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Ergonomic Interventions in the Implementation of Risk-Based Audit to Overcome Dysfunctional Auditor Behavior

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ABSTRACT

It is undeniable that auditors are expected to develop a strong audit plan to produce value-added audit reports. Given the preceding, current practice in auditing shows that many auditors use Risk-Based Audit (RBA) to determine an appropriate audit scope. RBA could effectively guide auditors to define audit scope based on the assessed risk. However, RBA does not consider human factors in performing audits. Consequently, most auditors encounter time budget pressure in meeting tight audit deadlines. Such an issue could adversely affect auditors' productivity and health. On the other hand, ergonomics is a discipline that focuses on human capabilities in completing tasks. The study also guides employees to adapt to the job while improving their well-being and increasing the quality of work results. Therefore, this study aims to intervene the principles of RBA with ergonomics. RBA consists of three stages: risk assessment, response, and reporting. The authors have concluded that ergonomics could intervene in RBA in the risk response step once the risk level is determined in the risk assessment phase by conducting a literature review study. Therefore, the auditors should balance the time budget allocation based on the assessed audit risk (low, moderate, or high). As the entity's risk is high, the audit team should be given an extended time allocation and vice versa. The findings suggest that auditors should develop an appropriate time budget scheme for specific audit procedures based on the assessed risks resulting from RBA implementation.

KEYWORDS:
Risk-based audit; time budget pressure; ergonomics

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INTRODUCTION

It is widely recognized that auditors are gatekeepers in ensuring integrity, accountability, fairness, and transparency of financial statements presented by companies. Auditors also should report value-added information to the intended users of financial statements. Thus, robust audit planning is crucial in producing qualified audit reports. Nowadays, many private and public-sector auditors utilize Risk-Based Audit (RBA) principles in performing audits (Sastra, Yuhertiana & Budiwitjaksono, 2018; Tuanakotta, 2013). The RBA guides auditors to focus on recorded and unrecorded risks, improving the audits' financial statement assurance and reporting process (Nyarombe, Musau, Kavai & Kipyegon, 2015). By implementing RBA principles, auditors could detect risky areas in organizations. RBA, furthermore, guides the auditors to assign audit procedures and audit scope based on the assessed risk (Tuanakotta, 2013).

Nevertheless, Sastra *et al.* (2018) argued that even though RBA had been effective in detecting risky areas in an organization, which could affect the fairness of financial statements, the RBA principles might not consider auditors' behavior. In other words, RBA mainly focuses on technical factors but likely fails to examine human factors in audits. Failure to consider human ability in conducting a job could adversely affect the job quality and results (Wiratama, Ng & Lukman, 2019). In this case, the authors would focus on the time budget pressure (Gundry & Liyanarachchi, 2007; Nadirsyah, Indriani & Usman, 2011). Gundry and Liyanarachchi (2007) also Nadirsyah *et al.* (2011) insist that time budget pressure is a notorious issue that most auditors encounter. As a result, auditors could face unrealistic time budget allocation despite the audit workload. That being the case, such pressure could cause auditors to act and behave dysfunctionally when fulfilling their responsibilities.

In literature, an auditor's dysfunctional behavior is reduced audit quality practices or RAQP (Gundry & Liyanarachchi, 2007). Some forms of RAQP include incomplete audit paperwork and a narrow-tiered review process of audit reports. Moreover, under the pressure of a tight schedule, auditors could also perform unprofessionally by accepting the auditee's weak explanations of possible errors or reducing the audit procedures and samples determined by the standards.

On the other hand, ergonomics is a discipline that focuses on human capabilities to finish tasks without compromising their health (Setyawan, 2011). Ergonomics also guides how employees adapt to a job promoting their productivity and wellbeing (Setyawan, 2011). Previous studies report that ergonomics has been practiced in various areas, such as health (Setyawan, 2011) and education (Mustika & Sutajaya, 2016). Moreover, some scholars have researched the ergonomics in the field of computer science (Desta, Kustono & Patmanthara, 2016, as well as Mardhia & Bariyah, 2020); manufacture (Pradini, Lucitasari & Putro, 2019), and the service sector (Aisha, 2014).

The previous studies also show that ergonomics could intervene in work-related procedures and work-related tools utilized to complete tasks (Susihono & Adiatmika, 2017). Illustrating ergonomics intervenes by rearranging an office workspace and office chair design to prevent employees from back pain (Purnama, Dewi & Yuniartha, 2015). Additionally, ergonomics has been utilized to intervene in work-related procedures by rearranging the system of nurses' working hours, preventing the nurse from experiencing any occupational health problems (Frederick, Habes & Schloemer, 1984). In this study, however, the authors would focus

on how ergonomics could intervene in the methodology of RBA to help auditors conduct audits.

Arguably, previous research in audits focuses on how time budget pressure affects the performance of auditors, resulting in dysfunctional behavior, thereby compromising the quality of audit results (Gundry & Liyanarachchi, 2007; Juliyanty, Eko, Rahman & Subekti, 2019; Nadirsyah *et al.*, 2011; Silaban, 2012; Shbail, Salleh & Nor, 2018; Smith, Emerson & Boster, 2018). However, in this study, the authors propose a solution to address the time budget pressure encountered by auditors. The proposed solution is ergonomics intervention on RBA methodology to overcome time budget pressure and preserve qualified audit reports.

This study aims to distinguish this study from the previous research and add literature on ergonomics intervention in auditing. Arguably, the results of this study could also complement literature in auditing on factors affecting the audit quality and auditors' behavior. Accordingly, this study could guide auditors to develop audit processes and determine audit procedures based on risk areas, time allocation, and human factors.

RESEARCH METHOD

Given the preceding, this study is a literature review structured as follows. First, the authors elaborate on previous studies on RBA's principles, time budget pressure in conducting audits, and how stress triggers dysfunctional auditor behavior. Furthermore, the authors surveyed public sector auditors to attest to whether auditors eventually experience anxiety despite RBA being implemented. After years of application, it is essential to reassess if there should be improvements in RBA implementation. The authors then utilized the design from the Industrial Fatigue Research Committee (IFRC) to measure and evaluate employees' levels of fatigue (Latar, n.d.; Saito, 1999). Lastly, the authors present how ergonomics could intervene in RBA principles and elaborate on some examples to implement the redesign scheme of ergonomics-based RBA in an audit cycle.

RESULT AND DISCUSSION

Auditors need to balance the amount of time allocation and audit procedures in conducting audits (Gundry & Liyanarachchi, 2007). On the one hand, auditors have limited audit resources. On the other hand, audit workload is more complex since there is a growing demand for accountability in private and public organizations (Prem, 2020). Moreover, audit results should add value to a company since audit consumes valuable resources (Zacchea, 2003). Zacchea (2003) also states that value-added provided by audit results entails that the outcome could influence the decisions of intended users of the reports.

Sastra *et al.* (2018) and Zacchea (2003) suggest that it is necessary first to identify risks to conduct an added-value audit process. The risks could be possible wrongdoing, error, or adverse outcomes companies wish to avoid. Risk identification allows auditors to prevent damage and improve a company's performance, thereby enhancing audit reports' quality. Auditors could identify clients' risks in the planning phase of an audit.

Given the above, auditors must design a rigorous audit plan (Prem, 2020). A proper audit plan is essential because the auditors' constrained resources and today's unpredictable events, such as the coronavirus pandemic, could adversely affect companies' performance. For that reason, auditors should evaluate their approaches and meth-

odologies to investigate risks and control issues in an entity. One of the primary tools to examine a company's risk areas is a risk-based audit or RBA (Tuanakotta, 2013).

Discussion on Previous Studies

Risk-based audit

The planning stage is prominent, including audits (Prem, 2020). Nowadays, most internal and external auditors promote RBA as a tool to guide them in arranging an audit plan (Dejnaronk, Little, Mujtaba & McClelland, 2015; Sastra *et al.*, 2018). In addition, there are some prior studies on RBA implementation. For instance, Castanheira, Lúcia, and Russell (2010) examine factors associated with RBA adoption by companies in Portugal. Their findings indicate that 82 percent of entities utilized RBA in audit planning. Similarly, Dejnaronk *et al.* (2015) argue that RBA influences the effectiveness of internal audits in Thailand. Nyarombe *et al.* (2015) also state that the RBA approach has been implemented in internal control systems in government departments in Kenya. Sastra *et al.* (2018) further explained that the Audit Board of the Republic of Indonesia utilized RBA in the planning stage to identify areas of any high risks in local governments' financial statements.

Moreover, Bechara and Kapoor (2012) emphasize that risk-based audit uses a fundamental concept in audit, identifying what could go wrong and examining to determine its probability. Therefore, an effective RBA could overcome audit constraints by identifying organizations' risks and enabling auditors to conduct a more targeted and efficient audit. Moreover, Zacchea (2003) suggests that RBA focuses on the most-risk areas and guides scarce audit resources to only the most productive audit purposes. Therefore, auditors could find and reveal most likely errors or fraud in an entity. Similarly, Tuanakotta (2013) stated that a prominent characteristic of audit based on the International Audit Standard (ISA) is RBA. Briefly, RBA consists of three stages: risk assessment, risk response, and reporting (Tuanakotta, 2013), as shown in Figure 1 (the complete RBA workflow or methodology is in Appendix 1).

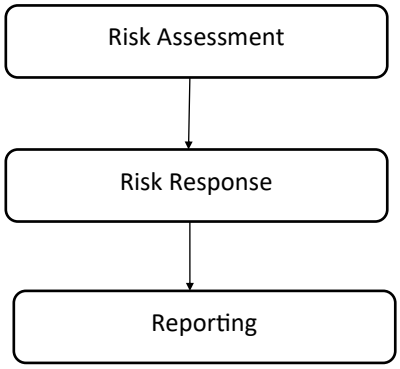


Figure 1. Workflow of RBA
Source: *Tuanakotta (2013)*

According to Tuanakotta (2013), risk assessment is:

> "A process to identify and assess risks of material misstatement, whether due to fraud or error, at the financial statement and assertion levels, through understanding the entity and its environment, including the entity's internal control providing a basis for designing and implementing responses to the assessed risks of material misstatement."

In conducting risk assessment, auditors should identify the inherent risk of the entity by collecting information about the organization's goals, culture, key personnel, and structure. Next, the auditors could analyze the risks at the company and financial statement levels. The auditors could then determine whether the risks significantly influence the presentation of the financial statement. Accordingly, the auditors could specify the risk status by assessing how likely the risks could occur and how much the monetary impact incurred.

Subsequently, auditors should be aware of the internal controls provided to address

some risks identified. At this stage, the auditors should evaluate the internal controls to see whether it is relevant to the audit and whether the rules have been adequately implemented. Lastly, the auditors should summarize the risk assessment's results by combining both inherent and control risks altogether as the risk of material misstatement. The risk of material misstatement is a residual risk after management strives to apply robust internal control in a company. Table 1 shows an example of the risk assessment process.

Table 1. Documentation of Risk Assessment

	Inherent Risk	Control Risk	Risk of Material Misstatement
Financial Statement Level	Moderate	Low	Low
Account Level	Low	High	Moderate

Source: *Tuanakotta (2013)*

Table 1 shows the first scheme when an entity's inherent risk is moderate at the financial statement level. The auditee, however, has developed a robust internal control to mitigate any inherent risks from transpiring. Therefore, the risk of material misstatement or residual risk is low. The second scheme shows that the assessed inherent risk at a particular account is low. Nevertheless, the company does not commit to an appropriate internal control; thus, the control risk for the account is high. Consequently, residual risk is moderate.

The second stage of RBA is risk response. At this stage, the auditors should implement appropriate responses to the risk of material misstatement at the financial statement and account levels. First, the auditors should list all of the identified risks found in the risk assessment stage. The auditors, next, should develop an overall response to the pervasive risks, for instance, fraud risk that could severely influence the financial statement. Subsequently, the auditors should identify specific audit procedures needed for material accounts in the financial statement. In this case, the auditors should utilize their professional judgment to determine the audit scope and choose procedures to adequately address the potential risks and reduce them to an acceptable low level. The following table shows how auditors could set specific audit procedures based on the assessed risks.

Lastly, auditors could apply RBA principles in the stage of reporting. At this stage, the auditor could evaluate audit evidence to determine the reasonable assurance given to the audited financial statement and prepare the audit results. Therefore, RBA assists auditors in determining the audit scope by assessing heightened risk and focusing on those areas (Castanheira *et al.,* 2010; Tuanakotta, 2013).

Nevertheless, the implementation of RBA encounters some challenges (Sastra *et al.*, 2018). The scholars argue that RBA focuses on defining appropriate audit scope, yet, it does not necessarily consider auditors' behavior. Table 2 shows that as the entity's risk increases, the audit procedures become more complex. For that reason, auditors should be given adequate time allocation to perform every audit procedure. Otherwise, they could behave disreputably in audits since they might feel tired and burned out (Wiratama *et al.*, 2019). The scholars also believe that work overload has a positive and significant effect on reduced audit quality. In other words, there is a greater likelihood of dysfunctional behavior among auditors as the level of time budget pressure increases (Shbail *et al.*, 2018; Smith *et al.*, 2018).

Time budget pressure

One particular variable affecting today's audit environment and auditors' dysfunctional attitude is time budget pressure (Gundry & Liyanarachchi, 2007; Juliyanty *et al.*, 2019). Nirmala and Cahyonowati (2013) explain

Table 2. Audit Procedures to Respond to the Assessed Risks

Risk Level	Planned Audit Response
Low	Substantive procedures-basic
	The procedures consist of a simple test of details and analytical procedures.
Moderate	Substantive procedures-basic
	The procedures are developed to respond to the risks in general.
	Substantive procedures-extended
	The procedures are set to respond to the specific risks such as fraud;
	An adequate proportion of test of details could be used to set the risks to an acceptable low level.
High	Substantive procedures-basic
	The procedures are developed to respond to the risks in general.
	Substantive procedures-extended
	The procedures are set to respond to specific risks such as fraud.
	Test of control
	The test is performed to reduce the number of samples in the test of details.

Source: *Tuanakotta (2013)*

that time budget pressure is when auditors are expected to use audit resources efficiently because of the regulation's strict time budget allocation. In other words, time budget pressure is when auditors should maximize the time allocated to conduct and finish an audit cycle (Dezzort, 2002, as cited in Nadirsyah *et al.*, 2011).

Moreover, Gundry and Liyanarachchi (2007) argue that time budget pressure occurs because audit institutions must maximize efficiency by reducing costs to remain competitive. However, often auditors encounter unrealistic time budget allocation related to an audit program. Nadirsyah *et al.* (2011) stated that limited time to complete adequate audit procedures could decrease audit quality. In short, time budget pressure has become a real problem for auditors, given that the problem could cause dysfunctional auditor behavior, thereby adversely affecting audit quality (Maulidawati, Islahuddin & Abdullah, 2017; Monoarfa & Dama, 2018; Nadirsyah *et al.*, 2011).

Dysfunctional auditor behavior

As the current level of exhaustion is higher than optimal, there is an increased likelihood that auditors would engage in dysfunctional behavior (Smith *et al.*, 2018). Dysfunctional auditor behavior is an unethical attitude of auditors in performing audit programs (Juliyanty *et al.*, 2019; Silaban, 2012). Furthermore, dysfunctional auditor behavior can influence auditors' willingness to compromise audit quality (Gundry & Liyanarachchi, 2007; Silaban, 2012). While auditors could not perform audit procedures properly, they may not directly cause an inappropriate audit result. However, they increase the likelihood of audit failure (Gundry & Liyanarachchi, 2007). Thus, dysfunctional auditor behavior is also known as reduced audit quality practices or RAQP (Gundry & Liyanarachchi, 2007).

Ideally, auditors should balance audit procedures' nature, amount, and timing with the time allocated for an audit (Gundry & Liyanarachchi, 2007). Nevertheless, auditors could engage in deviant behavior leading to failure to exercise due care in the audit pro-

cess and undermining the integrity of their work. Smith *et al.* (2018) insist that auditors could decrease the quality and extent of evidence gathered. Furthermore, dysfunctional auditor behavior could lead them to compromise the quality of audit results, given that the time allotted may not be enough to complete the audit assignments appropriately (Juliyanty *et al.*, 2019).

One form of dysfunctional auditor behavior identified in the audit environment is premature sign-off (Shbail *et al.*, 2018). Scholars insist that auditors should professionally conduct an audit and provide reasonable assurance about an entity's financial condition based on the proper evaluation of audit evidence. In order to gain enough competent audit evidence, auditors should arrange audit procedures as a response to risk assessment through the implementation of RBA. However, premature sign-off is when auditors deliberately compromise audit procedures and audit evidence they should perform as stated in the audit program due to time budget pressure.

Moreover, Juliyanty *et al.* (2019), Silaban (2012), and Smith *et al.* (2018) revealed other forms of dysfunctional auditor behavior, such as superficial evaluation of audit evidence and failure to investigate questionable items or red flags further. Furthermore, auditors could accept the auditee's weak explanation of possible errors, change audit procedures without the appropriate senior auditor's approval, reduce the workload determined by audit standards, and overreliance on clients' work outcomes.

Gundry and Liyanarachchi (2007) also point out that some users of financial statements may not be able to assess the quality of audit outcome due to the confidential nature of the audit. Consequently, auditors could indirectly hide the state of affairs if they have compromised their work from the intended users of financial statements. In comparison, some cases came to light through litigation. One of the most notorious catastrophes in the audit was the Enron case in 2001 (Juliyanty *et al.*, 2019).

Ernst & Young (EY) Indonesia was fined $1 million by the United States Public Company Accounting Oversight Board in 2017. It was a disciplinary sanction due to an audit failure conducted by EY Indonesia. Despite performing audits according to audit standards, they failed to gather competent and enough audit evidence related to the lease of more than 4 million cellular towers (Malik, 2017; Wiratama *et al.*, 2019). In all its complexity, the auditors imprudently established audit opinion by compromising the adequacy of audit evidence.

Ergonomics intervention on various fields

In 1984, Frederick *et al.* introduced ergonomics as "a discipline which attempts employees to adapt a job to promote workers' health, safety, and comfort and productivity." The scholars elaborate on the word ergonomics, which comes from Greek. The word ergo means work, and nomos implies law. It combines human physiological, anatomical, and psychological capabilities and limitations related to their work burden, environment, and equipment used to complete the job. Additionally, Setyawan (2011) stated that ergonomics was employed to achieve health and productivity.

Some scholars have researched to promote the balance of productivity and workers' well-being through ergonomics. The previous studies also show that ergonomics could intervene in work-related procedures and work-related tools utilized to complete tasks (Susihono & Adiatmika, 2017). For example, in health, Frederick *et al.* (1984) proposed how nurses could improve their working en-

vironment and occupational health and prevent hazards in the workplace. In this case, ergonomics intervention rearranged nurses' working hours and their work shifts. Setyawan (2011) also analyzed some approaches used to implement ergonomics in the workplace in the industrial sector. For example, the ergonomics principles could help health workers increase their productivity through a proper scheduling system based on workers' specialization.

Furthermore, Mustika and Sutajaya (2016) argued that teachers' understanding of ergonomics principles could increase their professionalism in education. In addition, teachers could selectively choose facilities in the class to increase engagement between students and teachers. In a digital-related environment, Desta *et al.* (2016) and Purnama *et al.* (2015) then analyzed that ergonomics could guide practitioners in computers to develop comfortable working space and design works seats to avoid any injuries and health complaints such as headaches and back pains. Mardhia and Bariyah (2020) also reiterated the implementation of cognitive ergonomics in the software and website, promoting Intelligent User Interface (IUI).

Pradini *et al.* (2019) studied the implementation of ergonomics within the manufacturing industry. The scholars researched a manufacturing company that produced fishing boats. The study results revealed that the design of the work system is updated based on ergonomics principles, such as adding break time for the employees, which would increase the company's productivity. Additionally, Aisha (2014) studied the implementation of ergonomics in the service industry. The author claims that ergonomics could intervene to create a better working environment in a bank. The intervention could redesign the practical work and rest time for employees and set employees' personal computers and their desk positions.

Given the preceding, ergonomics is a multidisciplinary knowledge and broad scope to be implemented in various professions and academic careers such as manufacturing, health, and nursing (Susihono & Adiatmika, 2017). Arguably, ergonomics could be applied in an audit environment as well. This element differentiates this study from the previous studies in audit literature. The authors shall suggest how ergonomics could complement RBA in guiding auditors to conduct a more effective audit and gain decent work outcomes.

The Analysis of Research Finding

Survey

The authors conducted a survey to gain perspectives from auditors regarding RBA implementation. Although they have implemented the RBA methodology, the survey demonstrates whether auditors still experience stress and fatigue in performing an audit. Moreover, the survey generates opinions on auditors' exhaustion due to limited time allocation to meet the audit timeline. Respondents to this survey are public sector auditors who have officially conducted RBA audits since 2007 (Sastra *et al.*, 2018).

Furthermore, the survey is conducted through a questionnaire consisting of 33 questions. The questions are divided into three sections. The first section is designed to gain general information on respondents' gender, age, working tenure, job position, and educational level. The second section consists of RBA-related items. Lastly, the third section questions the measurement of fatigue experienced by the auditors. While RBA-related questions were obtained from Tuanakotta (2013), the authors gained questions to measure auditors' stress and tiredness from the IFRC (Latar, n.d.; Saito, 1999). The detailed questions set in the questionnaire are explained in Table 3.

The IFRC has developed subjective measurements to evaluate an employee's level of fatigue (Latar, n.d.). There are 30 indications of exhaustion that are likely to be experienced by employees during a heavy workload. The 30 variables are then divided into three categories of fatigue: decreased ability to perform activities, reduced motivation, and decreased physical capacity. The measurement utilized the Likert scale, as described in Table 4.

Scores 1 to 4 in Table 4 represent different levels of tiredness experienced by employees. Thus, after respondents answered the 30 variables to measure their fatigue level, the authors could calculate the score and group the variables into the three categories (decreased ability to perform activities, reduced motivation, and decreased physical capacity). From the IFRC design, scoring has the highest and the lowest score for every respondent. The lowest score is 30, and the highest score is 120. Latar (n.d.) notes that the score range could be categorized into four classifications of the necessities to conduct corrective actions addressing health issues experienced by workers, as explained in Table 5.

Table 3. Variables in the Questionnaire

Variables	Type of Question
Risk-Based Audit	
When is RBA implemented through an audit process?	close-ended question open-ended question
Who assesses the auditee's risk areas?	close-ended question open-ended question
Do auditors have enough resources to conduct an audit?	close-ended question open-ended question
Measurement of auditors' tiredness	
Decreased ability to perform activities	close-ended question
Reduced motivation	close-ended question
Decreased physical capacity	close-ended question

Source: *Latar (n.d); Saito (1999); Tuanakotta (2013)*

Table 4. Likert Scale

Score	Level of Tiredness
1	Respondents **never** felt symptoms of fatigue
2	Respondents **sometimes** felt symptoms of fatigue
3	Respondents **often** felt symptoms of fatigue
4	Respondents **very often** felt symptoms of fatigue

Source: *Latar (n.d)*

The survey result

The questionnaire was distributed to 323 auditors from May to June 2021. General information about the respondents is elaborated in Appendix 2. The questionnaires are distributed to a near balance proposition based on the respondents' gender. Namely, female auditors contributed 46%, while male auditors filled 54% of the survey. Furthermore, the majority of the respondents are the ones who are between 31 to 40 years old, with a working tenure of 11 to 15 years, and hold a job position as the team leader in their organization. Arguably, most respondents could present a relevant perspective on the implementation of RBA in audits, as most of them are experienced auditors who have assessed auditees' risk areas. Moreover, respondents with undergraduate and postgraduate backgrounds share similar proportions in filling the survey, 53%, and 47%, respectively. Lastly, all respondents have experience conducting financial statement audits, with most of them having performed audits over 15 times.

Table 5. Classification of Employee's Fatigue Level

Score	Individual Total Score	Level of Tiredness	Corrective Action
1	30-52	Low	Corrective action is not necessary to be applied
2	53-75	Moderate	Corrective action might be needed in the future
3	76-98	High	Corrective action is needed soon
4	99-120	Very high	Immediate corrective action is important

Source: *Latar (n.d)*

Figure 2 shows that nearly all respondents agree that they have implemented RBA, including risk assessment, risk response stage,

and reporting phase. The result corresponds to Sastra *et al.* (2018) study stating that the auditors have performed audits based on RBA principles.

Setiawan (2015) believes that the maximum working hour per day is eight hours. The scholar argues that excessive working hours, in the long run, would adversely affect employees' well-being. Unfortunately, the survey results disclose that the respondents struggle to balance the workload and time allocated to conduct audits even after many years of RBA implementation. Figure 3 indicates that half of the respondents believe that they have to work overtime during the planning stage of audits. However, most respondents have to work more than eight hours a day during the field audit and reporting stage, 92% and 97%, respectively.

The authors also provided an open-ended question on why auditors should work overtime during an audit process. Most of them responded that the issue arises since the time allocated to conduct an audit is limited and the number of personnel is insufficient. Consequently, they have a strict deadline to finish the audit reports. The facts point to the challenges that auditors encounter in terms of time budget pressure, and they may be dealing with stress. As mentioned before, Maulidawati *et al.* (2017) and Nadirsyah *et al.* (2011) contend that such a problem could lead them to dysfunctional behavior in reducing audit quality. Additionally, the au-

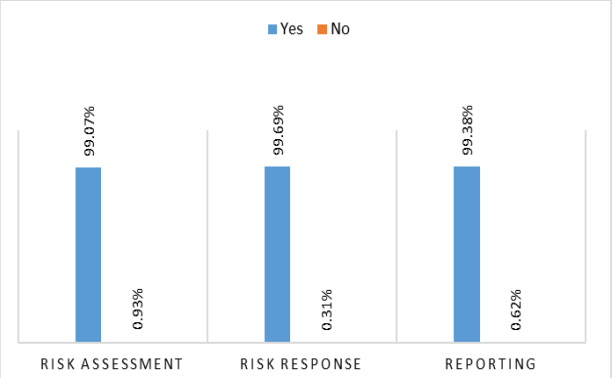


Figure 2. Survey of RBA Implementation

thors examine the level of fatigue experienced by auditors, as explained in Table 5. The IFRC design categorizes respondents' fatigue levels into four groups: low, moderate, high, and very high. Each category represents whether a corrective action to help employees overcome their stress issues is urgently required. The results are shown in Figure 4. Figure 4 shows that 40% of respondents moderately experience fatigue and tiredness when conducting audits. It shows that corrective action may be needed in the future. Nevertheless, a considerable proportion of respondents (30%) indicate that they experience a severe level of exhaustion while performing audits. Therefore, they might need assistance to overcome health issues as soon as possible. Accordingly, only 7% of the respondents point out that immediate aid is essential given that stress may affect their wellbeing.

The above data show that most respondents experience severe tiredness due to heavy workload when performing an audit. Most of

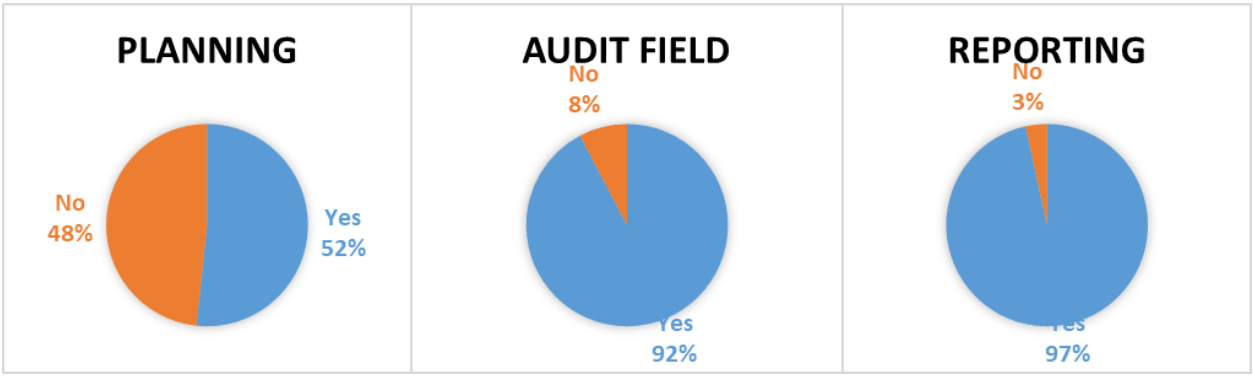


Figure 3. Working Overtime in the Stage of Planning, Audit Field, and Reporting

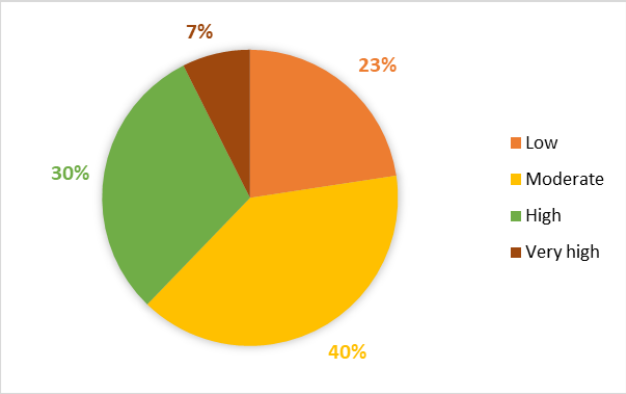


Figure 4. The IFRC Survey Result

the respondents also contend that the audit scope does not balance the time allocation in conducting the tasks, even after the implementation of RBA. As a result, the auditors likely do not have enough time to perform at their utmost and meet the deadline at the same time. This finding confirms a study conducted by Smith *et al.* (2018), who argue that burnout fully mediates relations between job stressors and job outcomes. The situation could lead to the dysfunctional behavior of auditors (Juliyanty et al., 2019; Maulidawati *et al.*, 2017; Nadirsyah *et al.*, 2011; Silaban, 2012). Eventually, Gundry and Liyanarachchi (2007) explain that this type of behavior is known in audit literature as Reduced Audit Quality Practices (RAQP).

Reduced audit quality practices (RAQP)

Wiratama *et al.* (2019) reiterate that job overload has a positive and significant effect on RAQP. The scholars explain that RAQP is dysfunctional behavior since auditors intentionally do not perform standardized audit procedures. As mentioned before, there are some types of dysfunctional auditor behavior or RAQP. However, in this paper, the authors focus on two kinds of RAQP. The two forms of RAQP are inadequate documentation of audit working papers, including irrelevant and incompetent audit evidence, and poor review of audit reports, as shown in the Review Report.

In line with the survey conducted towards public sector auditors, the writers utilized the Review Report established to evaluate the auditors' performance and quality of audit reports. The review report evaluates quality assurance conducted by the auditors, ensuring if the auditors have planned, performed, and reported audits following audit standards. In the reports, two aspects of the quality assurance assessed are documentation of audit working papers and review of audit reports.

Firstly, sufficient documentation in performing every audit procedure is prominent. The working paper could help auditors monitor their progress and guide them to formulate reasonable audit opinions (Agoglia, Hatfield & Brazel, 2009). The scholars also argue that adequate documentation would affect the audit team's judgment and influence reviewers' ability to assess and react to the quality of work. Auditors, additionally, conduct procedures and gather evidence in every phase throughout an audit process. Florea and Florea (2011) state that the evidence includes written and electronic documentation, allowing auditors to conclude the audit process with reasoning. Accordingly, audit evidence would help auditors establish a starting point in expressing reasonable assurance of the audited financial statement. Thus, sufficient and appropriate audit evidence could reduce audit risk to an acceptable low level (Anonymous, 2006).

Secondly, a tiered review in an audit is essential in maintaining the quality of the audit. As mentioned before, Agoglia et al. (2009) reiterate that a proper working paper would lead reviewers to assess the audit quality. In addition, supervisors could examine the result of each audit procedure through audit documentation. It is prominent for senior auditors to review and assess junior auditors' work and outcome, preventing audit failure. The reviewed reports of

quality assurance, established from 2015 to 2017, elaborate that decent working papers do not support several audit reports. For instance, the analytical procedures in the audit of financial statements are not appropriately documented.

Moreover, the reports revealed that auditors had not recorded the result of each audit procedure mandated in the audit program. Even though the tiered review has been implemented, some inconsistencies in audit findings were still found (BPK RI, 2015; BPK RI, 2016; BPK RI, 2017). Therefore, auditors are likely to engage in RAQP, although RBA has been applied during the audit process.

In conclusion, the survey results elaborated that even though RBA guides auditors to assess auditee's risk and determine audit scope, the scheme may not preclude auditors from encountering time budget pressure in performing audits. The RBA does not solely consider human capabilities in performing complex audit procedures. Furthermore, the RBA methodology does not set time allocation given to auditors to perform audits based on the assessed audit risk. Consequently, the auditors encounter a challenge, as they have to perform complex audit procedures in a tight schedule. The pressure could trigger auditors to behave unethically and create a RAQP. The RAQP has been proven to occur through the Review Report established to evaluate the auditors' performance and quality of audit reports. This situation supports the research finding of Gundry and Liyanarachchi (2007). They insist that the unbalance of audit burden and the allocation of audit resources could lead to situations when auditors could not perform as expected.

Ergonomics intervention on RBA

As elaborated before, auditors should be given appropriate resources if the audit scope becomes more extensive and complex (Maulidawati *et al.*, 2017). The balance between time budget allocation and audit scope would affect the employees' health and productivity. Thus, in this study, the purpose of redesigning RBA is to complement the principles of RBA with the fundamental of ergonomics that heavily relies on human capability in conducting practical tasks.

Ergonomics could intervene in RBA methodology in the Risk Response Stage. For example, if the assessed risk of an auditee is categorized as high risk, the audit team should have a more extended audit period than the audit team for a low-risk entity. In another scheme, if the time allocation cannot be modified due to a tight schedule in providing government audit reports in the public sector, the number of auditors assigned in the audit could balance the entity's risk. For instance, the number of auditors in an audit team assigned to a high-risk auditee should be more than those auditing a low-risk entity. The complete proposed design of ergonomics intervention on RBA implementation is in Appendix 2. The summary of Appendix 2 is shown in Figure 5.

There are three stages of RBA: risk assessment, risk response, and reporting. In the risk assessment stage, the auditors determine whether the entity's risk is high, moderate, or low. Subsequently, they could professionally judge an appropriate audit scope and determine procedures to address the potential risks. On the other hand, auditors' workload could be heavier when the risk is higher since the number of audit procedures and samples increases. Nevertheless, arguably, the RBA has not considered the resources allocated to perform the audit procedures and balance the audit scope defined by the auditors. Therefore, ergonomics could intervene in the RBA concept at the stage of risk response, as shown in Figure 5.

Figure 5 also elaborates that if the audit risk is high, the audit team should be given a more extended audit period and consist of more auditors than the audit conducted in a low-risk entity and vice versa. Setiawan (2015) states that the optimal working hours for an emplo-yee are eight hours a day. There should be twice broken time and one-hour lunchtime during the eight hours. The scholar also believes that exaggerated working hours could adversely affect employees' performance and health. In addition, the issue could trigger discomfort and dissatisfaction among workers resulting in reduced performance quality. Therefore, the authors shall suggest an example of how ergonomics could allocate resources in audits based on different assessed risks.

Table 7 then elaborates an example of a working paper based on the accounting cycles. The cycle consists of several accounts. After identifying the accounting cycles, the auditors could assess inherent risk and control risk, thus, determining the risk of material misstatement. The auditors could then respond appropriately to address the possible risks, as elaborated in Table 8.

Condition 1:
Condition 1 is an example of assessed risks in the cash receipt cycle. The auditors may conclude that the inherent risk of cash receipts is moderate since cash is a very liquid type of asset; it could be easily stolen without adequate documentation and other complement controls. Unfortunately, the control risk is high since no relevant control addresses the possible fraud. Therefore, the assessed risk of material misstatement is also high. Responding to the high risk of material misstatement, auditors should increase the number of audit samples in the test of details and rely more on a substantive test, such as recalculating bank

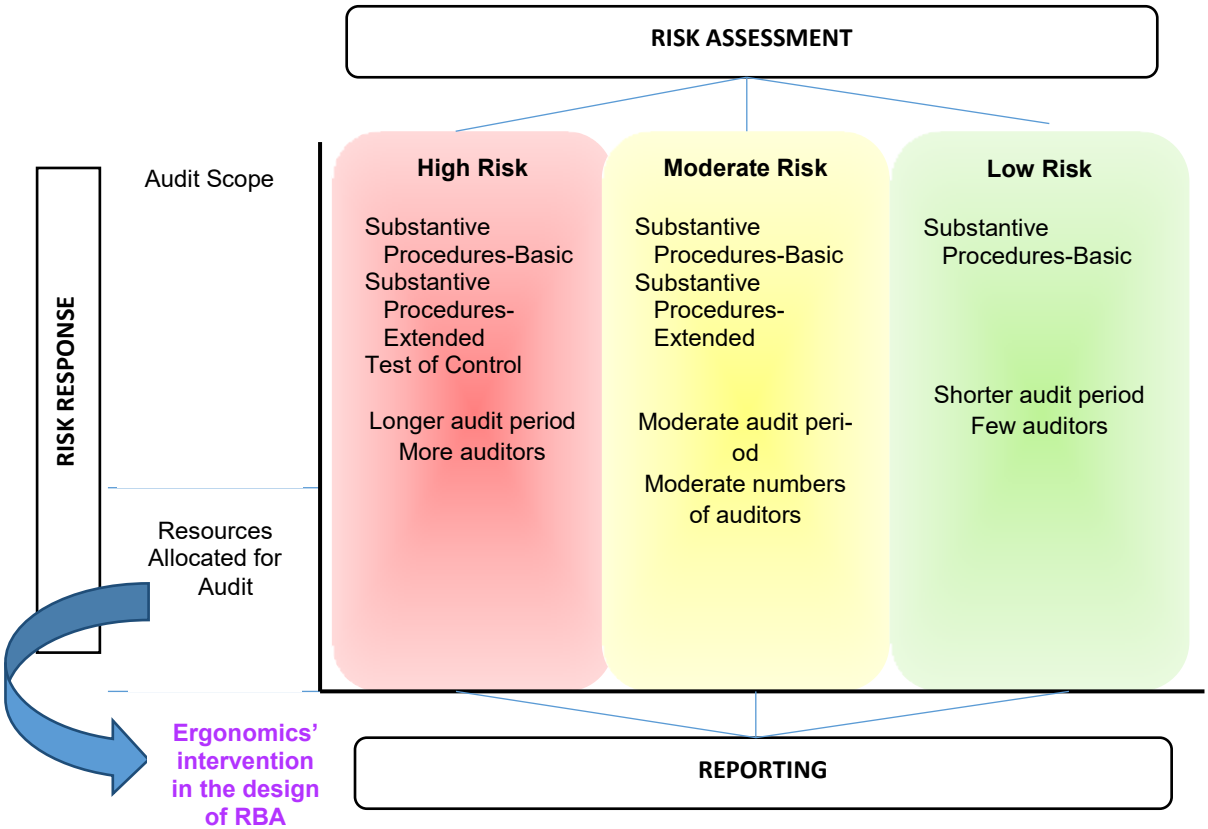


Figure 5. Ergonomics Intervention on RBA Implementation
Source: Maulidawati et al. (2017); Susihono & Adiatmika (2017); Tuanakotta (2013)

statements and cash receipt journals. Consequently, the audit scope for this cycle is broad, requiring extended time budget allocation, tight supervisory control, and supported by highly experienced team members.

Considering the determined audit scope, time allocation for both the manager and supervisor to supervise the audit team should be adequate. In this case, the manager and supervisor may need 16 and 24 hours to observe the team's progress, which equals 2 and 3 days. These conversions are based on Setiawan (2015), who states that the optimal working hours per day is 8 hours. Arguably, the manager and supervisor should frequently supervise the audit process in the planning stage, during the field audit, and during the reporting stage to ensure that the audit is performed based on the standard and evidence gathered are enough and competent to conclude an audit opinion.

The team leader and team members should be given an extended audit period of 80 to 400 hours of the audit period, which equals 10 to 50 days. Ample time budget allocation is essential since the team leader and members are responsible for testing many audit samples with various audit procedures during the financial statement period to suppress the audit risk to an acceptable low level.

Table 7. Accounting Cycles in Financial Statement Audit

No.	Cycle	Related Account	Types of Report
1	Budgeting	Accounts in Statement of Budget Realisation (Revenue and Expenditures)	Budget Report
2	Cash Conversion Cycle:		
	Cash Receipt	Cash, Revenue, Account Payable	Budget Report Financial Report
	Cash Payment	Cash, Expenses, Expenditures, Current Assets, Fixed Assets	Budget Report Financial Report
3	Financing	Cash, Investment, Financing	Budget Report Financial Report
4	Fixed Assets	Cash, Fixed Assets, Depreciation Expense	Budget Report Financial Report

Source: *Tuanakotta (2013)*

Table 8. Example to Allocate Time in Audit

Accounting Cycle	Inherent Risk	Control Risk	Risk of Material Misstatement	Risk Response	Resource Allocation for Audit	Time Budget Allocation* (hours)	Ergonomics intervention* (days)
Cash Conversion Cycle							
Condition 1: Cash Receipt	Moderate	High	High	Substantive Procedures-Extended; Test of Control	Extended time budget allocation; Tight supervisory control; Highly experienced team members.	M = 16 S = 24 TL = 80 TM = 400	M = 2 S = 3 TL = 10 TM = 50
Condition 2: Cash Payment	Moderate	Moderate	Moderate	Substantive Procedures	Moderate time budget allocation; Adequate supervision; Adequate number of team.	M = 8 S = 16 TL = 56 TM = 280	M = 1 S = 2 TL = 7 TM = 35

**M: Manager; S: Supervisor; TL: Team Leader; TM: Team Member.*

Condition 2:
The auditors could determine that the assessed inherent and control risks are moderate for the cash payment cycle. The assessed risks could be because the staff could do the payment procedures for menial items, such as stationary, without any appropriate approval from direct supervisors. The amount of money could be insignificant for a single transaction; however, the total expense for one year could be material. Therefore, the risk of material misstatement is also moderate. In this case, the auditors could set adequate substantive procedures with a qualified number of audit samples.

Compared to Condition 1, where the risk of material misstatement is high, the audit scope in Condition 2 could be narrower. Consequently, the resources allocated to audit the cash payment cycle are less than the time budget allocated for the cash receipt cycle in Condition 1. Therefore, based on the auditors' professional judgment, the manager and supervisor could be given 8 and 16 hours, equal to 1 and 2 days of supervision. While the time allocated for the audit team could be 56 to 280 hours equals 7 to 35 working days. The time allocation could be because the manager and supervisor's frequency of supervision is shorter than the time allocation in Condition 1. Accordingly, the audit procedures conducted by auditors in Condition 2 are not as complex as those performed in Condition 1.

Limitation and Contribution

The limitation of this study is the limited data that has been analyzed. Future research with data from more respondents and different audit organizations could give a broader perspective on how ergonomics could positively complement RBA's principles. This study focuses on how ergonomics could intervene in RBA, theoretically addressing the time budget pressure as a literature review. Future research on a case study project to assess how ergonomics intervention on RBA could benefit the audit team and produce a qualified audit report. The t-test could compare before and after ergonomics intervention on RBA between two audit teams. Future research could also focus on formulating appropriate time budget allocation for auditors based on the assessed risk and complexity of audit procedures they have to conduct to address time budget pressure.

Nevertheless, some contributions of this study are results being used as a guideline for auditors in private and public sectors to develop appropriate time budget allocation for specific audit procedures and details job descriptions based on the entity's risks. Second, this study also complements current literature on the implementation of ergonomics in auditing, factors affecting the audit quality, and auditors' behavior.

CONCLUSION

Most auditors have to present value-added audit results within time budget constraints. With this in mind, an audit is a demanding task for most auditors since they have to deliver value-added audit results. Accordingly, many private and public-sector auditors utilized RBA in the audit planning stage to determine the entity's risks and focus the audit on those risky areas. RBA consists of three steps: risk assessment, risk response, and reporting (Tuanakotta, 2013). In short, the author explains that, firstly, auditors should identify areas where there is a high risk of material misstatement and may require more substantive audit procedures. Secondly, auditors should determine how to reduce the procedures and audit samples applied to the areas identified as low risk. Finally, auditors could evaluate audit evidence to determine the reasonable assurance given to the audited financial statement. Therefore, RBA assists audi-

tors in determining the audit scope by assessing heightened risk and focusing on those areas (Castanheira et al., 2010; Tuanakotta, 2013).

Nevertheless, Sastra et al. (2018) state that RBA focuses on defining appropriate audit scope, yet, it does not necessarily consider auditors' behavior. Maulidawati et al. (2017) and Nadirsyah et al. (2011) argue that time budget pressure is one problem affecting auditors' dysfunctional behavior and compromising the audit quality. Time budget issues become a real problem for most auditors. For instance, even though public sector auditors have conducted audits based on RBA principles since 2007, auditors still encounter limited audit periods. Consequently, they should work overtime to meet a strict audit deadline. The consequences of working late for auditors could adversely affect their productivity and their health.

Given the preceding, it is essential to complement RBA implementation with the principles of ergonomics. Ergonomics is "a discipline that attempts employees to adapt a job to promote workers' health, safety, and comfort and productivity." Additionally, ergonomics is applicable to intervene in the work-related methodology and work-related tools. Because of this, ergonomics has been applied to various employments such as health workers, teachers, computer practitioners, manufacturers, and bankers. Arguably, ergonomics could also guide auditors in performing more effective audits.

The authors propose that ergonomics could be applied in the risk response stage of RBA. After auditors assess the inherent and business risks, they could determine the risk level, whether high, moderate, or low. Following that, auditors should evaluate the appropriate audit procedures and audit scope. Auditors should professionally decide if they might be equipped with sufficient time allocation based on the workload. Auditors' time budget allocation should balance the workload to gain maximum results. In other words, auditors should have an extended time budget if the audit scope is complex to respond to the high assessed entity's risk. Conversely, if the assessed risk is low, the auditors could maintain still audit quality despite little time budget allocation.

REFERENCES

Agoglia, C. P., Hatfield, R. C., & Brazel, J. F. (2009). The effects of audit review format on review team judgments. *Auditing, 28*(1), 95-111. Retrieved from https://www.proquest.com/scholarly-journals/effects-audit-review-format-on-team-judgments/docview/216742002/se-2?accountid=86413

Aisha, A. N. (2014). Office ergonomics assessment pada kantor Bank X. *Jurnal Rekayasa Sistem dan Industri, 1(*1), 68-74. Retrieved from https://jrsi.sie.telkomuniversity.ac.id/JRSI/article/view/127

Anonymous. (2006). Audit evidence. *Journal of Accountancy, 201*(5), 113-116. Retrieved from https://www.proquest.com/trade-journals/audit-evidence/docview/206781286/se-2?accountid=86413

Bechara, M., & Kapoor, G. (2012). Maximizing the value of a risk-based audit plan: Certified public accountant. *The CPA Journal, 82*(3), 28-30. Retrieved from https://www.proquest.com/scholarly-journals/maximizing-value-risk-based-audit-plan/docview/1010401131/se-2?accountid=86413

BPK RI. (2015). Konsep laporan hasil reviu pemerolehan keyakinan mutu pemeriksaan tahun 2015 pada perwakilan Provinsi Banten di Serang (No. 28/LHR/XI-XI.1/12/2015). Jakarta: BPK RI.

BPK RI. (2016). Laporan hasil reviu pemerolehan keyakinan mutu pemeriksaan tahun 2016 pada BPK Perwakilan Provinsi Lampung di Bandar Lampung (No. 15/LHR/XI-XI.1/11/2017). Jakarta: BPK RI.

BPK RI. (2017). Laporan hasil reviu pemerolehan keyakinan mutu pemeriksaan tahun 2017 pada BPK Perwakilan Provinsi Sulawesi Selatan di Makassar (No. 12/LHR/XI=XI.1/11/2016). Jakarta: BPK RI.

Castanheira, N., Lúcia, L. R., & Russell, C. (2010). Factors associated with the adoption of risk-based internal auditing. *Managerial Auditing Journal, 25*(1), 79 -98. DOI: 10.1108/02686901011007315

Dejnaronk, J., Little, H. T., Mujtaba, B. G., & McClelland, R. (2015). *Factors influencing the effectiveness of the internal audit function in Thailand.* Paper presented at the Research for Development, Bangkok, Thailand. Retrieved from https://scholar.google.com/scholar?hl=id&as_sdt=0%2C5&q=internal+audit+function+in+Thailand&btnG=

Desta, O., Kustono, D., & Patmanthara, S. (2016). Kontribusi ergonomi komputer, kelengkapan fasilitas, dan kesesuaian fasilitas praktik terhadap kesehatan ergonomi komputer (studi paket keahlian multimedia UPT Pelatihan Kerja Singosari). *Jurnal Pendidikan, 1*(8), 1626-1632. DOI: 10.17977/jp.v1i8.6689

Florea, R., & Florea, R. (2011). Audit techniques and audit evidence. *Economy Transdisciplinarity Cognition, 14*(1), 350-358. Retrieved from https://www.proquest.com/scholarly-journals/audit-techniques-evidence/docview/1118588979/se-2?accountid=86413

Frederick, L., Habes, D., & Schloemer, J. (1984). An introduction to the principles of occupational ergonomics. *Occupational Health Nursing, 32*(12), 643-645. DOI: 10.1177/216507998403201206

Gundry, L. C., & Liyanarachchi, G. A. (2007). Time budget pressure, auditors' personality type, and the incidence of reduced audit quality practices. *Pacific Accounting Review, 19*(2), 125-152. DOI: 10.1108/01140580710819898

Juliyanty, S. T., Eko, G. S., Rahman, A. F., & Subekti, I. (2019). An analysis of the factors which influence dysfunctional auditor behavior. *Problems and Perspectives in Management, 17*(1), 257-267. DOI: 10.21511/ppm.17(1).2019.22

Latar, M. A. (n.d.) Pengukuran kelelahan [PowerPoint slides]. Retrieved from https://digilib.esaunggul.ac.id/public/UEU-paper-6683-08_Kelelahan_-Subyektif-1.pdf

Malik, A. (2017, February 11). Ernst & Young Indonesia didenda di AS, ini tanggapan Indosat. *Tempo*. Retrieved from https://bisnis.tempo.co/read/845617/ernst-young-indonesia-didenda-di-as-ini-tanggapan-indosat

Mardhia, M. M., & Bariyah, C. (2020). Analisis beban kerja mental terhadap aplikasi dengan antarmuka cerdas. *Jurnal Teknologi Informasi dan Ilmu Komputer, 7*(2), 131-138.

Maulidawati, Islahuddin, & Abdullah, S. (2017). Pengaruh beban kerja dan tekanan anggaran waktu terhadap kualitas audit dengan pengalaman audit sebagai pemoderasi. *Jurnal Administrasi Akuntansi: Program Pascasarjana Unsyiah, 6*(2), 65-74.

Monoarfa, R., & Dama, H. (2018). The influence of time budget pressure and dysfunctional behavior on audit quality at Bawasda in Gorontalo Province. *Jurnal Akuntansi, 22*(3), 420-436. DOI: 10.24912/ja.v22i3.397

Mustika, P. W., & Sutajaya, I. M. (2016). Ergonomi dalam pembelajaran menunjang profesionalisme guru di era global. *Jurnal Pendidikan Indonesia, 5*(1), 82-96. DOI: 10.23887/jpi-undiksha.v5i1.8933

Nadirsyah, Indriani, M., & Usman, I. (2011). Pengaruh anggaran waktu audit, kompleksitas dokumen audit dan pengalaman auditor terhadap pertimbangan audit sampling pada Badan Pemeriksaan Keuangan (BPK) Republik Indonesia perwakilan Provinsi Aceh. *Jurnal Telaah & Riset Akuntansi, 4*(2), 176-186.

Nirmala, R. P. A., & Cahyonowati, N. (2013). Pengaruh independensi, pengalaman, due professional care, akuntabilitas, kompleksitas audit, dan time budget pressure terhadap kualitas audit (Studi empiris pada auditor di KAP di Jawa Tengah dan DIY). *Diponegoro Journal of Accounting, 2*(3), 1-13.

Nyarombe, F., Musau, E. G., Kavai, I., & Kipyegon, K. (2015). The effect of risk-based audit approach on the implementation of internal control system: a case of Uasin Gishu County. *International Journal of Business and Management Invention, 4*(1), 12-32.

Pradini, A. H., Lucitasari, D. R., & Putro, G. M. (2019). Perbaikan sistem kerja dengan pendekatan macroergonomic analysis and design (MEAD) untuk meningkatkan produktivitas pekerja. *Jurnal Optimasi Sistem Industri, 12*(1), 36-47. DOI: 10.31315/opsi.v12i1.2897

Prem, L. J. (2020). Determinants affecting internal audit effectiveness. *Emerging Markets Journal, 10*(2), 10-17. DOI: 10.5195/emaj.2020.208

Purnama, L. I., Dewi, L. T., & Yuniartha, D. R. (2015). Implementasi desain fasilitas kerja ergonomis untuk menurunkan resiko pada postur kerja duduk statis. *Jurnal Rekayasa Sistem Industri,* 4, 33 -37.

Saito, K. (1999). Measurement of fatigue in industries. *Industrial Health,* 37, 134-142. Retrieved from https://www.jstage.jst.go.jp/article/indhealth1963/37/2/37_2_134/_article/-char/ja/

Sastra, C. D., Yuhertiana, I., & Budiwitjaksono, G. S. (2018). The use of risk-based audit techniques in government entities: Indonesia case. *Account and Financial Management Journal, 6*(3), 1581-1586. DOI: 10.31142/afmj/v3i6.04

Setiawan, H. (2015). Desain organisasi kerja berbasis ergonomi di stasiun kerja blanket basah industry karet Palembang. *Jurnal Ilmiah Pengetahuan dan Penerapan Teknik Industri, 13*(2), 193-204. DOI: 10.12928/si.v13i2.2696

Setyawan, F. E. B. (2011). Penerapan ergonomi dalam konsep kesehatan. *Jurnal Ilmu Kesehatan dan Kedokteran Keluarga, 7*(1), 39-49. DOI: 10.22219/sm.v7i1.1085

Shbail, M. O. A., Salleh, Z., & Nor, M. N. M. (2018). The effect of ethical tension and time pressure on job burnout and premature sign-off. *Journal of Business and Retail Management Research, 12*(4). Retrieved from https://www.proquest.com/scholarly-journals/effect-ethical-tension-time-pressure-on-job/docview/2080783111/se-2?accountid=86413

Silaban, A. (2012). Perilaku disfungsional auditor dalam pelaksanaan program audit. *Jurnal Akuntansi, 16*(2). 308-320. DOI: 10.24912/ja.v16i2.536

Smith, K. J., Emerson, D. J., & Boster, C. R. (2018). An examination of reduced audit quality practices within the beyond the role stress model. *Managerial Auditing Journal, 33*(8), 736-759. DOI: 10.1108/MAJ-07-2017-1611

Susihono, W., & Adiatmika, I. P. G. (2017). Implementation of total ergonomics approaches through multidisciplinary sciences for the improvement of workers' health quality: Literature review doctoral dissertation Udayana Bali-Indonesia. *Journal of Global Pharma Technology, 9*(9), 252-256. Retrieved from https://simdos.unud.ac.id/uploads/file_penelitian_1_dir/9c83f42bd3d7ee254faa91ead24babc0.pdf

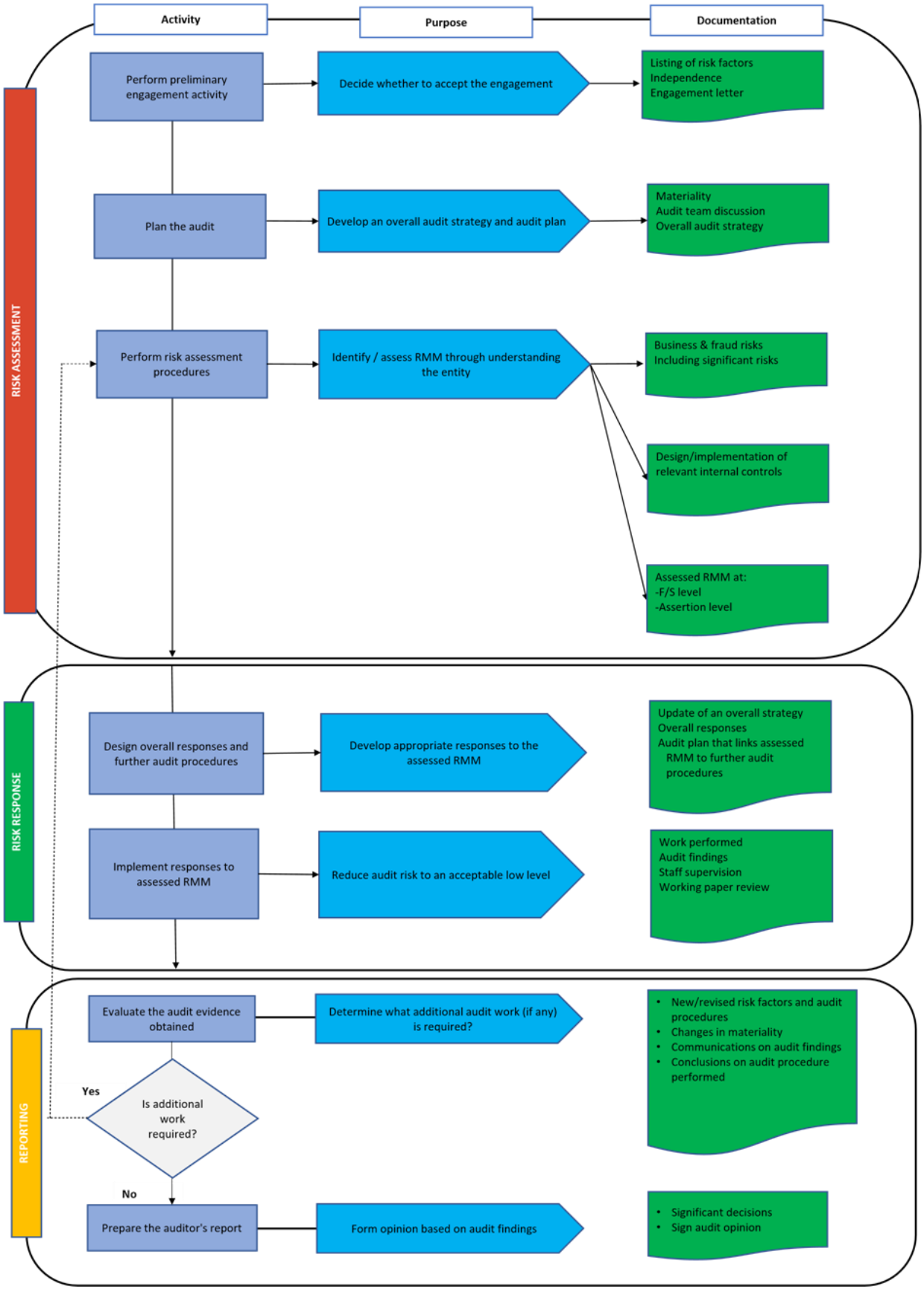
Tuanakotta, T. M. (2013). *Audit berbasis ISA (International Standards on Auditing)*. Jakarta: Salemba Empat.

Wiratama, R., Ng, S., & Lukman, L. (2019). Job burnout dan Reduced Audit Quality Practices (RAQP) dalam perspektif role stress. *Jurnal Sistem Informasi, Manajemen dan Akuntansi, 17*(1), 42-83. DOI: 10.35129/simak.v17i01.71

Zacchea, N. M. (2003). Risk-based audit target selection can increase the probability of conducting value-added audits. The *Journal of Government Financial Management, 52*(1), 22-28.

APPENDICES

Appendix 1. The Workflow of Risk-Based Audit (RBA)

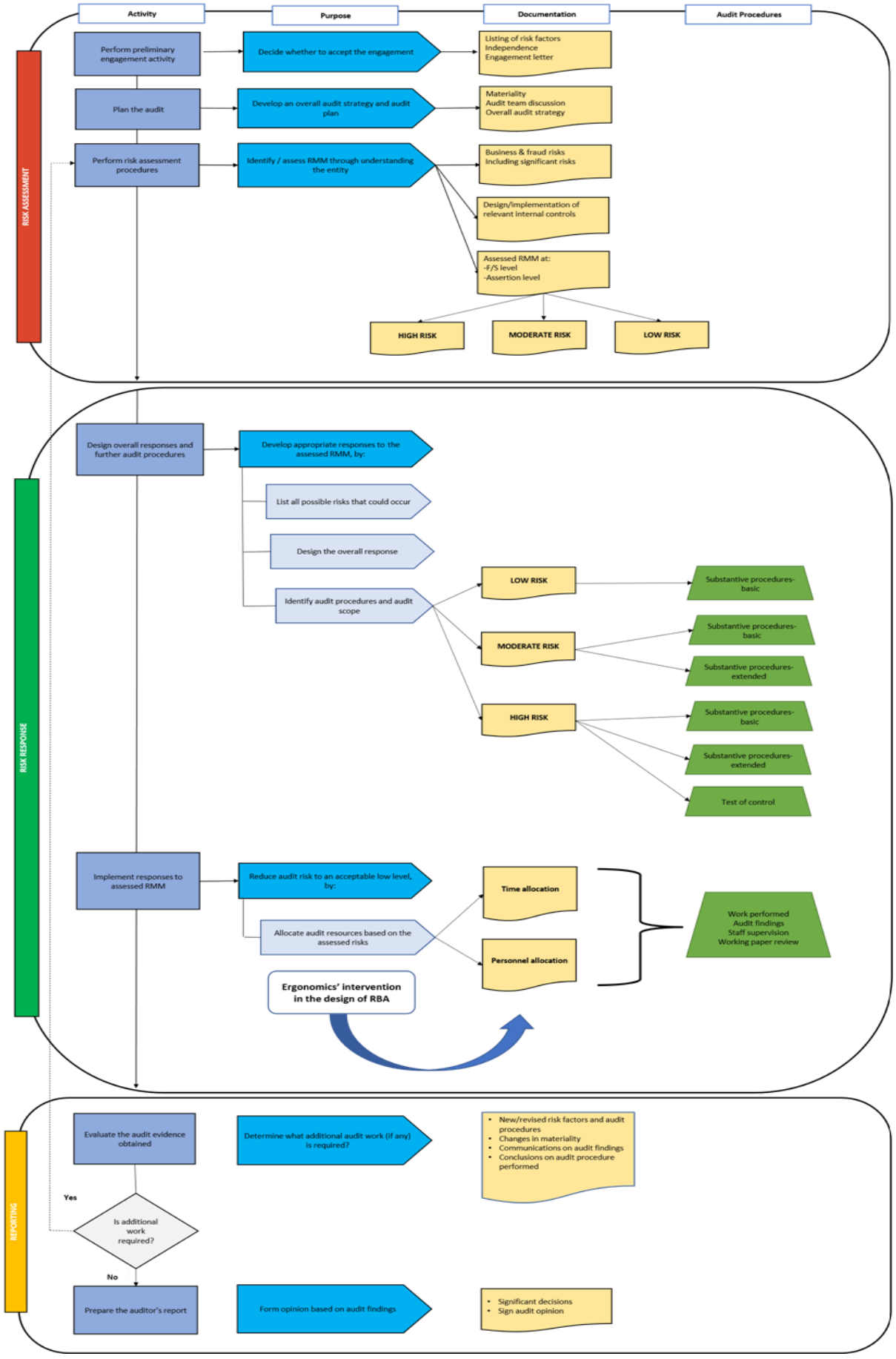


Source: *Tuanakotta (2013)*

Appendix 2. General Information of Respondents

Variables		Total Respondents	Percentage
Gender	Female	148	46%
	Male	175	54%
Age	20-30 years old	27	8%
	31-40 years old	167	52%
	41-50 years old	107	33%
	> 50 years old	22	7%
Job Position	Team Member	83	26%
	Team Leader	163	50%
	Controller	49	15%
	Non-Auditor with Audit Experience	28	9%
Level of Education	Undergraduate	171	53%
	Postgraduate	151	47%
	PhD	1	0,3%
Working Tenure	0-5 years	29	9%
	6-10 years	39	12%
	11-15 years	157	49%
	16-20 years	51	16%
	> 20 years	47	15%
Audit Experience (in financial statement audit)	1-5 times	44	14%
	6-10 times	73	23%
	11-15 times	82	25%
	> 15 times	124	38%

Appendix 3. Ergonomics Intervention on RBA Implementation



Source: *Frederick et al. (1984); Setyawan (2011); Tuanakotta (2013)*