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Validation of the Auditor's Self-Efficacy Scale

Jonathan Muterera*

School of Business, Nipissing University, North Bay, ON, Canada
*Corresponding author: jonathanm@nipissingu.ca

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Abstract This study validates the Auditor's Self-Efficacy (ASE) Scale within the framework of Bandura's social cognitive theory, addressing the need for a context-specific measure of auditors' confidence in their professional capabilities. The necessity for such validation arises from the need for an audit-specific self-efficacy measurement tool and the fragmented approach to measuring self-efficacy in the auditing literature. The scale's psychometric properties were rigorously assessed through a structured survey conducted among 360 auditors from international auditing firms, confirming its reliability and unidimensional structure. This validation not only enriches the auditing literature by providing a reliable measure of self-efficacy but also sets the stage for further investigation into its influence on auditor behavior and audit quality. Recognizing the existing scale's potential, the study underscores the importance of refining and expanding this tool to capture the full spectrum of auditor self-efficacy. Future research is encouraged to develop a questionnaire that more precisely reflects the auditors' confidence across various professional tasks, employing a detailed 5-point Likert scale to gain deeper insights. This proactive approach aims to enhance auditor performance and audit quality, contributing significantly to the field by outlining directions for empirical research and practical application in measuring and improving auditor self-efficacy.

Keywords: *Self-Efficacy, Auditor's Self-Efficacy (ASE) Scale, ASE Scale Validation, social cognitive theory, psychometric analysis, auditor performance, auditor professional confidence*

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1. Introduction

Self-efficacy, a fundamental concept in Bandura's [1] seminal social cognitive theory, has long been recognized as a critical determinant of human behavior and achievement. It refers to individuals' beliefs in their ability to organize and execute actions necessary to achieve specific goals [2]. Over time, the measurement of self-efficacy has evolved from early conceptualizations by Sherer and colleagues [3] to the development of the General Self-Efficacy Scale (GSES) by Schwarzer and Jerusalem [4], providing researchers with valuable insights into individuals' confidence across various domains.

Despite the widespread application of self-efficacy scales in fields like education, health, sports, career, and entrepreneurship, the auditing profession needs a dedicated self-efficacy measurement tool. Auditors play a crucial role in upholding financial reporting integrity and professional standards, yet the existing literature in auditing lacks a standardized scale tailored to evaluate auditors' self-efficacy as they navigate their unique challenges.

Various studies in auditing have utilized different measurement tools to assess auditors' self-efficacy across different contexts. For example, McNatt and Judge [5] used the Saks [6] Self-efficacy Inventory for Entry-level Public Accountants, while Shih et al. [7] modified existing measurements, and Mohd Iskandar et al. [8] used an instrument by [9] to measure self-efficacy's mediating role in auditors' performance. These studies highlight the importance of self-efficacy in auditing contexts and demonstrate the lack of a standardized measurement of auditor self-efficacy.

This absence of a dedicated self-efficacy measurement tool tailored to auditing represents a significant gap in the literature. While the self-efficacy scale used in Al Natour and colleagues' [10] study wasn't specifically tailored for auditing, its adaptation aimed to assess auditors' self-efficacy. By validating such a refined self-efficacy scale, this study seeks to encourage its use in research focused on auditor self-efficacy, addressing the pressing need for a standardized approach in evaluating auditors' confidence levels and enhancing the quality and reliability of audit processes.

This paper embarks on a detailed exploration of the Auditor's Self-Efficacy (ASE) scale, beginning with a literature review that sets the theoretical backdrop of self-efficacy as conceptualized by [1], its implications across various domains and its particular resonance within the auditing profession. The methodology section will unfold the process undertaken to validate the ASE scale, including sampling strategies and employing statistical analyses to assess the scale's reliability and validity. Following this, the results section will present the empirical findings, showcasing the ASE scale's psychometric strengths and affirming its utility in measuring auditors' self-efficacy. The discussion will then

contextualize these findings within the broader self-efficacy and auditing literature, deliberating on the scale's potential to inform practice and research by elucidating the link between auditors' self-efficacy and audit outcomes. The paper will conclude by summarizing the significant strides made in understanding auditors' self-efficacy through the ASE scale, acknowledging the study's limitations, and charting paths for future research to extend the scale's applicability and integrate it with other relevant psychological constructs in auditing, thereby paving the way for further scholarly inquiry and practical advancements in the field.

2. Literature Review

The literature review delves into self-efficacy's pivotal role in human behavior and achievement, as outlined by Bandura's [1] social cognitive theory. It traces the evolution of self-efficacy measurement from Sherer and colleagues' [3] initial scale to the General Self-Efficacy Scale (GSES) by Schwarzer and Jerusalem [4], which offers a broad assessment of individuals' confidence across diverse scenarios. The review extends to domain-specific self-efficacy scales, emphasizing their significance in educational, health, sports, career, and entrepreneurial contexts. Notably, it highlights varied self-efficacy measurement tools within the auditing/accounting literature, underscoring the lack of a standardized scale in this field.

2.1. Early Development

The social cognitive theory, introduced by Bandura [1], heralded a paradigm shift in psychological research by emphasizing the role of self-efficacy beliefs in shaping human behavior and achievement. Self-efficacy (SE) is defined as 'people's judgments of their capabilities to organize and execute courses of action required to attain designated types of performances' [2].

In the early 1980s, Sherer and colleagues [3] and subsequent work by Sherer and Adams [11] introduced a pioneering instrument that revolutionized the assessment of individuals' self-efficacy beliefs. Building on this work, Schwarzer and Jerusalem [4] developed an improved and shorter version of the original self-efficacy instrument: The General Self-Efficacy Scale (GSES). The GSES, comprising 10 meticulously crafted items, aimed to comprehensively measure individuals' confidence levels in confronting life's challenges (Schwarzer & Jerusalem, 1995). The GSES offered a broad assessment of general self-efficacy, capturing individuals' overarching perceptions of their efficacy across various life situations.

This development of the GSES marked a significant advancement in the field of self-efficacy measurement, as it provided researchers with a standardized tool to assess individuals' beliefs in their capabilities. By encompassing a diverse range of scenarios, the GSES enabled researchers to gain insights into individuals' confidence levels and ability to navigate different challenges. Moreover, the scale demonstrated strong reliability and validity across diverse populations, affirming its effectiveness as a robust measurement instrument [4].

Expanding on Bandura's [1] theoretical framework, the GSES facilitated a deeper understanding of the role of self-efficacy in shaping behavior and outcomes. By capturing individuals' general perceptions of their efficacy, the scale allowed researchers to explore how self-efficacy beliefs influence various aspects of life, including academic performance, health behavior, occupational success, and psychological well-being. Moreover, the GSES facilitated cross-cultural comparisons, as its reliability and validity were established across different cultural contexts.

2.2. Domain-Specific Applications

In addition to the GSES, researchers have developed numerous domain-specific self-efficacy scales tailored to various domains. Some domains where self-efficacy has been explored include education, health and wellness, sports and athletics, career and work, entrepreneurship, etc.

In the academic realm, self-efficacy plays a crucial role in assessing students' confidence in their academic abilities and predicting academic performance. The Academic Self-Efficacy Scale (ASES) is one such instrument that has gained prominence in educational research [12]. Developed to measure students' beliefs in their capability to perform various academic tasks, such as studying, taking exams, and completing assignments, the ASES provides valuable insights into students' perceived competence and motivation in academic settings. Studies utilizing the ASES have demonstrated its predictive validity in determining academic achievement and persistence [13].

Self-efficacy scales tailored to health behavior domains offer valuable tools for assessing individuals' confidence in adopting and maintaining healthy lifestyle habits. The Exercise Self-Efficacy Scale is a widely used instrument that assesses individuals' confidence in their ability to engage in regular exercise. This scale provides researchers and practitioners with valuable insights into individuals' perceived barriers to exercise and their confidence levels in overcoming them. Research utilizing the Exercise Self-Efficacy Scale has shown its utility in predicting exercise adherence and health outcomes, such as weight management and cardiovascular health [14, 15].

Self-efficacy scales tailored to sports performance offer valuable insights into athletes' confidence levels and their impact on athletic performance. The Sports Confidence Inventory (SCI) is a widely used scale that assesses athletes' confidence in their ability to perform specific skills and succeed in competitive sports settings [16]. By measuring athletes' domain-specific self-efficacy beliefs, the SCI helps coaches and sports psychologists identify areas for improvement and develop tailored interventions to enhance athletes' confidence and performance.

In the occupational domain, self-efficacy scales are crucial in assessing employees' confidence levels and predicting job performance. The Occupational Self-Efficacy Scale (OSES), developed by Rigotti et al. [17], is one such instrument that measures employees' beliefs in their ability to perform various job-related tasks and cope with work-related challenges. The OSES has been used in organizational research to explore the relationship between self-efficacy, job satisfaction, and organizational outcomes, highlighting its utility in understanding employee motivation and performance.

Self-efficacy scales tailored to the business domain are essential for assessing individuals' confidence in their abilities to perform various tasks and excel professionally. Within this domain, for example, self-efficacy scales have been used to evaluate entrepreneurs' confidence in their abilities to innovate, take risks, and overcome obstacles in the business environment [18,19]. Hmieleski and Corbett [20] demonstrated self-efficacy's predictive validity in determining entrepreneurial success and business performance. Additionally, self-efficacy scales specific to leadership roles, such as the Leadership Self-Efficacy Scale (LSES), assess leaders' confidence in their abilities to lead and motivate teams effectively [21]. Liu et al. [22] found that self-efficacy in small business start-ups positively affects start-up performance through start-up intention, according to the paper. Agustina et al. [23] found that self-efficacy positively and significantly impacts business performance.

2.3. Self-Efficacy in the Auditing Literature

In the field of auditing and accounting, self-efficacy emerges as a cornerstone attribute, profoundly influencing auditors' confidence in their capabilities to execute comprehensive audits and adhere to the highest professional standards. Grounded in Bandura's [1,2,24] seminal work, self-efficacy is understood not merely as a personal conviction in one's abilities but as a powerful motivator that shapes individual choices, drives persistence, and fosters effective problem-solving and decision-making processes. This psychological construct is particularly pivotal in auditing, where professionals are tasked with making complex judgments under conditions of uncertainty. Auditors with heightened self-efficacy are more motivated, resilient in the face of adversities, and inclined towards continuous professional development, thereby enhancing their performance and the overall quality of audits. This broader understanding of self-efficacy's role sets a comprehensive backdrop for delving into selected studies in this domain.

McNatt and Judge [5] examined the effects of a self-efficacy-enhancing intervention on the attitudes and turnover rates of financial auditors from a Big Four firm. Self-efficacy was meticulously measured by employing the Saks [6] Self-efficacy Inventory for Entry-level Public Accountants, which consists of 37 items on a 10-point scale to gauge their confidence in executing specific tasks. The study's results confirmed that the self-efficacy intervention was effective in enhancing the auditors' self-efficacy, with a reported medium-sized effect [5]. Although the intervention showed promising outcomes in raising self-efficacy levels, its overall impact on job attitudes, such as job satisfaction, commitment, and intention to quit, was relatively weak [5]. The intervention had marginal effects on job satisfaction and intention to quit, suggesting that while there was a trend towards positive effects, these did not achieve statistical significance across all job attitudes [5]. Overall, this study revealed that strategic interventions could significantly elevate self-efficacy levels, enhancing job satisfaction and reducing turnover rates among auditors in demanding and high-stakes environments. This research underscores the critical role of targeted self-efficacy measures in bolstering employee morale and loyalty, particularly in roles requiring meticulous attention to detail and high levels of professional competence.

In their study of the influence of moderating factors on the self-efficacy and engagement of internal auditors, et al. [7] found that self-efficacy exhibits an influence on the behaviour, motives, and performances of employees, as well as work choices and performances. Self-efficacy was considered one of the critical factors influencing the levels of work involvement by internal auditors [7]. In this study, self-efficacy was measured using a self-reported Likert five-point scale. The measurements used in this study were modified from previous measurements and had good validity and reliability, but no specific questions were provided.

Mohd Iskandar et al. [8] explored the mediating role of effort in the relationship between self-efficacy, accountability pressure, and auditors' performance. It involved 62 auditors from small and medium-sized firms in Indonesia, using the Chen et al. [9] instrument with eight items to measure self-efficacy on a seven-point Likert scale. Results showed that self-efficacy and accountability pressure positively influenced audit judgment performance through increased effort, highlighting the importance of motivational factors in enhancing auditors' performance.

Su et al. [25] explored the relationship between self-efficacy and performance among governmental auditors in Taiwan. They surveyed about 50% of all governmental auditors in Taiwan to understand the factors enhancing their performance. The study used a self-efficacy measurement tool designed by Schwarzer and Jerusalem [4]. The sample included 326 valid responses from auditors, and the findings highlighted the positive influence of auditing experience and professionalization on auditors' professional awareness, knowledge, and skillset, ultimately improving their professional judgment.

Erlina and Muda [26] explored the impact of self-efficacy and professional development on the quality of work performed by internal auditors in local governments. Self-efficacy was measured using an eight-item instrument designed by Chen et al. [9]. The findings suggest that enhancing these factors could improve audit quality and, by extension, the overall performance of local government financial management. The authors suggested that internal auditors, especially in local government environments, might have needed to enhance their self-efficacy and professional development to perform their duties more competently [26]. The quality of audit work was seen as crucial for achieving reliable results in accordance with applicable standards, and this study contributed to understanding the factors that could influence this quality [26].

Syahril Djaddang et al. [27] investigated the effects of self-efficacy and professional ethics on internal audit quality, focusing on whether professional ethics could moderate the relationship between self-efficacy and audit quality. Self-efficacy was measured using a five-dimensional instrument adapted from [1], focusing on aspects like loyalty to the profession and confidence. The findings indicated that self-efficacy significantly impacts audit quality, and individualism culture acts as a mediator in this relationship [1].

The Alamin et al. [28] study explored how self-efficacy influenced Libyan accountants' intentions to adopt

Accounting Information Systems (AIS). It involved 216 accountants from Libyan industrial firms. The study utilized a self-efficacy measurement tool comprising four items to evaluate accountants' confidence in using Accounting Information Systems (AIS) independently. The items addressed scenarios such as completing tasks without direct guidance, seeking help when stuck, having ample time for tasks, and relying on built-in help features. These items assessed the accountants' belief in their ability to navigate and utilize AIS effectively in various situations. The research found that self-efficacy, effort expectancy, and environmental pressures significantly affected accountants' behavioural intentions toward AIS, explaining 63.4% of the intention variance [28]. This highlighted the critical role of self-efficacy and contextual factors in adopting technology in professional settings.

Usman et al. [29] examined the impact of work experience, motivation, and culture on auditor performance, with self-efficacy as a mediating factor. The study employed a questionnaire-based survey with 60 respondents from the Inspectorate of Maros Regency and Makassar City [29]. Self-efficacy was measured using a specific instrument, although the paper does not explicitly detail the tool or its reliability and validity. The main findings indicated that work experience, motivation, and culture significantly affect auditor performance and that self-efficacy mediates these relationships [29].

In a study of self-efficacy and professional ethics and their impact on internal audit quality, Djaddang and Lysandra [30] measured self-efficacy using a five-dimensional instrument adapted from Bandura (1986), focusing on aspects like loyalty to the profession and confidence, among others. The reliability of the self-efficacy measurement was confirmed with a Cronbach's alpha of one, indicating high reliability. The main findings showed that self-efficacy and professional ethics significantly affect internal audit quality, with professional ethics also moderating the relationship between self-efficacy and audit quality.

Zare Bidoki et al. [31] discuss the mediating role of self-efficacy in the relationship between goal orientation and auditors' judgment performance. The sample included 199 auditors from Yazd and Isfahan provinces, using Bell and Kozlowski's 4-item self-efficacy questionnaire, demonstrating reliability (α=0.82) [31]. The findings indicated that performance and mastery approach goals positively influenced self-efficacy and judgment performance, while avoidance goals had adverse effects. Self-efficacy significantly mediated these relationships, underscoring its role in enhancing auditors' performance.

Muhsin [32] examined the relationship between self-efficacy, effort, auditor time budget pressure, and audit judgment performance among Indonesian auditors. The sample included auditors from levels I to VII at BPK Republic of Indonesia, with 90 respondents participating. Self-efficacy was measured using an eight-item instrument designed by Chen et al. [9]. The main findings indicated that self-efficacy positively and significantly influenced both effort and audit judgment performance, and auditor time budget pressure significantly affected the relationship between effort and audit judgment performance.

The study conducted by Al Natour et al. [10] aimed to explore the role of forensic accounting skills in enhancing auditors' self-efficacy towards fraud detection in Egypt and examined the moderating effect of CAATTs (Computer-Assisted Audit Techniques and Tools) on this relationship. A cross-sectional survey was distributed to 117 external auditors in Egypt to collect data. The self-efficacy of auditors was measured using a 7-item scale adapted from Su et al. [25]. The main findings indicated that forensic accounting skills, such as effective communication and psycho-social skills, significantly influenced auditors' self-efficacy and, subsequently, their ability to detect fraud. Additionally, the CAATT application was found to moderate the relationship between auditors' self-efficacy and fraud detection, highlighting the importance of integrating technology with forensic accounting skills to enhance fraud detection efforts in Egypt. It presents a notable contribution by adapting and refining a self-efficacy scale proposed initially by Su et al. (2016). While the self-efficacy scale used in this study was not specifically tailored for auditing purposes, its adaptation for this study aimed to provide a comprehensive assessment of auditors' self-efficacy. Its application in auditing offers valuable insights into auditors' confidence levels.

Overall, the exploration of various studies within the auditing context reveals a significant emphasis on understanding how auditors' self-efficacy influences their job performance, decision-making, and adherence to professional standards. For instance, interventions aimed at enhancing auditors' self-efficacy have been shown to improve job satisfaction and reduce turnover rates, suggesting that bolstering auditors' confidence in their abilities can lead to more favourable job attitudes and greater professional retention.

However, a recurring theme across these studies is the lack of a standardized self-efficacy measurement tool tailored to the auditing profession. This gap is noteworthy as it highlights the need for a more specialized instrument that can accurately assess auditors' self-efficacy in relation to their specific professional tasks and the unique challenges they face within the auditing domain.

In light of the pivotal role auditors play in ensuring the accuracy and trustworthiness of financial reporting, the significance of understanding the determinants of their performance cannot be overstated. As evidenced by numerous studies within the auditing field, self-efficacy emerges as a vital factor shaping auditors' behaviors, decision-making processes, and adherence to professional standards. However, the absence of a standardized self-efficacy measurement tool explicitly tailored to the auditing profession underscores a critical gap in the literature. This gap highlights the pressing need for rigorous research endeavors to develop and validate specialized instruments capable of accurately assessing auditors' self-efficacy in the context of their professional duties. The validation of recently refined self-efficacy scales, exemplified by the work of Al Natour et al. [10], represents a crucial movement in that direction. By bridging theoretical insights with empirical validation, such studies enrich the academic discourse on self-efficacy in auditing and hold profound practical implications for audit firms and regulatory bodies. These implications extend to various facets of auditor training, development, and performance evaluation, ultimately

bolstering the integrity and reliability of audit processes in safeguarding financial markets and public trust.

3. Design and Methodology

This research adopts a quantitative approach, testing and validating the ASE (Auditor's Self-Efficacy) scale's psychometric properties. To this end, a structured survey was meticulously developed, encompassing items designed to assess various facets of auditor self-efficacy, grounded in established psychometric principles.

3.1. Sampling Strategy and Participants

Participants for this validation study were carefully chosen through a detailed sampling procedure, drawing from a pool of auditors engaged with international accounting firms in three Southern African countries.

In this investigation, 360 auditors participated, achieving a balanced gender representation, with 57% identifying as female and 43% as male. The educational attainment among these auditors varied significantly: 64% had earned Bachelor's degrees, 30% held Master's degrees, and a smaller segment, 5%, had PhDs or equivalent doctoral degrees. Remarkably, 93% of these auditors possessed professional certifications, underlining their substantial expertise. Their experience in their present positions also showed a broad spectrum: 29% were in the 1-5 year range, 38% had 6-10 years of experience, 20% fell into the 11-15 year category, with the remaining participants having longer tenures.

3.2. Measurement Instrument

The assessment of Auditor's Self-Efficacy (ASE) within this study was facilitated through an adapted version of the ASE scale, initially referenced by et al. [10], who in turn drew upon the foundational work of Su. Due to the unavailability of the original questionnaire devised by et al. [25], this research incorporated the ASE scale as operationalized in the study by Al Natour.

The ASE scale comprised seven statements designed to gauge auditors' confidence in their ability to perform various tasks and achieve set goals within their professional domain. The items included in the scale are as follows:

1. **ASE1**: "I am able to achieve most of the goals that I have set for myself."
2. **ASE2**: "When facing difficult tasks, I am able to accomplish them."
3. **ASE3**: "In general, I think that I can obtain outcomes that are important to me."
4. **ASE4**: "I believe I can succeed at almost any endeavor to which I set my mind."
5. **ASE5**: "I am confident that I can perform effectively on many different tasks."
6. **ASE6**: "Compared to other people, I can do most tasks very well."
7. **ASE7**: "Even when things are tough, I can perform quite well."

Respondents were asked to rate their agreement with each statement on a Likert scale, which quantitatively measures their self-perceived efficacy in their roles as auditors. This instrument was pivotal in capturing the nuanced dimensions of self-efficacy among auditors, contributing significantly to the study's exploration of psychometric properties associated with the ASE scale.

3.3. Data Analysis

The present study employed a comprehensive statistical approach to examine the psychometric properties of the Auditor's Self-Efficacy (ASE) scale. Data analysis was conducted using IBM SPSS version 29 for reliability analyses and IBM SPSS AMOS version 29 for Confirmatory Factor Analysis (CFA), adhering to established methodological standards in psychometrics [33].

4. Results

4.1. Descriptive Statistics

The examination of self-efficacy among auditors, as presented in this study, involved a sample of 360 highly qualified and experienced professionals. Descriptive statistics for the seven items of the Auditor's Self-Efficacy (ASE) scale are shown in Table 1. As seen in Table 1, the means of the items (ASE1 through ASE7) varied narrowly between 4.038 and 4.048, indicating a consistently high level of self-efficacy across different scale dimensions. The standard deviations for these items were relatively low, ranging from .589 to .607, suggesting a slight variability in the responses but overall indicating homogeneity in the self-efficacy beliefs among the auditors. The minimum scores for the items were 2, and the maximum of 5. No item recorded a mean below 4.0, reflecting the sample's strong sense of self-efficacy. This uniformity in high scores suggests that the auditors possess a robust belief in their capabilities to perform audit-related tasks effectively.

Table 1. Descriptive Statistics

Item	Min	Max	Mean	Std. Deviation
n = 360				
ASE1	2	5	4.047	0.594
ASE2	2	5	4.048	0.594
ASE3	3	5	4.049	0.597
ASE4	2	5	4.041	0.594
ASE5	2	5	4.039	0.590
ASE6	2	5	4.045	0.607
ASE7	2	5	4.038	0.598

4.2. Reliability Assessment of the Auditor's Self-Efficacy Scale

The reliability of the ASE scale was gauged through Cronbach's alpha (α), a widely recognized index of internal consistency and scale homogeneity [34, 35]. For the 7-item ASE scale, Cronbach's α was calculated, revealing an α of .996. This value significantly exceeds the commonly accepted threshold for acceptable reliability (.70), indicating a very high level of internal consistency among the scale items [35]. Such a high α value suggests that the items are highly interrelated and consistently measure the underlying

construct of the auditor's self-efficacy.

4.3. Confirmatory Factor Analysis of the Auditor's Self-Efficacy Scale

A Confirmatory Factor Analysis (CFA) was conducted on the Auditor's Self-Efficacy (ASE) scale using a sample of 360 respondents. The analysis aimed to validate the unidimensional factor structure of the ASE scale, consisting of seven items (ASE1 to ASE7), representing a single latent construct of auditor's self-efficacy.

4.3.1. Model Specification and Fit

The specified model was recursive, with no feedback loops, treating the ASE scale items as observed variables influenced by a single latent factor. The model's fit to the data was assessed using several fit indices. As seen in Table 2, the chi-square test yielded a value of $\chi^2 = 6.803$ with 14 degrees of freedom and a probability level of p = .942, indicating an exceptionally good fit of the model to the data. The Root Mean Square Error of Approximation (RMSEA) approached zero, also suggesting an exceptionally close fit. Additional fit indices, including the Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), Normed Fit Index (NFI), and Goodness of Fit Index (GFI), all approached 1, further corroborating the model's adequacy [36].

Table 2. Model Fit Indices for the ASE Scale CFA

Fit Index	Value	Interpretation
χ^2 (df)	6.803 (14)	Indicates an excellent fit; the high p-value (.942) suggests the model is consistent with the observed data.
RMSEA	.010	Near zero value implies a close fit of the model to the data.
CFI	1	Indicating a good fit between the hypothesized model and the observed data.
TLI	0.989	Near 1, indicating a good fit between the hypothesized model and the observed data.
NFI	0.999	Near 1, indicating a good fit between the hypothesized model and the observed data.
GFI	0.995	Near 1, indicating a good fit between the hypothesized model and the observed data.

4.3.2. Factor Loadings

Table 3. Factor Loadings and Squared Multiple Correlations for ASE Items

Item	Standardized loadings	SMC (Reliability)
ASE1	0.986	0.972
ASE2	0.988	0.975
ASE3	0.985	0.971
ASE4	0.986	0.973
ASE5	0.985	0.971
ASE6	0.986	0.972
ASE7	0.987	0.973
Cronbach's Alpha for the ASE Scale α = .996		

The factor loadings were significant and strong, representing the relationships between the latent ASE construct and each item. As seen in Table 3, the standardized regression weights ranged from .985 to .988, indicating that all items were robust indicators of the latent construct.

4.3.3. Reliability and Error Variance

As shown in Table 3, the squared multiple correlations (SMC), reflecting the proportion of variance in each item explained by the latent factor, ranged from .971 to .975, indicating excellent reliability. The variances for the error terms associated with each ASE item were low (ranging from .009 to .010), further attesting to the measurement precision. These results were corroborated by Cronbach's alpha calculated for the ASE scale as presented above.

4.3.4. Assessment of Discriminant Validity in the Auditor's Self-Efficacy Scale

Discriminant validity represents a cornerstone in the construct validation process, delineating the degree to which a construct is distinct from other constructs within the theoretical framework [37]. For the Auditor's Self-Efficacy (ASE) scale, discriminant validity was evaluated using the Fornell-Larcker criterion, a rigorous and widely endorsed method in psychometrics [38,39].

The Fornell-Larcker criterion posits that a construct exhibits discriminant validity if the Average Variance Extracted (AVE) square root surpasses the magnitude of its correlation with any other construct in the model [38]. The AVE, a measure of the variance captured by a construct vis-à-vis the variance attributable to measurement error, serves as a quantitative testament to the construct's uniqueness [39].

For the ASE scale, the AVE was computed based on the variance of each item, approximating the squared factor loadings derived from a Confirmatory Factor Analysis (CFA). The calculated AVE was 0.355, with the square root of the AVE being approximately 0.596. This numerical threshold is pivotal in comparing the construct's correlation with other constructs to affirm discriminant validity.

Given the dataset's limitation to a single construct (ASE), the traditional application of the Fornell-Larcker criterion faced constraints, as the criterion necessitates inter-construct correlations for a comprehensive assessment. However, the obtained square root of AVE (.596) provides a foundational benchmark for future studies that may incorporate additional constructs for a more extensive validation of the ASE scale.

5. Discussion

This study's validation of the Auditor's Self-Efficacy (ASE) scale contributes significantly to the existing literature on self-efficacy in the auditing/accounting profession. The discussion will expand upon the findings' implications for theory and practice, acknowledge limitations, and propose directions for future research.

5.1. Theoretical Implications

The findings of this study have several theoretical implications for the understanding of self-efficacy in the auditing context. Firstly, the ASE scale's high reliability and internal consistency, as demonstrated by Cronbach's

alpha, reaffirm the robustness of the construct of auditor self-efficacy. This aligns with Bandura's [1,2,24] social cognitive theory, which posits that self-efficacy beliefs influence behavior and outcomes. The validation of the ASE scale provides empirical support for applying social cognitive theory in the auditing profession. Additionally, the confirmatory factor analysis confirms the unidimensional structure of the ASE scale, further validating its theoretical underpinnings and providing a standardized tool for measuring auditor self-efficacy.

5.2. Practical Implications

The practical implications of this study are manifold. Firstly, auditing firms and practitioners can utilize the validated ASE scale to accurately assess auditors' confidence in their abilities. By understanding auditors' self-efficacy levels, firms can tailor training programs and interventions to enhance auditors' confidence and improve job performance and satisfaction. Moreover, policymakers and regulatory bodies can use the ASE scale as a benchmark for evaluating auditor competence and ensuring adherence to professional standards. By promoting a culture of self-efficacy among auditors, firms can enhance audit quality and integrity, benefiting stakeholders and the public.

5.3. Limitations & Suggestions for Future Research

Despite the rigorous methodology employed in this study, several limitations should be acknowledged. First, the study's sample was limited to auditors from three Southern African countries, which may limit the generalizability of the findings to other cultural contexts.

Second, Cronbach's α value of .996, while indicative of high reliability, surpasses the typical benchmarks for acceptable (.70), good (.80), and even excellent (.90) internal consistency levels, as noted in the literature. While high α values are generally desirable, a value as elevated as .996 raises considerations regarding the potential redundancy of items within the ASE scale. According to Tavakol and Dennick [40], α values above .90 might suggest that some scale items do not add unique value to the construct assessment, potentially leading to inefficiencies within the scale. Given this, it may be prudent to further investigate the individual items of the ASE scale to ascertain their unique contributions to the construct measurement. This could involve detailed item analysis or consideration of scale refinement to optimize the balance between reliability and the comprehensive assessment of the auditor's self-efficacy.

Third, the preliminary assessment of discriminant validity for the ASE scale, albeit constrained, lays the groundwork for subsequent research. Future studies are encouraged to expand the theoretical model to include related constructs, facilitating a more robust application of the Fornell-Larcker criterion. Such endeavors will enhance our understanding of the ASE scale's distinctiveness and its role within a broader nomological network.

Finally, the scale that was tested and validated in this study could be improved upon. To advance future research in auditing and self-efficacy, designing a questionnaire tailored explicitly for auditors is paramount. In future research endeavors to develop a questionnaire to measure Auditor Self-Efficacy based on Bandura's [1] theory, it is imperative to carefully construct statements that accurately reflect auditors' confidence levels across essential domains of their profession. For instance, statements such as "I am confident in my ability to perform audit procedures accurately and efficiently" can effectively capture auditors' self-beliefs in task execution. In contrast, others like "I believe I can effectively identify material misstatements during the audit process" would assess their proficiency in identifying critical errors. Assessing auditors' capacity to handle unexpected challenges can be achieved through statements like "I feel capable of handling unexpected challenges that may arise during the audit." Similarly, evaluating communication skills may involve statements like "I am confident in my ability to communicate audit findings clearly and concisely to stakeholders." Moreover, statements like "I am confident that my audit work will lead to meaningful improvements in financial reporting integrity" can gauge auditors' belief in outcome expectations, while motivation for skill enhancement could be measured using statements like "I am motivated to continuously enhance my auditing skills and knowledge to improve my performance." Employing a 5-point Likert scale for each statement would enable nuanced responses, allowing auditors to express their level of agreement or confidence, ranging from strongly disagree to strongly agree. Such an approach would provide valuable insights into auditors' self-efficacy perceptions across diverse facets of their profession, thus informing future research endeavors and practical interventions to enhance auditors' performance and professional development.

6. Conclusions

In conclusion, this research comprehensively explores the Auditor's Self-Efficacy (ASE) scale within the auditing profession. The findings underscore the pivotal role of self-efficacy in shaping auditors' confidence and capacity to navigate the complexities of audit tasks. The meticulous development and validation of the ASE scale, grounded in the robust framework of social cognitive theory, contribute significantly to our understanding of self-efficacy in a professional setting. The high reliability and validity of the ASE scale proposed by Al Natour et al. [10], as demonstrated through rigorous statistical analyses, affirm its potential as a valuable tool for academic research and practical application in auditing.

The theoretical implications of this study extend beyond the immediate context of auditing, offering insights into the broader application of self-efficacy theory in professional domains. The confirmation of the unidimensional structure of the ASE scale enriches the existing body of knowledge on self-efficacy measurement, providing a solid foundation for future research endeavors. Practically, the ASE scale offers audit firms and regulatory bodies a reliable instrument to assess and enhance auditors' confidence, potentially leading to improved audit quality and greater adherence to professional standards.

However, the journey does not end here. The limitations of this study, including its regional focus and the high Cronbach's alpha value, highlight areas for further inquiry. Future research could explore the ASE scale's applicability across diverse cultural contexts, potentially enhancing its generalizability. Moreover, a more nuanced examination of the scale's items could optimize its efficiency, ensuring that each item contributes uniquely to assessing auditor's self-efficacy. Additionally, incorporating related constructs into the research model would allow for a more comprehensive evaluation of the scale's discriminant validity, further solidifying its theoretical underpinnings.

As encapsulated by the ASE scale, the evolution of self-efficacy measurement within the auditing profession marks a significant advancement in our understanding of the psychological constructs that underlie professional competence and performance. As we continue to delve into the intricate dynamics of self-efficacy and its implications for the auditing field, this research serves as a beacon, guiding future inquiries and practical interventions to foster a resilient and competent audit workforce. The path forward is ripe with opportunities for scholarly exploration and useful innovation, promising to elevate the auditing profession to new heights of excellence and integrity.

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