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Are Auditors Really Independent in Making Professional Judgment?

Reyhaneh Haghighi, Mohammad Ali Bagherpour Velashani*, Ali Ghanaei Chamanabad, Mohammad Reza Abbaszadeh

Faculty of Economics and Administrative Sciences, Ferdowsi University of Mashhad, Mashhad, Iran

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Abstract

This study scrutinizes the independence of auditors in making professional judgments, exploring the influence of personal characteristics on audit quality. Utilizing a descriptive survey approach, the research examines a sample of 425 auditors from audit organizations and the Iranian Association of Certified Public Accountants (IACPA). Data collection occurred through field surveys and questionnaires administered in 2022, with analysis conducted using Structural Equation Modeling (SEM) in "R" software version 4.0.2. The results reveal a significant association between auditors' independence and personality characteristics, indicating a potential impact on audit quality. Specifically, the findings suggest that auditors may not consistently demonstrate independence in their professional judgments. This study pioneers an investigation into auditors' genuine independence concerning personal traits, offering valuable insights for regulators, standard setters, and policymakers to consider in refining regulations and standards. Moreover, the research contributes to the expansion of literature in this critical domain.

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*Corresponding Author:
Mohammad Ali Bagherpour Velashani
Email: bagherpour@um.ac.ir
Tel: 09132279622
ORCID: 0000-0002-0255-0810

1. Introduction

The increasing demand for reliable information requires auditors to attest to the financial reports, making auditing an integral part of the financial reporting process (Gardner, 2000). The need for this attention and also consideration of independence in the Code of Ethics issued by the International Ethics and Standards Board for Accountants (IESBA 2018) emphasized the importance of auditors' independence to monitor the contractual arrangements between principals and agents in the agency theory literature. The auditors' independence and professional judgment are important in assuring the stakeholders (Bebeji et al., 2022; Balkir, 2000; Chiang, 2016). The impairment of independence in the audit processes, especially when making judgments, reduces audit quality. Therefore, identifying the factors affecting independence and professional judgment is important, and more research is required in this area. Reviewing the related literature shows that prior researchers do not investigate all the potential factors affecting real independence, especially in emerging markets requiring more research in this area. This provides the main reason for conducting the current study.

It is expected that auditors make similar and fair judgments in accordance with the audit standards framework; however, prior researches (Setiawan, 2018; Nolder and Riley, 2014) show that despite unique audit standards and Code of Ethics, auditors make different judgments on the same and similar issues implying that auditor's independence may be impaired. It indicates that other factors also affect auditors' independence, which justifies doing more research in this area.

According to the International Federation of Accountants (IFAC) (2018), auditors' independence has two dimensions: independence of mind (real independence) and independence in appearance. Reviewing prior research (such as Bartlett 1993, Teoh and Lim 1996) indicates that most of them have focused on independence in appearance and independence of mind is not well investigated. This is because of its nature, i.e., not observable and measurable, making it difficult for researchers to develop and apply a suitable proxy. This study tries to formulate and introduce a proxy for measuring real independence using professional judgment. According to 'IFAC (2018, pp1)', independence of mind (real independence) is 'the state of mind that permits the expression of a conclusion without being affected by influences that compromise professional judgment …' implying that professional judgment is the core of independence of mind.

Accordingly, it can be concluded that the factors, especially personality characteristics, affecting professional judgment can also affect independence of mind. Therefore, we can use professional judgment as a proxy for independence of mind (real independence). It should be considered that both of them (professional judgment and independence of mind) take place in the mind (Carvalho Júnior et al., 2017, IFAC 2018), so cognitive characteristics are expected to be more influential than other affecting factors.

According to cognitive studies, the variables affecting decision-making and judgment can be divided into four categories, including emotions (Vigil-Colet, 2007), cognitive skills (Bertrand and Schoar, 2003, Fischhoff 2010), personality type (Ji et al., 2018) and the feelings (Finucane et al., 2000, Mellers, 2000). It should be mentioned that some of these variables (e.g., cognitive skills and feelings) are not studied in the auditing context, providing another justification for doing this research. Prior researchers also show that people with higher cognitive skills make choices that comply more with expected ethical values (Cokely and Kelley 2009). Differences in cognitive skills can affect judgment, decision-making (Peters and Levin, 2008; Stanovich and West, 2008) and ultimately real independence. In addition, different sensitive reactions to internal and external factors can result in different judgments (Mellers, 2000).

Some theories, such as Carl Gustav Jung's (1921) and dual processing theory, indicate that emotion, cognitive skills, personality type, and feelings affect audit judgment. Also, the results of cognitive research indicate that the appropriate decision-making process requires a balance between

the feelings and perceptions of individuals (Damasio, 1994). Paying attention to cognitive skills and feelings can improve the quality of decision making and the degree of auditor risk-averse (Henninger et al., 2010; Jin et al., 2019; Damasio, 1994), leading to improved audit independence and quality.

Investigating cognitive factors and their interaction is also one of the innovations of this study. Incorporating them and their interactions in audit literature may provide a better understanding of auditors' judgment and decision-making processes, especially in emerging markets, which are not fully considered in auditing and accounting literature (Salehi and Dastanpoor, 2021). The third section provides the research method. The fourth section presents the study's findings, and the final section reports the conclusions, including implications and limitations.

2. Literature review

This section presents a review of the related theories (dual process theory and Carl Gustav Jung theory), auditor's independence and judgment, and cognitive factors affecting judgment.

2.1 Dual process theory

Recent decision-making theories seek to integrate cognitive, emotional and contextual information to explain decision-making processes' complexities. Dual processing theory is one of the most important theories in this field (Epstein et al., 1996). In this theory, individuals are influenced by two distinct nervous systems called the "rational-analytical" system and the "experiential-intuitive" system when making decisions. The "rational-analytical" system is a type of neural information processing that is slower, logical, analytical, and governed by rules. The "experiential-intuitive" system is a type of neural information processing that is faster, more associative, and driven by emotions and intuition. Although rational and strategic decision-making benefits humans, it is not the best option. Sometimes, making decisions based on emotions and intuition can also have an important effect on improving choices and increasing the quality of decision making. In other words, the integration of two processes can lead to improvement, especially in uncertain and risky situations. In such situations, the use of the "experiential-intuitive" system becomes more important. Epstein et al. (1996) believe that decision-making processes rely more on the "experiential-intuitive" system. Hence, dual processing theory integrates logical cognitive processes with emotional and contextual processing. In other words, the function of neural structures based on emotions, cognitive components, and their integration allows sound decision making in different fields.

In 1994, Damasio presented a somatic marker hypothesis that emphasized the role of emotion and emotional processing in better decision-making by providing a physical and emotional label. This "label" is reused during subsequent decisions based on experience. Bechara and Damasio (2005) also believed that physical somatic is combined with cognitive processes by pinpointing which particular alternative in a decision scenario should be chosen by working memory(a component of executive function).

2.2 Carl Gustavo Jung theory

Carl Gustav Jung identified four psychological functions: sensation, intuition, thinking and feeling. Like thinking and feeling, sensation and intuition are opposite components. Although each person experiences all four functions, Jung assumed that only one function is more dominant in each person. In addition, he believes that each of these four functions is different according to the general attitude of introversion and extroversion. Intuition and sensation are functions related to perception. Also, thinking and feeling are related to evaluating and interpreting perceptions. In other words, he considers perception and evaluation as two separate categories (Jung, 1921). Judgment and decision-

making is a process of understanding and evaluating information and options, as well as concluding based on perceptions (Pirtošek et al., 2009), so, attention to perceptions and evaluating them is essential to understand judgment better. Therefore, it can be implied that paying attention to personality characteristics and sensory processing when making decisions is important. In recent psychological research, such as those by Marjerison and Pan (2022) and Khoo et al. (2022), this theory was applied to examine decision-making.

Attribution theory also refers to how a person interprets an event and the causes of his behavior. This theory states that internal and external stimuli determine an individual's behavior. The discussion of this theory leads to the factors causing the existence of an event or events. This attribution theory can be used to understand what factors influence the auditor when doing an assignment (Wahidahwati and Asyik, 2022) as sensory processing shows the reaction of individuals to internal and external stimuli, so we can infer that the theory justifies the examination of this variable in the current study.

2.3 Auditor's independence

Auditor independence is explained as the basis of auditing (Previts and Merino, 1998) and is the essence of audit that provides objective assurance for financial statements and enhances the credibility and reliability of the financial reports (Quick and Warming, 2009).

The International Federation of Accountants (IFAC 2018) categorized independence into two dimensions: independence in fact (mind) (IIF) and independence in appearance (IIA). Both dimensions are critical elements in maintaining public confidence in the audit profession (Pany and Reckers, 1980). Independence, in fact (IIF), is the state of mind that allows the auditor to carry out the audit processes with objectivity, integrity, and professional skepticism. Independence in appearance (IIA) refers to the informed users' perception of the audit and auditors' following of audit standards.

Prior research shows that independence had more effect on corporate collapses of the early 21st century (Brown, 2005), which requires more research to identify the factors affecting this kind of independence.

Audit researchers investigated factors affecting independence such as gifts; purchase discount arrangement (Pany and Reckers, 1980); the audit firm size (Gul, 1989); the provision of management advisory services by the audit firm (Bartlett 1993, Teoh and Lim, 1996); the level of competition in the audit services mark (Gul, 1989); the client's financial condition (Gul, 1989, Gul and Tsui 1992); the nature of conflict issue (Knapp, 1985); the audit firm's tenure (Teoh and Lim, 1996); the degree of competition in the audit services market (Knapp, 1985, Gul, 1989); the audit fees or relative client size (Bartlett 1993, Teoh and Lim, 1996, Pany and Reckers, 1980); and the audit committee (Gul, 1989, Teoh and Lim, 1996). As can be seen, the investigated factors are mainly related to independence in appearance. It may be related to the fact that independence is unobservable (an inner variable) and not measurable, making it difficult for researchers to investigate.

Based on the above definition provided by IFAC (2018), this paper argues that audit judgment can be a good proxy for independence and hypothesizes that factors affecting audit judgment, especially psychological ones, can also affect independence. Deficiencies in auditors' psychological characteristics can negatively affect the audit process, especially when collecting information and making professional judgments. Demetriou et al. (2021) showed that depressed individuals have a negative bias in perceiving key cues, which can affect auditors' professional skepticism and judgment as well as independence requiring more research in this area. This paper investigated the effect of psychological characteristics on audit judgment (as a proxy of independence) and provided a model for independence based on this relationship.

2.4 Auditor's professional judgment

Judgment is a process of making a decision or drawing a conclusion among possible alternative solutions in uncertain and risky conditions (Fischhoff and Broomell 2020).

'The International Auditing and Assurance Standards Board (IAASB) (2018)', defines professional judgment as 'the application of relevant training, knowledge, and experience, within the context provided by auditing, accounting, and ethical standards, in making informed decisions about the courses of action that are appropriate in the circumstances of the audit engagement.'

Regarding the vital role of professional judgment in the audit process (Dawes and Hastie 2001), the quality of financial reports (Ionela 2016), the users' decisions (Firth, 1980) and the market (DeAngelo, 1981), it is necessary to study the factors that can affect it, i.e., psychology dimensions (emotion, cognitive skills, personality, and feelings), which is the subject of this research.

2.5 Emotion and professional judgment

There is no scientific consensus on the definition of emotion (Kleinginna and Kleinginna, 1981), and prior efforts to reach a specific definition have been unsuccessful (Eelen, 2018).

Sander et al. (2005) defined emotion as an "episode of interrelated, synchronized changes in the states of all or most of the five organismic subsystems in response to evaluating an external or internal stimulus event as relevant to major concerns of the organism.'

One of the factors that can affect and control emotions and its components is emotional intelligence (Goleman, 1995). Emotional intelligence (EI) has been defined as 'being able to motivate oneself and persist in the face of frustrations; to control impulse and delay gratification; to regulate one's moods and keep distress from swamping the ability to think; to empathize and to hope' (Goleman, 1995). Mayer et al. (2004) consider four interrelated abilities for emotional intelligence, including using emotions to facilitate decision-making, perceiving emotion (oneself and others), perceiving emotion, and managing emotion.

According to Goleman (1998), decisions are dynamically related to mood and emotions, and this relationship can enhance the quality of decision making. In this regard, Buontempo (2005) and Damasio (1994) show that emotions and emotional intelligence affect decision making.

Emotional intelligence plays a prominent role in situations involving judgment and decision making (Goleman, 1998), which is mainly the case in audit providing another justification for this research. Although the effects of emotional intelligence on an auditor's judgment have been investigated in prior audit research (Yang et al., 2018; Coget et al., 2011; Côté et al., 2010) and the effects of its interactions with other important psychological variables such as personality type and depression are considered in psychological research (Roman et al., 2019, Siu, 2009, Vigil-Colet, 2007, Furnham and Chamorro-Premuzic 2004), the effects of this interaction are not investigated in audit area.

Law et al. (2004) show that individuals with high emotional intelligence can effectively realize their emotions and regulate them for their tasks. Auditors deal with ethical dilemmas in their jobs and their emotional intelligence can help them take appropriate ethical action (Ismail 2015). Prior research (Mesmer-Magnus et al., 2010; Deshpande and Joseph, 2009; Angelidis and Ibrahim, 2011) show that people with high emotional intelligence tend to do more ethically than those with lower emotional intelligence. Therefore, auditors with high emotional intelligence are expected to make better judgments resulting in a high degree of independence.

2.6 Cognitive skills and judgment

Cognitive skills refer to an individual's ability to do a variety of mental activities that are mainly

related to learning and problem solving (Wehmeyer and Kelchner, 1994). They are applied in acquiring knowledge, manipulating information, reasoning, and how people learn, remember, and pay attention (Kiely, 2014; Danili and Reid, 2006).

Schneider and McGrew (2012) classified individual cognitive abilities into four categories: acquired knowledge (crystallized intelligence), domain-independent general capacities (fluid reasoning and memory), sensory-motor abilities (visual and auditory processing), and general speed (processing speed, reaction times, and psychomotor speed).

One of the most important components of cognitive skills is executive functions. Executive functions are basically the brain's management system, and its deficiency can have a major impact on one's ability to perform tasks such as planning, prioritizing, organizing, paying attention and remembering details, controlling emotional reactions, and decision making (Alvarez and Emory, 2006). Various studies, such as Baruch Fischhoff (2010), show that decision making is affected by executive function. Prior research (Németh et al., 2020; Guarino et al., 2019; Alvarez and Emory, 2006) also show that executive function can affect responding to environmental drivers, self-regulating thoughts and behaviors, flexibility, and decision making. In this regard, prior psychological research shows that deficiencies in executive functions are associated with behavioral problems such as anxiety, depression, and emotional problems (Fujii et al., 2013, Hollocks et al., 2014), neurotic personality (Buchanan, 2016, Bell et al., 2020) unadaptability and unconsciousness (Buchanan, 2016, Bell et al., 2020).

2.7 Personality (including disorders) and judgment

Personality is defined as a person's characteristic (trait) pattern of behaviors in the broad sense (including thoughts, feelings, and motivation)' '(Uher and Visalberghi, 2016)'. Personality traits reflect people's characteristic patterns of thoughts, feelings, and behaviors (Matthews et al., 2003).

Personality traits can also be conceptualized as a set of stable individual differences in people's motivational reactions to environmental stimuli (Denissen and Penke 2008). There are different models of personality traits in the field of psychology. The most important and popular of them, which is labeled as the Big Five (Denissen and Penke 2008, Bakker et al. 2006, Wang, 2014), is applied in this research. Multiple studies have evaluated the impact of personality traits on decision-making (Riaz and Batool, 2012; Bajwa et al., 2016; Bayram and Aydemir, 2017). The relationship between personality traits and judgment is also investigated in auditing, but the results are mixed (Muris et al., 2009), requiring more research in this area.

A personality disorder, a personality trait component, is a way of thinking, feeling and behaving that deviates from the expectations of the culture, causes distress or problems functioning, and lasts over time (American Psychiatric Association & American Psychiatric Association 2013). Psychologists believe that personality disorder is a common and chronic disorder and its prevalence is estimated to be 10-15% of the general population, which results in unreasonable decision making (Ekhtiari and Behzadi, 2001). Martin (2010) also shows that personality disorder can result in unethical behavior, which can be the case in the audit profession, requiring more research in this area.

In audit research, only the relationship between auditors' overconfidence and Machiavellian personality is investigated through judgment. While anxiety and depression are important personality disorders affecting decision making and judgment (Demetriou et al., 2021; Hartley and Phelps, 2012; Huys et al., 2015; Gur et al., 1992), they are not studied in prior research.

2.8 Feelings and Judgment

The word "feeling" was used to explain the physical sensation of touch through either experience or perception and other experiences, such as a feeling of warmth' and

sentience (VandenBos, 2006). Behavioral researchers concluded that feeling reactions (including feelings and mental states) play an important role in the judgment and decision-making process. Also, different reactions and sensory processing can result in different judgments (Finucane et al., 2000; Mellers, 2000). Psychological research such as Damsio (1994) suggests that the appropriate decision-making process requires a balance between feelings and perceptions of individuals. LeDoux (1993) concluded that people's perceptions of their reactions can help them choose and make decisions in different circumstances. Regarding the audit process, which is full of decision-making and judgment, it seems that doing research in this area can help auditors improve the quality of their decisions and judgments.

It is necessary to know and control the sources of feelings and reactions. If the sources are not properly managed, they will easily lead to bias in judgment and decision making (Golman, 1995). Sensory processing is one of these sources, the most basic psychological element underling how people perceive and react to environmental drivers. Dunn (2001) believes that each person has her/his unique way of processing sensory. People with high sensory processing tend to respond to lower sensory thresholds and can better recognize environmental differences (Aron and Aron 1997). A person with a low sensory threshold pays full attention and responds to drivers. When a person has a high threshold, it means that the person ignores drivers that other people easily notice (Dunn, 1997). Individuals with low sensory thresholds (high sensory processing) are more affected by emotion than others, as they are more sensitive to drivers. In addition, the performance of their emotional memory, especially negative emotions, is better. This finding is consistent with studies that show individuals with high sensory processing sensitivity have higher levels of anxiety, negative emotions, and depression (Aron et al., 2005; Liss et al., 2005; Bakker and Moulding, 2012; Listou Grimen and Diseth, 2016, Lionetti et al., 2019) affecting the level of attention and biased behavior resulting in unfair judgment. There is no research on this area in audit literature, which provides a new subject for doing research in audit and accounting, implying another justification for doing this research.

Stenmark and Redfearn (2022) show that individuals with higher sensory processing sensitivity (SPS) are more sensitive to stimuli and prefer to think about ethical problems. In the case of auditors, it can be argued that auditors with higher sensory processing may have higher level of independence.

Recently, Fernandez-Prieto et al. (2021) show that there is relationship between executive functions and sensory processing. Soler et al. (2019) showed that there is a positive correlation between sensory processing style and executive functions, but Adams et al. (2015) and Hebert (2015) did not find any relationship between them. Although these variables and their relationship are important in making judgments, they are not considered in prior audit research.

3. Research design

Since the study investigates psychological factors on audit judgment, it is categorized as a descriptive-correlative research, and as the researchers use questionnaires, it is also considered a surveying investigation. This research uses a library method for preparing research literature and questionnaires to collect statistical data. The questionnaires for each variable include 60-item revised NEO personality inventory (Costa and McCrae, 1985) for personality type, Bar-on (Bar-on 1997) and Facial expressions(1) for emotional intelligence, Adult sensory profile for Sensory processing, Barkley questionnaire (Barkley, 2011) and the SST test (Chikazoe, 2009) for executive function, Beck anxiety and depression inventory questionnaire (Beck and Steer, 1990) for anxiety and depression and Hurtt questionnaire (2010) and Zarefar auditing ethics Questionnaire (2016) for professional judgment. These questionnaires are chosen based on psychological experts.

1 https://greatergood.berkeley.edu/quizzes/ei_quiz

The statistical population consists of the auditors of the audit firms, which have had Grade A during the last three years. They should have at least 3 years- work experience.

A maximum of 425 people with an effect size of 0.2, a first type error of 0.05 and a power of 80% has been determined as a sample size using a special below formula for determining the sample size for modeling structural equations that distributed, and 83 questionnaires were collected and finally, 70 questionnaires were examined. The outbreak of COVID-19 and its consequences, especially in audit firms, has a significant effect on the cooperation of the auditors. The collected data were analyzed using R statistical software version 4.0.2.

Error Function:

$$\operatorname{erf}(x) = \frac{2}{\sqrt{\pi}} \int_0^x e^{-t^2} dt$$

The smaller bound sample size for a structural equation model:

$$n = \max(n_1, n_2)$$

Where:

$$n_1 = \left\lceil 50\left(\frac{j}{k}\right)^2 - 450\left(\frac{j}{k}\right) + 1100 \right\rceil$$

$$n_1 = \left\lceil \frac{1}{2_H}\left(A(\frac{\pi}{6}) - B + D\right) + H + \sqrt{\left(A\left(\frac{\pi}{6} - B + D\right) + H\right)^2 + 4_{AH}\,(\frac{\pi}{6} + \sqrt{A} + 2_B - C - 2_D)} \right\rceil$$

A=1-p^2

B=$p$arcsin($\frac{p}{2}$)

C=$p$arcsin(p)

D=$\frac{A}{\sqrt{3-A}}$

H=$\left(\frac{\partial}{z_{1-\alpha/2}-z_{1-\beta}}\right)^2$

Where:

J: is the number of observed variables,

k :is the number of latent variables,

ρ: is the estimated Gini correlation for a typical two-variable random vector,

δ: is the size of the predicted effect,

α : is the amount of type 1 error with Sidak correction,

β :is the amount of error Type two

z : usual standard score.

M: is the mean,

σ: is the standard deviation

erf : the error function

4. Results

Researchers use goodness-of-fit indicators to evaluate the fitness of the overall model with the observed data for the research model reported in Table 1. According to the obtained indicators, it can be seen that all the indicators are almost acceptable, so the results of the model are reliable.

Table 1. Goodness indicators

Index	RMSEA	SRMR	TLI	CFI	AGFI	GFI	χ^2/df
Optimal amount	006.0<	Near to zero	0.950>	0.950>	0.900>	0.900>	Between 1 to 3
Acceptable amount	0.100<	Near to zero	0.900>	0.900>	0.8>	0.800>	Between 1 to 5
NEO Personality Inventory	0.098	0.040	0.946	0.973	0.995	0.999	1.674
Bar-on Emotional Intelligence	0.167	0.137	0.769	0.845	0.960	0.980	2.811
Barkley Deficits in Executive Functioning	<0.001	0.003	1.000	1.000	0.999	1.000	0.094
Adult Sensory Profile	<0.001	<0.001	1.000	1.000	1.000	1.000	<0.001
Beck's Depression Inventory	<0.001	<0.001	1.000	1.000	1.000	1.000	<0.001
Judgment	<0.001	0.013	1.000	1.000	0.988	0.008	0.792

The Average variance extracted (AVE) and composite reliability (CR) indices and Cronbach's alpha value are reported in Table 4, respectively, showing the model's structure validity and reliability.

Table 2. Evaluation of convergence validity and structural reliability

Model	Cronbach's alpha	CR	AVE
NEO Personality Inventory	0.780	0.620	0.500
Bar-On Emotional Intelligence	0.897	0.919	0.457
Barkley Deficits in Executive Functioning	0.897	0.876	0.800
Adult Sensory Profile	0.854	0.926	0.807
Beck's Depression Inventory	0.898	0.912	0.777
Judgment	0.785	0.939	0.755

The results (Table 3) show a direct relationship between adults' sensory processing (PHB) and auditor's opinion (GH) (with intensity of 0.405). This shows that the sensory threshold (the level of stimulation that the person reacts to the stimulus) and the auditors' reaction to the environmental stimuli influence their opinion. In other words, the auditors' attention to environmental stimuli and their reactions can affect their concentration and emotions (Kamath et al., 2020), which can affect auditors' opinions and the quality of their judgments. Examining the results of behavioral research (Finucane et al., 2000; Mellers, 2000) also shows that reaction to environmental stimuli affects their ability to make professional judgments and decisions.

The research results show that there is a negative relationship between anxiety and the auditor's opinion (GH) (with an intensity of 0.255). Anxiety leads to a decrease in the level of concentration (Azizpour et al., 2013), which negatively affects decision-making (Karvay et al., 2022). In other words, anxious auditors have a lower concentration level and cannot focus when expressing opinions, affecting the quality of auditors' judgments and opinions. The research results align with Hartley and Phillips (2012).

The research results showed a negative relationship between emotional intelligence and deficits in executive function (with an intensity of 00.452). Individuals with higher emotional intelligence perform better in executive function components (such as time management planning) (Godini and Baghfalki, 2015; Arguedas et al., 2016). According to Jerome and Liss (2005), there is a direct relationship between emotional intelligence and sensory processing (aligned with the findings, with an intensity of 0.488), there is a negative relationship between emotional intelligence and anxiety and depression (aligned with the findings, with an intensity of 0.342), and according to findings, anxiety and sensory processing are related to opinions, It can be expected that emotional intelligence, deficits in executive function (KEB) and their interaction indirectly affect auditors' opinion.

Also, the results show that there is a relationship between deficits in executive function (KEB) and depression (A) (with an intensity of 0.557). Since depression has a negative effect on the level of concentration and decision-making (Azizpour et al., 2013; Karvay et al., 2022), it can affect their opinion and the quality of their judgment. The result of this research is aligned with Hartley and Phelps (2012).

Table 3. Estimating and evaluating the appropriateness of load factor

Factors	Non-standard estimation	Standard Error	T-statistics	P-Value	Load factor
PHB → GH	0.402	0.133	3.017	0.003	0.405
Ezterab → GH	-0.168	0.077	-2.18	0.029	-0.255
HH ↔ tip	15.107	3.476	4.346	<0.001	0.811
tip ↔ KEB	-29.615	9.442	-3.136	0.002	-0.483
tip ↔ PHB	24.914	9.193	2.71	0.007	0.409
tip ↔ A	-11.957	3.503	-3.413	0.001	-0.573
HH ↔ KEB	-13.623	4.284	-3.18	0.001	-0.452
HH ↔ PHB	14.599	4.413	3.308	0.001	0.488
HH ↔ A	-3.51	1.415	-2.48	0.013	-0.342
KEB ↔ A	18.792	5.098	3.686	<0.001	0.557

The model based on research findings is presented below:

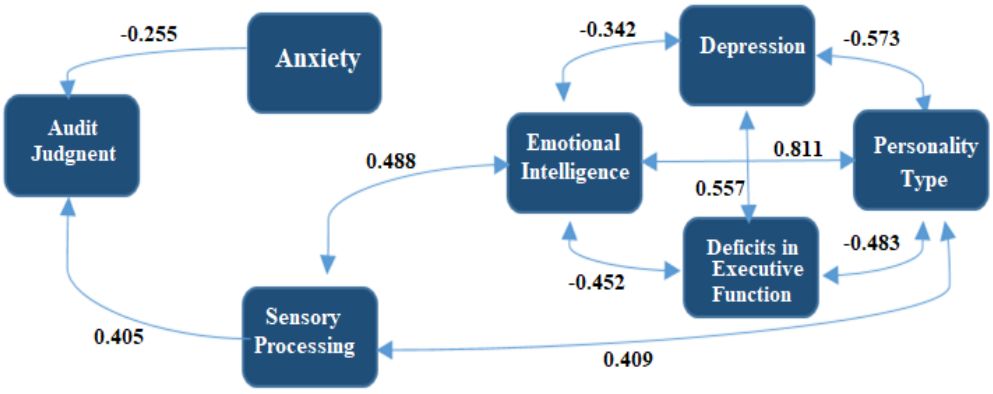

Figure 1. The final model

5. Conclusion and discussion

For the first time, this study developed a proxy for measuring independence in fact and provided a conceptual model of its affecting psychological factors. In general, the findings imply that auditors are not independent in some situations because of these factors. The summary of findings is presented below:

1. The sensory processing as a source of controlling feeling affects auditors' judgment. Accordingly, it can be argued that auditors in some situations are not really independent and do not act independently. This result is consistent with Bhattacharjee and Moreno (2002), Finucane et al. (2000) and Mellers (2000).
2. The anxiety affects auditors' judgment negatively. Because auditors with high anxiety show more negative biases in the interpretation of stimuli and also cannot have a high level of concentration, therefore it can be argued that such auditors have a lower quality of judgment and independence. The results of prior research (such as Chen et al., 2019; Leykin and DeRubeis, 2010) show that anxious people are weak in making immediate and intuitive decisions. This

implies that auditors with this characteristic may have weak judgment and independence. The finding is also consistent with Chen et al. (2018), Hartley and Phelps (2012) and Zinbarg and Yoon (2008).

3. Emotional intelligence plays a vital role in accurately recognizing feelings and controlling those (Wojciechowski et al., 2014; Porter et al., 2011). Also, individuals with this characteristic have a high skill in identifying inconsistencies and controlling stress (Nikolaou and Tsaousis, 2002) and better compliance ethics. Therefore, it can be said that the influence of emotional intelligence on an auditor's judgment can reduce auditors' tendency to engage in inefficient behavior and improve audit quality. It also helps auditors to comply with ethical requirements and independence of mind (real independence). The finding aligns with Jerome and Liss (2005).
4. Executive functions are important in controlling and directing behavior, performing tasks correctly, and controlling and managing pressures. Also, because executive function components can help control emotions (Tripathi, 2017), emotion control plays an important role in the quality of judgment and decision. The finding aligns with Arguedas et al. (2016) and Godini and Baghfalaki (2015). However, the research result is inconsistent with Del Missier et al. (2012), who showed that executive function is not the determined factor for different aspects of decision making.
5. Personality traits indirectly affect audit judgment and independence in relation to the above psychological variables. The finding aligns with Williams et al. (2010), Denburg et al. (2009), and Khalil (2016) but is not consistent with Bayram and Aydemir (2017) and El Othman et al.(2020).
6. Personality disorders such as depression can make it difficult for auditors to control and properly manage their emotions. In addition to affecting people's social relationships, the lack of proper management of emotions can also affect a person's job performance. Due to the fact that the audit profession is a teamwork profession and deals with different clients, emotion management is important for them. Also, past research (Suri et al., 2004) showed that the inability to manage feelings and emotions in depressed people leads to an increase in the sense of hopelessness and reduces the quality of decision-making; this can have a negative effect on the quality of auditors' judgment and independence of mind (real independence). The finding is aligned with Karvay et al. (2022), Hindmarch et al. (2013), and Leykin et al. (2011).

This study has limitations. Generalizability is the first limitation. Also, carelessly answering the questionnaire is another limitation. The outbreak of COVID-19 and its consequences is another limitation that affected the number of questionnaires received. The final limitation suggests that in addition to the variables, several more effective factors could not be considered in this paper.

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