. Each of the fit indexes (NFI, NNFI, and

CFI) exceed the 0.90 minimum prescribed by Bentler (1990) for well-fitting models, and the CFI exceeds the more rigorous 0.95 minimum prescribed by Hu and Bentler (1999). In addition, the AOASR falls within its respective standard for acceptance and the RMSEA is close to Hu and Bentler's (1999, 27) rigorous upper threshold of 0.06.

Panel A also reports the results of comparisons between the measurement model and three nested models. These tests are reported to illustrate the distinctiveness of these three constructs. The first comparison, between the measurement model and one which constrained stress arousal and burnout to load on one underlying factor, demonstrated a significant loss of fit for the latter model with a  $SB\chi^2_{diff}$  of 270.654 ( $df = 6$ ,  $p$ -value  $< 0.001$ ).<sup>10,11</sup> This finding supports those of Smith et al. (2006, 2007), i.e., the construct distinctiveness of stress arousal and burnout. The second nested model constrained stress arousal and resilience to load on one underlying factor. The  $SB\chi^2_{diff}$  of 447.694 ( $df = 6$ ,  $p$ -value  $< 0.001$ ) also indicates a significant loss of fit, thus providing evidence of the incremental contribution added by resilience. The final nested model constrained resilience and burnout to load on one underlying factor, and it too indicates a significant loss of fit with a  $SB\chi^2_{diff}$  681.686 ( $df = 6$ ,  $p$ -value  $< 0.001$ ). Each of the foregoing results indicates that the construct tested should remain in the hypothesized model.

### 6.4. Theoretical model and hypothesis tests

Panel B of Table 3 provides goodness-of-fit statistics for the tests of the full model illustrated in Fig. 1. The  $SB\chi^2/df$  ratio is 2.116, each of the fit indexes (NFI, NNFI, and CFI) exceed 0.90, the CFI exceeds 0.95, and both the AOASR and RMSEA fall within their respective standards for acceptance. Dropping non-significant paths to arrive at our structural model resulted in no significant loss of fit as indicated by the goodness-of-fit statistics and the  $SB\chi^2_{diff}$  of 8.299 ( $df = 6$ ,  $p$ -value = 0.217). Fig. 2 illustrates the significant paths and their standardized path coefficients contained in the final structural model.

#### 6.4.1. Resilience

As anticipated, our results fully confirm our expectations regarding the influence of resilience as an additional exogenous variable in the role stress model. Specifically, the standardized path coefficients shown in Fig. 2 confirm a significant negative association between resilience and stress arousal ( $-0.329$ ;  $p$ -value  $< 0.01$ ), resilience and burnout ( $-0.213$ ,  $p$ -value  $< 0.01$ ), and resilience and RAQP ( $-0.133$ ,  $p$ -value  $< 0.05$ ), thus confirming Hypothesis 1(a)  $\rightarrow$  Hypothesis 1(c).

#### 6.4.2. Role stressors

We find a significant positive relation between role conflict and stress arousal (0.368,  $p$ -value  $< 0.01$ ), supporting Hypothesis 2(a). However, Hypothesis 2(b) and Hypothesis 2(c) are not supported as neither role ambiguity or role overload have a significant relation with stress arousal. Moreover, each of the stressors were found to have a direct, positive association with burnout<sup>12</sup> indicating that stress arousal serves as a partial, not total mediator of role stress on burnout tendencies as had been anticipated.

<sup>10</sup> We conducted the nested measurement model comparison using the scaled difference chi-square test ( $\Delta SB\chi^2$ ; Satorra & Bentler, 2001) for this comparison as well as the theoretical model comparison discussed in the following section. A significant chi-square difference value indicates a significant loss of fit by constraining a path to zero, indicating that the path should be retained in the model. A nonsignificant chi-square difference indicates the path could be dropped with no significant loss of model fit.

<sup>11</sup> It is important to note that the Satorra-Bentler  $\chi^2$  difference test does not capture the true mathematical difference between the two values, but rather a calculated scaled difference that takes into account the effect of non-normal data distribution.

<sup>12</sup> Role conflict (0.395,  $p$ -value  $< 0.01$ ), role ambiguity (0.248,  $p$ -value  $< 0.05$ ), and role overload (0.138,  $p$ -value  $< 0.05$ ).



**Table 3**  
Goodness of fit test results.

Model	SB $\chi^2$	df	p	SB $\chi^2/df$	NFI	NNFI	CFI	AOASR	RMSEA	RMSEA 90% confidence interval
Panel A: measurement model										
1. Final measurement model <sup>a</sup>	151	71	< 0.001	2.127	0.924	0.937	0.958	0.046	0.065	0.051–0.080
2. Stress and burnout constrained to load on one underlying factor <sup>b,c</sup>	350	77	< 0.001	4.546	0.825	0.803	0.856	0.092	0.116	0.103–0.128
3. Stress and resilience constrained to load on one underlying factor <sup>d</sup>	404	76	< 0.001	5.316	0.798	0.761	0.827	0.067	0.128	0.115–0.140
4. Resilience and burnout constrained to load on one underlying factor <sup>e</sup>	463	77	< 0.001	6.019	0.768	0.721	0.796	0.103	0.144	0.132–0.156
Panel B: theoretical model										
1. Full model (Fig. 1) <sup>f</sup>	148	70	< 0.001	2.116	0.926	0.938	0.959	0.044	0.065	0.050–0.079
2. Final structural model (Fig. 2) <sup>g</sup>	157	76	< 0.001	2.063	0.921	0.941	0.957	0.044	0.063	0.049–0.77
Standard for acceptance	NA	NA	> 0.05	< 2.0–3.0	> .90–0.95	> 0.90–0.95	> 0.90–0.95	< 0.05	< 0.06	NA

SB $\chi^2$  = Satorra-Bentler scaled  $\chi^2$ ; NFI = normed fit index; NNFI = non-normed fit index; CFI = comparative fit index; AOASR = Average Off-Diagonal Absolute Standardized Residual; RMSEA = root mean square error of approximation.

<sup>a</sup> An examination of the multivariate Wald test output from the test of the full measurement model indicated that two of the 21 specified covariances between factors should be dropped, i.e., those between resilience and overload, and overload and reduced audit quality practices.

<sup>b</sup> It is important to note that the Satorra-Bentler  $\chi^2$  difference test does not capture the true mathematical difference between the two values, but rather a calculated scaled difference that takes into account the effect of non-normal data distribution.

<sup>c</sup> Satorra-Bentler  $\chi^2$  difference (in relation to the measurement model) = 270.654,  $df = 6$ ,  $p \leq 0.001$ .

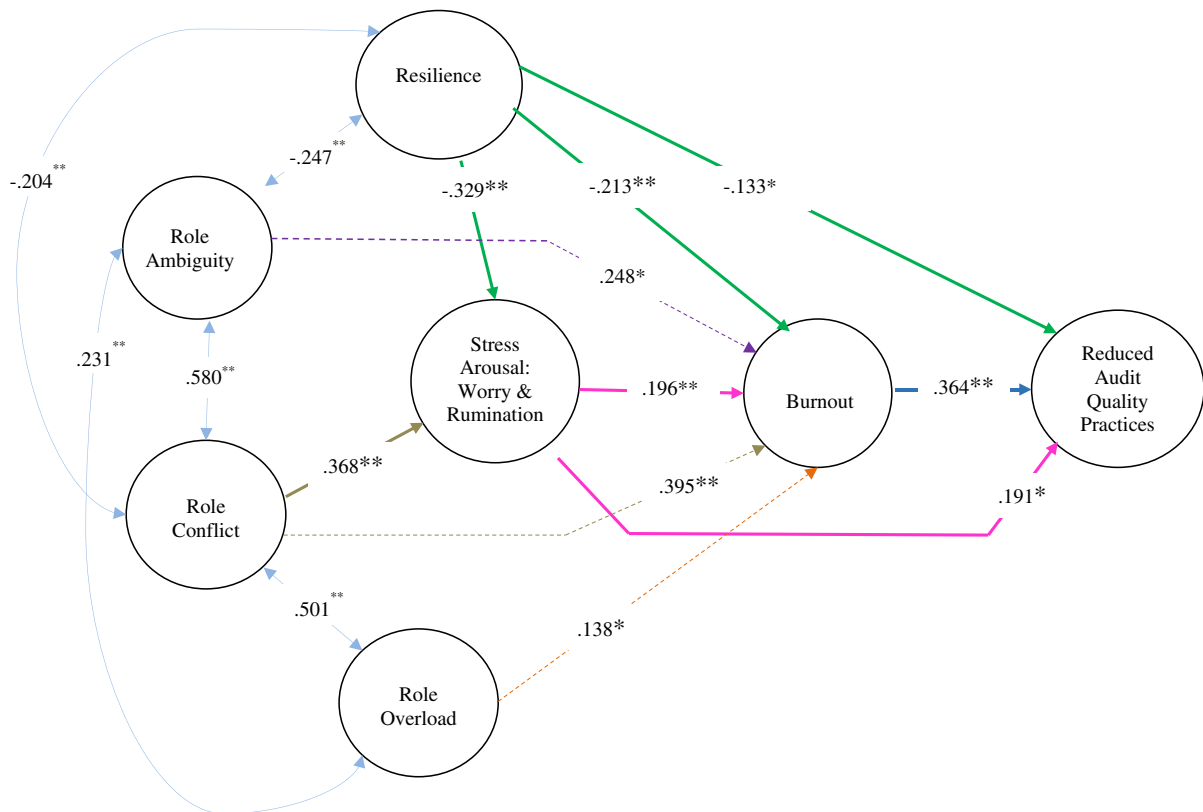
<sup>d</sup> Satorra-Bentler  $\chi^2$  difference (in relation to the measurement model) = 447.694,  $df = 5$ ,  $p \leq 0.001$ .

<sup>e</sup> Satorra-Bentler  $\chi^2$  difference (in relation to the measurement model) = 681.686,  $df = 6$ ,  $p \leq 0.001$ .

<sup>f</sup> The full theoretical model included a test of the direct relation between role overload and RAQP thus creating the 1 $df$  difference between this and the final measurement model.

<sup>g</sup> Satorra-Bentler  $\chi^2$  difference (in relation to the full model) = 8.299,  $df = 6$ ,  $p = 0.217$ .

(Paths between each latent construct and its indicators are omitted for ease of diagramming and interpretability See Table 2 for these relations. Indicators for double-headed arrow paths represent correlations between independent factors; \*significant @  $p < .05$ ; \*\*significant @  $p < .01$ )



**Fig. 2.** Standardized path coefficients - final structural model.

**Table 4**  
Direct and indirect effects of the predictor constructs (italicized paths significant at  $p < 0.05$ ).

Predictor construct	Predicted construct					
	Burnout			Reduced audit quality practices		
	Direct effect	Indirect effect	Total effect	Direct effect	Indirect effect	Total effect
Resilience	<i>-0.213</i>	<i>-0.064</i>	<i>-0.277</i>	<i>-0.133</i>	<i>-0.108</i>	<i>-0.241</i>
Role conflict	<i>0.395</i>	<i>0.072</i>	<i>0.467</i>	0.000	<i>0.240</i>	<i>0.240</i>
Role ambiguity	<i>0.182</i>	0.000	<i>0.182</i>	0.000	NS	NS
Role overload	<i>0.138</i>	NA	<i>0.138</i>	0.000	0.050 <sup>1</sup>	0.050
Stress arousal	<i>0.197</i>	NA	<i>0.197</i>	<i>0.191</i>	<i>0.071</i>	<i>0.262</i>
Burnout	NA	NA	NA	<i>0.364</i>	NA	<i>0.364</i>

<sup>1</sup>  $p = 0.062$ .

#### 6.4.3. Stress arousal

Our expectations regarding the influence of stress arousal were also confirmed. Specifically, stress arousal has a significant positive association (0.196) with burnout at  $p$ -value  $< 0.01$ , thus supporting [Hypothesis 3\(a\)](#). Stress arousal also has a significant positive association with RAQP (0.191;  $p$ -value  $< 0.01$ ) thus supporting [Hypothesis 3\(b\)](#).

#### 6.4.4. Burnout and RAQP

Also as predicted, burnout has a significant positive relation with RAQP (0.364;  $p$ -value  $< 0.01$ ) thus confirming [Hypothesis 4](#).

#### 6.5. Mediation effects

To better understand the mediating effects of the predictors on the various predicted constructs, [Table 4](#) presents the results of a path-analytic decomposition of the direct and indirect effects of each predictor on each predicted construct.<sup>13</sup> As illustrated, with one exception (i.e., role ambiguity and RAQP), the indirect effects are statistically significant at  $p$ -value  $< 0.05$  or less.

While resilience has significant direct negative associations with burnout and RAQP, these relations are also partially mediated via a direct negative association with stress arousal and an indirect association with burnout in the case of RAQP. These indirect associations combined with the direct effects result in a total effect of resilience on burnout of  $-0.277$  and on RAQP of  $-0.241$ . While role conflict does have a significant direct positive relation with burnout, there is also an indirect association (0.072) via its direct positive association with stress arousal, resulting in a total effect of 0.467 between role conflict and burnout. Moreover, despite the absence of a significant direct relation, role conflict has a significant indirect relation with RAQP of 0.240. Finally, while stress arousal does have a significant positive negative relation with RAQP, it also has a significant indirect positive relation (0.071) via its direct positive association with burnout, resulting in an overall positive association (e.g., total effect) of 0.262. In addition, while role overload does not have a direct association with RAQP, there was a marginally significant (0.050;  $p$ -value = 0.062) indirect effect exerted through burnout.

#### 6.6. Demographic effects

To evaluate the potential influence of firm size, rank, or gender on our results, we recoded the data for each of the constructs in our model into a continuous variable and regressed each of the stressors, stress arousal, burnout, resiliency, Big-4 status, rank, and gender onto RAQP.

Though not presented in tabular form, our results are congruent with those identified with the structural model, and neither Big-4 status ( $t = -0.372$ ,  $p$ -value = 0.171), rank ( $t = -0.28$ ,  $p$ -value = 0.783) nor gender ( $t = -0.146$ ,  $p$ -value = 0.145) were significant.<sup>14</sup>

## 7. Discussion

This study, using a sample of auditors employed in public accounting firms, investigated the role of resilience in attenuating the influence of role stressors and stress arousal on RAQP and burnout. Our results show that the higher one's level of resilience, the better that person's ability to cope with environmental stressors and stress arousal. These results demonstrate the efficacy of resilience in mitigating the detrimental impact of individual stressors and stress arousal on burnout and audit practices. The hypothesized model generated favorable fit statistics, and seven of the nine hypothesized relations were fully supported with no unexplained or anomalous results.

As [Fig. 2](#) illustrates, both stress arousal and burnout serve to partially mediate the relations between their antecedents and RAQP. Both have direct relations with RAQP (as did stress arousal with performance in [Smith et al., 2007](#), and as did burnout and performance in [Fogarty et al., 2000](#)). In addition, the significant relation measured between role conflict and burnout is consistent with [Smith et al.'s \(2007\)](#) finding, although it is indicative of stress arousal's partial mediation of the influence of role conflict, as opposed to full mediation as implied in [Fig. 1](#).

This study's finding of a significant direct relation between ambiguity and burnout, and the lack of a significant direct relation between role ambiguity and stress arousal is consistent with [Smith et al. \(2007\)](#). The non-significant relation with stress arousal lends additional support to [Schaubroeck, Cotton, and Jennings' \(1989\)](#) proposition that an otherwise significant finding may be attenuated by a significant correlation among the role stressors. Role overload and role conflict were correlated at 0.513 while role conflict and role ambiguity were correlated at 0.546. As a consequence of these rather strong correlations, a significant relationship between role ambiguity and stress arousal may have been attenuated. There is support for this argument in the findings reported by [Smith et al. \(2007\)](#) and [Smith et al. \(1995\)](#). Combined, these findings provide additional evidence to support the argument that estimates of the effects of role conflict and role ambiguity are affected by the covariance between them ([Schaubroeck et al., 1989](#)).

Role overload failed to demonstrate any of the posited relations, i.e., a direct positive relation with stress arousal or indirect relation with

<sup>13</sup> [Chong and Monroe \(2015\)](#), citing [Kerlinger and Pedhazur \(1973, 19\)](#) suggest that this technique "can be used to determine whether the pattern of correlations for a set of observations is consistent with a specific theoretical formulation".

<sup>14</sup> We conducted a similar analysis substituting the 147 participants from the five largest firms in the large firm category in place of the 84 Big-4 firm participants, and the found similar results, i.e., neither firm size, rank, nor gender were significant predictors of RAQP.

burnout. However, overload did have a significant direct association with burnout (0.138) and a subsequent marginally significant indirect relation with RAQP (0.050,  $p$ -value = 0.062). These results may also be due to the size of the correlations between overload and both role conflict (0.501) and role ambiguity (0.231). Even with these large correlations, all three of these constructs have been shown to be distinct through exploratory and confirmatory factor analysis reported by Smith et al. (2007), and the confirmatory factor analysis in this study. Given the size of the correlations between these two constructs and role overload, they may have negated the latter's effects. That is, the explanatory power of role overload may have been subsumed by role conflict and role ambiguity. Moreover, our findings of marginal support for associations between role overload and outcomes may also be related to the timing of the survey administration. Our agreement with the firms to provide access to their employees stipulated that the timing of instrument distribution be limited to a window outside of the busy season. Because of the temporal distance between survey completion and the proximal components of role overload most evident during times of heavy workload, the effects of overload on outcomes may have been attenuated. Our results also confirm that RAQP remain a serious issue for the audit community, further emphasizing the need to find functional ways to address it.

As shown in Table 1, each of the itemized dysfunctional behaviors were reported at rates that should be of concern for all stakeholders. Indeed, any occurrence is of concern, but when 18.6% of auditors admit that, on average across all five behaviors, they engage in RAQP at least occasionally (i.e., sometimes, often or nearly always), it creates uncertainty about the veracity of the entire attestation process. Moreover, given the self-reported nature of the data and despite assurances of confidentiality, it seems likely that the actual incidence rate of RAQP is actually greater than that which was divulged; such disclosures would be an admission of malfeasance and inherently contrary to our respondents' self-interest.

## 8. Limitations and conclusions

The present investigation, like all cross-sectional studies that use self-report measures, has certain potential limitations. The use of a self-report measure might have subjected the tested relationships to the influence of common methods variance, or yielded questionable results due to poor instrument design. However, each of the instruments incorporated in this study have been proven valid and reliable in prior research and the confirmatory factor analyses support the theoretical meaningfulness of the latent constructs, thus indicating that the common method of data collection across variables does not explain their correlations and covariances with one another.<sup>15</sup> In addition, the motivations of the volunteers for this study are uncertain.

The cross-sectional nature of the data also raises the concern of trajectory bias, i.e., that states, not traits, were measured, thereby raising speculation that the data would have supported other construct orderings. Therefore, despite the proposed theoretical model's predication on reasonably sound a priori theory and research, causal inferences must await confirmation by future longitudinally structured studies.

The above-referenced limitations notwithstanding, this investigation makes noteworthy contributions to the ongoing effort to “respond to the need for analytically complex models to examine the interrelationships between role stress and job burnout, to

psychological well-being and job outcomes” (Jones et al., 2010, 35). This study's inclusion of stress arousal addresses a need advanced by Chong and Monroe (2015) calling for the examination of other antecedents to job burnout. It also provides additional evidence to support Smith et al.'s (2006, 2007) findings that stress arousal and burnout are conceptually distinct constructs, and extends those findings to establish the conceptual distinctiveness of each of those constructs from that of resilience. Third, it provides empirical evidence to support the proposition that the worry and rumination aspects of stress arousal have a significant role to play in enhancing the traditional role stress model.

We also show that auditor involvement in RAQP remains problematic. As reported in Table 1, dysfunctional audit behavior is not a rare occurrence, and should be of concern to all stakeholders. Furthermore, our findings provide support for the proposition that resilience might serve as a coping mechanism for job stressors and stress arousal in the auditor work environment, and for its capacity to temper the likelihood of RAQP.

Applied research on resiliency training is in its nascence, but there is evidence that behavioral training can be of assistance in promoting perceptions of personal resiliency, as well as fostering a less stressful work environment (Connor & Davidson, 2003; Arnetz, Arble, Backman, Lynch, & Lublin, 2013; Everly, McCabe, Semon, Thompson, & Links, 2014). Although future research is required before any definitive statements about the effectiveness of resiliency training can be made, the aforementioned findings support the potential of resiliency training programs as a way to increase performance and decrease the incidence of RAQP.

If future research supports the efficacy of resiliency training, it may be possible to realize positive results even without specialized training. For example, managers may have the ability to foster resilience in their subordinates by simply making them aware of available resources to help them accomplish goals, through actively listening to concerns, and by offering encouragement and support. Creating an environment of cooperation rather than competition should also be beneficial. Moreover, it should be possible to train people to appraise their environment in constructive and adaptive ways, and encourage them to avail themselves of available support systems in order to actually negate the harmful effects of stress. (Britt & Jex, 2015).

Given the apparent state of the auditing work environment, a compelling argument can be made for systematic efforts to better understand the stress dynamic in workplace, and recognizing the potential mitigating influence of coping mechanisms such as resilience. Future research efforts might investigate whether the relations uncovered herein hold when key demographic factors such as organizational level, gender, functional area, tenure at the firm, etc., are incorporated as potential moderators. A longitudinal study designed to measure this study's posited relations before and after implementation of a job-based resilience training program would appear to be particularly valuable to those seeking to mitigate the cost of excessive stress in the accounting workplace. Indeed, the best prospects for mitigating the negative organizational and personal consequences of excessive stress are through the employment of interventions as early as possible in the causal process (Smith et al., 2007). Given that there are aspects of the public accounting work environment that are inherently stressful, “the best way to build stress resistance and foster resiliency may be to target the cognitive-affective domain, more specifically, the cognitive-affective indicators of acute stress arousal” (Smith et al., 2007, 155). As noted above, resilience appears to attenuate the cognitive-affective response, thus supporting future research to evaluate interventions designed to

<sup>15</sup> We also conducted Harman's single factor test (Harman, 1976) to evaluate whether the variance in our model could be explained by a single factor. This explanation was rejected when several explanatory factors were identified.

simultaneously enhance staff members' resilience and reduce their stress arousal.

Stress can be viewed as a subjective misfit between the person and the environment, and understanding each is important for understanding its nature and consequences (Edwards, Caplan, & Harrison, 1998). By recognizing the sources and repercussions

of stress, and taking advantage of the opportunities to manage it, the auditing profession may be able to substantially reduce, if not eliminate, the dysfunctional behaviors documented herein. The practical benefits that may ultimately accrue to firms and their audit staff are self-evident.

**Appendix A. Lifestyle/career survey scale items**

(The proprietary nature of the resilience scale precludes us from presenting it in this appendix. Interested readers are encouraged to visit the following website to obtain additional information about the scale: <http://www.connordavidson-resiliencescale.com/>.)

Stress arousal				
This section is designed to determine the extent that you are satisfied or dissatisfied with various aspects of your job. Please circle the appropriate response to indicate your level of satisfaction with each job aspect.				
Within the last few weeks, how often have you found yourself...	Seldom or never	Sometimes	Often	Almost always
1. Anticipating or remembering upsetting things?	1	2	3	4
2. Thinking about things which upset you?	1	2	3	4
3. Concerned or worried?	1	2	3	4
4. Repeating unpleasant thoughts?	1	2	3	4

Burnout						
Please indicate the extent to which each statement accurately describes how you feel about your job by circling the appropriate response.	Is very much UNLIKE me	Is UNLIKE me	Is somewhat UNLIKE me	Is somewhat LIKE me	Is LIKE me	Is very much LIKE me
1. I feel a lack of personal concern for my supervisor.	1	2	3	4	5	6
2. I feel I'm becoming more hardened toward my supervisor.	1	2	3	4	5	6
3. I feel I am becoming less sympathetic toward top management.	1	2	3	4	5	6
4. I feel I am an important asset to my supervisor.	1	2	3	4	5	6
5. I feel I satisfy many of the demands set by top management.	1	2	3	4	5	6
6. I feel I make a positive contribution toward top management goals.	1	2	3	4	5	6
7. Working with my boss directly puts too much stress on me.	1	2	3	4	5	6
8. I feel emotionally drained by the pressure my boss puts on me.	1	2	3	4	5	6
9. I feel burned out from trying to meet top management's expectations.	1	2	3	4	5	6

Reduced audit quality practices					
During the past year, how often have you acted in the following manner when carrying out an audit?	Never	Rarely	Sometimes	Often	Nearly always
1. Accepted weak client explanations	1	2	3	4	5
2. Failed to research an accounting principle	1	2	3	4	5
3. Made superficial reviews of documents	1	2	3	4	5
4. Prematurely signed-off on an audit step	1	2	3	4	5
5. Reduced work below what you considered reasonable	1	2	3	4	5

Role stressors <sup>a</sup>					
Again, please circle the appropriate response to indicate you level of satisfaction with various aspects of your job. Please indicated the extent to which you feel certain or uncertain about the various aspects of your job.					
To what extent do you agree or disagree with the statement...	Strongly disagree	Disagree	Neither	Agree	Strongly agree
1. I receive an assignment without the resources to complete it.	1	2	3	4	5
2. I receive incompatible requests from two or more people.	1	2	3	4	5
3. Overall, I often receive conflicting directions.	1	2	3	4	5
4. Clear planned goals/objectives exist for my job.	1	2	3	4	5
5. I know how my performance is going to be evaluated.	1	2	3	4	5
6. I know exactly what is expected of me.	1	2	3	4	5
7. I am responsible for an almost unmanageable number of projects or assignments at the same time.	1	2	3	4	5

8. I simply have more work to do than can be done in an ordinary day.	1	2	3	4	5
9. I feel that I just don't have time to take an occasional break	1	2	3	4	5
10. Overall, I have too much work to do in this job.	1	2	3	4	5

<sup>a</sup> Items 1–3 are measures of role conflict, 4–6 of role ambiguity, and 6–10 of role overload.

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