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Agile Auditing for Increasing Efficiency

Sadiksha Acharya

Module Leader and Dissertation Supervisor at The British College, Kathmandu, Nepal
E-mail: sadiksha.acharya@gmail.com

A B S T R A C T

The objective of this paper is to analyse if adopting Agile auditing improves audit efficiency. The study focuses on using Scrum and Kanban methodologies while going Agile. The research gap is identified in three areas, namely, absence of available literature on the given topic; respondents' lack of knowledge on the given topic; and the scope of Agile methodologies. A quantitative-method approach is followed, which includes an online survey questionnaire to collect data. A purposive sampling technique is used and 44 responses are received (33.6%). The data is analysed using SPSS 24.0. The Cronbach's alpha coefficient is used to test the consistency of the survey questionnaire. The descriptive and non-parametric statistical methods (Mann-Whitney U Test) are used to analyse the results. Using Agile methods improve communication, team engagement, transparency and autonomy. There is also a need for Agile auditing (90.9%) for increasing audit efficiency in companies. It is significant for the internal auditors to see the need for adopting Agile methodologies in their organization due to the longer audit cycle and disruptionof the audits due to the changes in accounting and auditing standards. This paper contributes to the unexplored sector of the internal audit literature and includes evidence for the need of Agile auditing for improving audit efficiency. This study is also inclined to assist internal auditors who are seeking efficiency in their current audit models/processes by informing them about few widely used agility models. The findings include implications for audit practitioners in the transformation from traditional auditing to Agile auditing.

1. INTRODUCTION

Technology has changed business, including audit in today's environment and COVID-19 has emphasized this even more. Every business is accepting the modern economy and seeking a new approach to fulfil its customer needs. In the audit sector, it has become difficult to work conventionally, as it lacks the flexibility that businesses need today. The increasing

workload, low confidence, and dissatisfaction in the audit process had made it more difficult for the internal auditors to work effectively. Besides, changes in the legislative requirements, increasing regulatory expectations, and transformation to the online platform had upset many industries; and the relevancy of internal auditing function had become a challenge (Protiviti, 2018). Also, to sustain, organizations must adapt to the changing environment (Newmark *et al.*, 2018). Hence, internal auditors to adapt this shift, to transform digitally, and to progress - a new concept of "agile auditing" (based on the principle of inspection and adaption) (Rabon, 2013 cited in Newmark *et al.*, 2018) has been applied (Duke, 2020). This will assist internal auditors to improve their ability to offer a timely assessment and consulting activities to meet the demand of the present world.

Many businesses are now providing services and assurance more effectively and adding valuable insights to their organization. This sets an example to future internal auditing functions (IASs) that agile auditing is worth applying to enhance efficiency. Furthermore, Agile methodology aids in prioritizing audit work based on the risk and readiness to take over the task (Deloitte, 2020a). However, if the internal audit team does not have an innovative mind-set, applying such a concept may not be productive. Therefore, Protiviti (2008) states thatmany future-oriented CAEs are now directing their audit staffs to imagine beyond the conventional structures and skills, adopt technology and new approaches to operating their functions by imagining how it should function in 10 years or more, and develop a plan to achieve that imagination.

2. HISTORY AND CONCEPT

The concept of 'Agile' is relatively new in the field of auditing. "A*gile is the ability to create and respond to change (Romano, 2019)*". According to Deloitte (2017), the intention of applying Agile method is to minimize the cost and delivery time while improving quality. Launched in 2001 by 17 software thinkers, its principles included the "utmost priority" and "customer satisfaction" (Rowe, 2019). The concept of agile was originated for software development; and intended to be flexible and quickly adapt to the dynamic nature of the market and technology. The idea behind this was to address the challenges faced by the rapidly changing environment (whether it being environment or technology), reduce risks, costs and integrate feedbacks for an iterative approach to the development of software (Kao, 2020). Although Agile used to be a substitute for the traditional linear practice of project advancement (IIA, 2019), it was adopted by many companies irrespective of their business and functions because of the disruptions that needed quicker responses. Agile auditing

works better only for the dynamic business and when the projects adopt the Agile method (PwC, 2018).

According to Newmark *et al.* (2018), the companies must adopt agile methodology if they are going through the following issues:

- The audit meetings with clients are usually over budget.
- The audit meetings are distracted by sudden client-related problems, or the client is delaying the meeting because he/she is not ready.
- Individual audit areas are finalized only at the end of the audit.
- Insufficient improvement and new ideas.

IIA (2019) states that the agile process:

- Makes use of sprints in which fieldwork, re-evaluation, planning, and reporting are all completed in a rotation of up to 2 weeks.
- Reiterate the sprints until the review is completed.
- Shares results with the reviewee at the end of every sprint.
- Are expeditious, repetitive, and give emphasis to transparency and cooperation between stakeholders and self-organized inspection teams.
- Can create a challenge, mainly for the team of auditors who may have objection to change to some extent.

Newmark *et al.* (2018) state that Agility facilitates internal auditors to adapt to external and internal environments and leads to better operating performance, quality, and customer satisfaction.

2.1. Agile Internal Audit

Truong (2020) states that Agile auditing is a summary of adding new values with fewer resources. Agile internal audit is not about what needs to be done; it is about how things can be done differently from the traditional approach. Therefore, Agile internal auditors should seek and assess new information to improve the quality of the audit process incessantly. According to Deloitte (2020a) and KPMG (2019a), Agile Internal Audit (IA) is "*The mindset an Internal Audit function will adapt to focus on stakeholder needs, accelerate audit cycles, drive timely insights, reduce wasted effort, and generate less documentation*".Wright (2019) states that "*Agile IA is an innovative approach that uses Agile software development values, principles, and practices to transform how internal audit engagements are executed.*"

Agile internal auditor's role comes into play when there are multiple audits, encourage closer associations with stakeholders, and deliver more

significant, higher impact reports with less documentation (Deloitte, 2017). Moreover, agile IA is not just about reducing costs. Hardenberg and Rubin (2020) states that Agile auditing works best for IAFs as they are required to integrate risk-based approach, react quick to shifts, provide valuable insights and anticipate risks.In order to implement them successfully, there should be a mutual understanding of goals, work transparency, and efficient resourcing.

According to KPMG (2019a), the main objectives of applying agile principles in IAFs are:

- increasing audit quality,
- short audit cycles,
- providing insights and values, and
- more interaction with auditee

3. CHARACTERISTICS

3.1. Traditional Internal Auditing Versus Agile Internal Auditing

The following tables demonstrate the differences between traditional internal auditing and Agile internal auditing:

Table 1 and 2
Traditional Internal Auditing Versus Agile Internal Auditing

Traditional Internal Auditing	Agile Internal Auditing
• Large, functional teams	• Small, cross-functional teams
• Uses Waterfall method	• Uses Scrum Framework
• Rigid and single-phased planning	• Flexible and iterative planning on a continuous basis
• Fieldwork and review	• Sprints and retrospectives
• End of project reporting	• Iterative process of reporting
• Longer audit cycle - up to 8 weeks or more	• Shorter audit cycle - up to 2 weeks or more
• Long distance between customer and developer	• Short distance between customer and developer
• Low ability to respond quickly to change	• High ability to respond quickly to change

[*Source:* BDO, 2019; Kao, 2020; KPMG, 2019a; PwC, 2018; Rigby *et al.,* 2016]

3.2. Favorable and Unfavorable Conditions to Agile

Rigby *et al.* (2016) lists favorable and unfavorable conditions to Agile. These are presented in *Table 3*.

Table 3
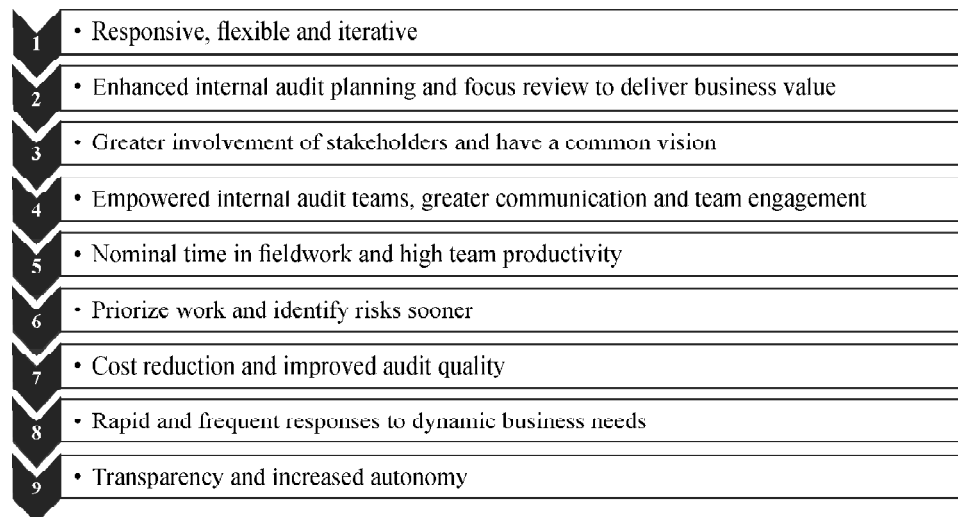**Favorable and Unfavorable Conditions to Agile**

	Favorable to Agile	*Unfavorable to Agile*
Market Condition	Frequent changes in client preferences and solution	Stable and predictable market
Client Participation	Close cooperation and speedy feedback from clients is possible	Constant collaboration with the client is not possible; Clients requirements are clear at the beginning and is not subjected to change
Innovation	Complex problems and unknown solutions; unclear scope; changing product requirements; importance given to creativity and time to market; interactive, and cross-functional teamwork is imperative	Similar kind of activities have been already completed before; Clearly defined scope and solutions; Detailed product requirements; Problems are solved sequentially in functional silos
Modularity of Work	Late changes are possible and manageable; Clients can test the parts of the products during the development phase; Works are modularized and conducted in rapid, iterative cycles	Late changes are costly or impractical; Clients cannot test the product until it is completed
Impact of Mistakes	Mistakes are perceived as a learning opportunity	Mistakes can be disastrous
Business Culture	Team-centered, cooperative, creative and delegation culture; Low employee turnover	Relies on top-bottom direction and functional specialization; Low mutual trust and high employee turnover

Adopted from Rigby *et al.* (2016)

3.3. Advantages of Agile Internal Auditing

The following figure lists the advantages of agile internal auditing:

Figure 1: Advantages of Agile Internal Auditing

1. • Responsive, flexible and iterative
2. • Enhanced internal audit planning and focus review to deliver business value
3. • Greater involvement of stakeholders and have a common vision
4. • Empowered internal audit teams, greater communication and team engagement
5. • Nominal time in fieldwork and high team productivity
6. • Priorize work and identify risks sooner
7. • Cost reduction and improved audit quality
8. • Rapid and frequent responses to dynamic business needs
9. • Transparency and increased autonomy

[*Source:* BDO, 2019; Duke, 2020; Kao, 2020; Rowe, 2019; Spence, 2019]

4. AGILITY MODELS

There are various methodologies/models used in Agile. The choice of methodologies depends on the unique needs of the business and its objectives. The two most common models adapted by organizations are (i) The Scrum Model and (ii) The Kanban Model.

4.1. The Scrum Model

Many organizations, despite their nature of work, follow the 'Scrum Model' to become agile. This model is focused on efficiency and quality (Watson, 2020) and is suitable for small teams. The Scrum model can be adopted both for new and existing auditing projects. The Scrum refers to the short meetings (up to 15 minutes) where the self-organizing cross-functional teams meet to discuss their progress. This meeting will discuss how far an audit team has completed their tasks, what is the next task to do on the list, what might be the uncertainties or challenges (if any) that they might face, and the already completed tasks (Schenker, 2015). Furthermore, the team will also discuss the obstacles to the current sprints. Kao (2020) asserts that "there are four categories used to track the progress of audit tasks, and these are: product backlog (list of requirements in order), to do, in progress, and done tasks". In general, the top to bottom approach will help the team completing their tasks efficiently (Spence, 2019). For instance, the highest priority task should be at the top and the lowest at the bottom. The scrum method is used to provide service to the customers via "sprints" – regular feedback and repetition (in every 2 weeks on average). These sprints are then shared with the clients to add instant value. Hence, Scrum allows internal auditors to make timely changes in their activities based on the outcome, new information, and the clients' changing needs.

Figure 2: The Scrum Model
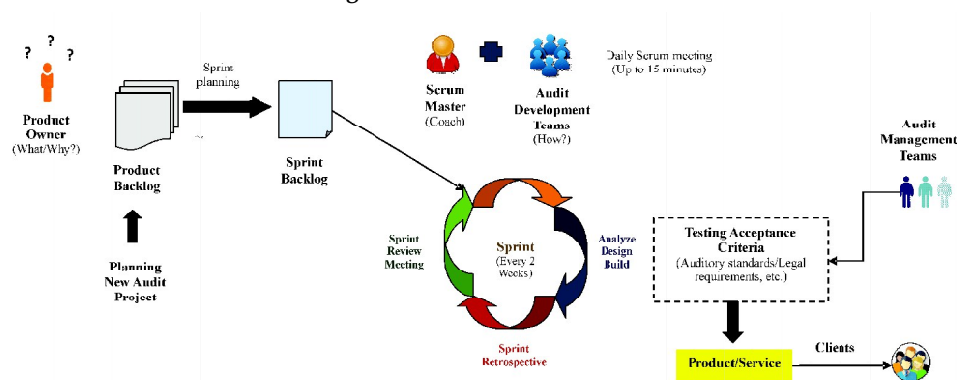
(Adopted from the image of Microsoft Word 2007)

According to Abrahamsson *et al.* (2002), for existing projects, Scrum is used if the project requires development in the environment and complex technology where the audit team finds difficulty with problems related to such progress. In that case, Scrum begins with a Scrum Master and a daily Scrum meeting. During this first sprint, any obstacles hindering the project is recognized and removed to ensure the team's progress. Then, the Scrum master, audit teams, and the clients meet and decide the next activity. If the project needs to be continued, sprint planning is done to determine the objectives and standards for the subsequent sprint.

If the Scrum method is being adopted for a new project, Schwaber and Beedle (2002) cited in Abrahamsson *et al.* (2002) advocate working with the audit teams and clients for many days to construct an initial product backlog, which may contain business functionality and technology needs. The first sprint is then created to design and build the audit project's structure where the new features will be added. The sprint backlog must incorporate the activities needed for reaching the goal of the sprint. When the audit team is working with the sprint backlog, the Scrum master, also known as a coach, collaborates with clients to build a broad product backlog to plan for the next sprint after the initial sprint review is performed.

4.1.1. Roles and Responsibilities in Scrum

There are five distinct characters in Scrum. They perform various tasks during the audit process and practice: Product Owner, Scrum Master, Audit Development Team, Audit Management Team, and Clients. The following descriptions are based on Abrahamsson *et al.* (2002) research:

- **Product Owner:** The product owner is the 'what' and 'why' person (Spence, 2019) selected by the clients, Audit Management Teams, and Scrum Master. He/she involves in managing and controlling activities and making the product backlog list visible. The final decision of the tasks related to product backlog is made by the product owner (for example, accepting or rejecting the items on product backlog) as they have the expertise in the subject matter. Furthermore, this person computes the progress for backlog items, and if any complications arise in the Backlog, the Product Owner will change this into the features to be improved. This person is responsible for profit, loss, return on investment (ROI), and writes acceptance criteria.
- **Scrum Master:** The Scrum master is not a permanent employee of a company (Knowledge Hut, 2018). They act as a coach and do not involve in direct control or command. The responsibilities of the

Scrum master include: making sure that the project is advancing as planned and the project follows all the practices, values, and rules of Scrum. During the project, the Scrum master keeps close communication with the Audit Development Teams, Audit Management Teams, and Clients. Besides, this person makes sure that any obstacles that arise during the project are removed or changed so that the team can complete their task efficiently.

- **Audit Development Team:** The Audit Development Teams are also known as 'Project Teams' and are ultimately responsible for 'how' the work is divided, followed, and completed (Spence, 2019). These people have the right to decide on crucial activities to achieve the target of each sprint. The responsibilities include: calculating effort, reviewing product backlog, creating sprint backlog, and suggesting any obstacles to remove from the project. The team may consist of people such as - designers, architects, programmers, and writers (West, 2020).

- **Audit Management Team:** They make the final decision and ensure that the project follows the auditory standards and legislative requirements. Other responsibilities of the audit management team include: selecting the product owner, testing the acceptance criteria of the project, and collaborating with the Scrum master to reduce the backlogs.

- **Clients:** They contribute to the tasks related to the product backlog items for the overall system productivity.

4.1.2. The Scrum Principles

Scrum principles are the guiding principles and should be used in all Scrum projects appropriately (SCRUMstudy, 2017). There are six Scrum principles listed in *Table 4*:

Table 4
The Six Scrum Principles

Decisions must be based on experimentation and observation which relies on transparency, inspection and adaptation.

The Team delivers greater value when they are self motivated and self organized.

The Team must collaborate to deliver something greater.

The Team must prioritize their work to add value in the business.

The Team must allocate a definite time for each activity and process in a Scrum project.

The Team must follow the iterative model for the overall development of the project.

Source: SCRUMstudy, 2017

4.2. The Kanban Model

"Kanban" is a Japanese term for billboard or signboard (Kanbanize, 2020). The Kanban Model is similar to the Scrum Model in terms of improving delivery as both the models allow the team to break the complex project into smaller chunks visualizing the workflow and keeping the entire Audit Team in the circle. However, these models differ in terms of implementation. The Kanban model is focused on communication, collaboration, and accountability (Watson, 2020) and is simple to use where there are no unpredicted events. Therefore, the Audit Teams need to analyze both the models before the execution. This model is used to improve the overall productivity of the team without altering the existing team structure.

The Kanban approach improves the overall workflow. It uses the Audit Development Team's full competence without pressurizing them. This is possible by the Work In Progress (WIP) where the new tasks are not accepted until the completion of old ones. This also prevents works from piling up, which ultimately helps the Team not delaying or abandoning their tasks. The WIP ensures that the Team keeps on working without overburdening themselves. The model follows a pull system – based on the prioritization of tasks - where the Team takes up another work as soon as they complete their ongoing tasks instead of anyone having to brief them on their next task. The Team creates a Kanban board (perhaps a whiteboard) with four different columns and cards (or sticky notes). These columns consist of – (i) Product Backlog, (ii) To do/ Requested Tasks, (iii) In Progress/Ongoing Tasks, and (iv) Done or Completed Tasks. However, some online tools are available in the market for Kanban and project management like Trello, Asana, and Jira (Siderova, 2020). This can assist remote workers too when they do not have access to the physical whiteboard. The online kanban solutions automate some of the tasks making them more efficient. To maintain the efficient workflow, Kanban-specific charts are used: Cumulative Flow Diagram, Cycle Time Scatterplot, Cycle Time Histogram, Throughput Histogram, Throughput Run Chart, and Aging Chart.

According to Siderova (2020), the Kanban Model would be beneficial for the project which meets few or all of the criteria listed below:

- To make the performance more efficient and smoother as compared to the existing workflow.
- The Team has encountered backlogs of stagnant work.
- The organization is willing to enhance the current processes gradually rather than applying a completely new system.
- The Team's priority may change in a short period.
- The Team's emphasis is responding to their client's needs.

Figure 3: The Basic Kanban Model

Product Backlog	To do	In Progress	Done
6 5 7	4	3	1 2
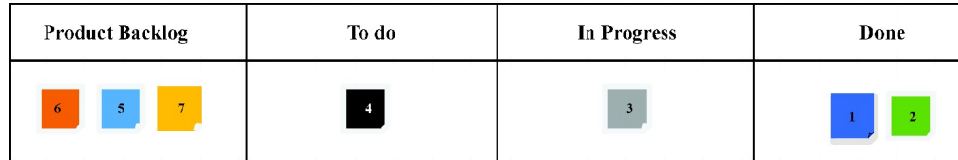
4.2.1. Roles and Responsibilities in Kanban

When the organization practice Kanban Model in their organization, according to AgileWaters Consulting (2020), the two different roles in the workflow process comes into play: (i) Service Request Manager (SRM) and (ii) Service Delivery Manager (SDM).

- **Service Request Manager (SRM):** In general, an SRM bridges the gap between the organization and the clients. They are involved in determining and maintaining the process guidelines and ensuring that an environment is created that brings value to the organization and clients. They strive to promote uniformity and clarity in the decision process that allows audit teams to become more effective.

- **Service Delivery Manager (SDM):** Service Delivery Manager is responsible for supervising the quality of the service delivered. They assist their audit teams to do their work correctly and as per the request of the clients. For example, an SDM keeps on checking the Kanban board regularly to make sure no task had been pending and there are no blocked tasks. They also make sure that the team is speeding their work, reducing the cost and shortening the response to the market demand.

4.2.2. The Kanban Principles

It is very essential to the organizations to understand and adopt the Kanban principles before applying them. The four Kanban principles are listed in *Table 5*:

Table 5
The Four Kanban Principles

Kanban can be used instantly to the existing business process.

Kanban promotes constant, gradual and developmental changes.

Kanban acknowledges the existing procedures, roles and responsibilities.

Kanban encourages the leadership and decision-making at all levels.

Source: Siderova, 2020

4.2.3. The Kanban in Practice

For the effective execution of the Kanban model, it is essential to observe the following (Siderova, 2020):

- Understand the existing workflow by visualizing it using a Kanban board.
- Limit Work in Progress (WIP) for the effective execution of the Kanban model.
- By recognizing impediments, increase the efficiency and smoothen the workflow.
- The processes and policies must be made clear to the Team.
- Held regular meetings for continuous feedback to the Team.
- Enhance collaboration through continuous assessment, review, and progress.

5.   THE FUTURE-ORIENTED AGILE AUDITING FRAMEWORK

The future generation of IAF must adapt agile auditing to progress. To make it successful, they should incorporate a wide array of innovation culture, resources, and governance facilitators that must be modified to the specific businesses and their needs. The following figure illustrates the future-oriented agile auditing framework.

Figure 4: The Future-oriented Agile Auditing Framework
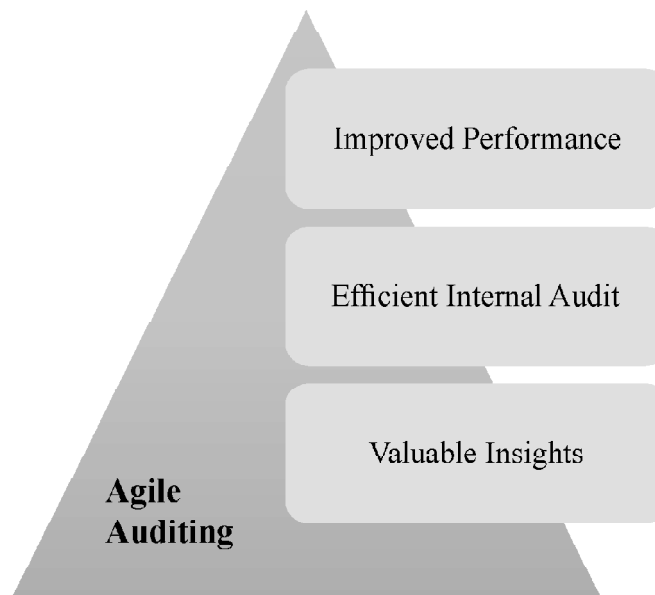
To apply the agile methodology in the present organizations, the internal auditors need to have the right commitment and mindset, adopt an iterative approach and be flexible enough to embrace ever-changing innovation (Protiviti, 2018).

5.1. Agile Auditing and Improved Performance

Agile auditing helps a project to complete faster. Newmark *et al.* (2018) state that including agile project management techniques like Scrum, can enhance performance in more long-established firms and activities, such as manufacturing (Rehm, 2016), banking (Mahadevan, 2017), strategic planning (McFarland, 2008), and education (Loewus, 2017). Agile auditing improves auditors' performance by reducing cost and time to delivery and improving quality (Deloitte, 2020a).

Some Research Findings: According to Bolden-Barrett (2017), General Electric (GE)'s self-managed teams are raising workplace productivity by the concept of "teaming" work where the groups of employees take ownership of work without having any supervisors as their overseers. Likewise, Beerbaum (2020) study found that the daily interactions with the Agile teams help improve the internal auditors' independence and strength. Also, the research by Melo *et al.* (2013) revealed that the Agile team management was one of the influential factors to boost the Agile team's performance.

5.2. Agile Audit and Efficiency

In Agile auditing, the tasks are divided into smaller chunks of tasks to be completed in an agreed time frame. This helps the audit department to focus only on the specific and current task at a time and not banking it for the future. Regular short meetings are held where audit teams are made clear about their work and expectations, and problems are solved (if any). Moreover, the agility models help the Team to work independently and generally increasing their efficiency. For instance, Kanban uses the process of visualization and controlled Work in Progress to foster the employee's efficiency.

Some Research Findings: Beerbaum (2020) study revealed that companies that keep their design and specification documents minimum (rather than comprehensive) and transferring the major documentations part at the operations/support levels are advantaged.

5.3. Agile Audit and Valuable Insights

Agile auditing allows clients to inspect the product, analyze the risks and opportunities associated, and give valuable insights earlier and in more

frequent basis. This helps the audit teams to learn quickly what customers want and implement those changes.

Some Research Findings: Agile methodology embraces the culture of immediate feedback and daily retrospective due to which, Beerbaum's (2020) findings show that, the companies are able to gain valuable insights and identify issues earlier.

6. METHODOLOGY

6.1. Data Collection

The research used a quantitative study and the data were collected through a self-designed online survey questionnaire. A purposive sampling (also known as judgemental or expert sampling) technique was chosen. The questionnaire intended at responding the research question whether Agile auditing improves audit efficiency and if there was a need of Agile auditing to improve efficiency in the organization. Only 44 samples (33.6%) were valid and completed by audit practitioners mostly associated with banking and financial sectors followed by audit firms. The questionnaire contained three parts. Part A required demographic information of the respondents; Part B contained (i) a marginal number of multiple-choice questions, (ii) a list of six auditing issues that the companies are currently facing, showing a need for adopting Agile auditing, and (iii) a list of nine agility questions that the companies are following to increase efficiency in the workplace. The responses (ii) and (iii) were measured using the Likert scale indicating "Not at all (1) .... To a very large extent (5). Finally, Part C required respondents to opine on the need for adopting Agile auditing in the workplace and a narrow range of optional open-ended questions.

6.2. Reliability Tests

Cronbach's alpha coefficient was used to test the reliability of the questionnaire (Agile auditing improves efficiency). The results in **Table 6** indicate that Cronbach's alpha coefficient was above 0.75. Many research papers stated that Cronabch's alpha > 0.70 is acceptable (Saidi and Siew (2019); Daud *et al.* (2018); Ursachi *et al.* (2015); George and Mallery (2003)).

Table 6
Cronbach's Alpha Reliability Test Results

Cronbach's Alpha	Cronbach's Alpha Based on Standarized Items	N of Items
.784	.795	9

However, Cronbach (1951) cited in Mkoba & Marnewick (2020) and Nawi *et al.* (2020) state that, $\alpha > 0.70$ means it is internally consistent and there is good reliability.

7. SURVEY RESULTS

The survey results are demonstrated in descriptive analysis and Mann-Whitney U test analysis.

7.1. Descriptive Analysis

The examination of the demographic characteristics of respondents in **Table 7** demonstrates that males participated in this online survey more than three times higher (77.3%) than females (22.7%) and were mostly experienced. Of the total respondents, 40.9% were internal auditors. Moreover, the majority of them worked in the medium-sized firm and belonged to the banking and financial services industry. Lastly, almost four-fifths of their industry is operating in Asia followed by North America (15.9%).

Table 7
Demographic Characteristics of Survey Respondents

Demographic Characteristics	Frequency	Percentage (%)
Gender:		
Male	34	77.3
Female	10	22.7
Other	0	0
Position:		
Audit Director	7	15.9
Audit Partner	4	9.1
V.P/G.M Internal Audit	1	2.3
Chief Internal Auditor	3	6.8
Internal Audit Manager	5	11.4
Internal Auditor	18	40.9
Other	6	13.6
Experience:		
Less than 5 years	19	43.2
5 to 10 years	20	45.4
More than 10 years	5	11.4
Industry Type:		
Manufacturing	6	13.6
Banking and Financial	19	43.2
Trading	5	11.4
Education	3	6.8
Information Technology	0	0
Other	11	25

Demographic Characteristics	Frequency	Percentage (%)
Size of Firm Respondents Employed:		
Small	7	15.9
Medium	20	45.5
Large	17	38.6
Industry Operation:		
Asia	35	79.5
North America	7	15.9
Australia	1	2.3
Europe	1	2.3
Other	0	0

Table 8
Respondents' Awareness about the Concept of Agile Auditing

I have heard about the concept of Agile auditing	Frequency	Percentage (%)
Yes	27	61.4
No	11	25.0
Not sure	6	13.6
Total	44	100

The respondents were asked if they have heard the concept of Agile auditing. The responses are presented in **Table 8**. 61.4% of them stated 'yes' which means that the concept of Agile auditing is becoming known in the organizations. This is in line with the survey findings of Scrum Alliance (2015) concerning the popularity of the concept of Agile auditing. The Scrum Alliance's took a survey of 4,452 Scrum users in 2015 where 108 countries were represented that used Scrum in more than 14 industries. The survey revealed that the Scrum was the most popular method of Agile. Likewise, an international survey conducted by KPMG in 2019 revealed that 81% of the respondents had started their Agile transformation since 2017 and the remaining started even before (KPMG, 2020).

Table 9
Respondents' Surety about the Application of the Concept of Agile Auditing

My company is already applying the concept of Agile auditing	Frequency	Percentage (%)
Yes	16	36.4
No	28	63.6
Total	44	100

The respondents were also questioned if the company they are working is already applying the concept of Agile auditing. The responses are presented in the **Table 9**. Responses show that only 36.4% respondents replied 'yes'

while 63.6% of them replied 'no'. **Table 13** shows responses where the companies are already following most of the items (55.56%) to add efficiency in their audit work. This implies that the companies are already working efficiently in most of the areas and hence they do not see the need to apply the concept of Agile auditing in their practice. This finding is in line with the perception of Lindner (2020), where he advocates the fact that companies do not need to go fully Agile. He adds, "A change after 4 years to 50% – 60% agility is an absolute success and is sufficient for the current time".

Table 10
Respondents' Company Planning to Apply the Concept of
Agile Auditing in the Future

My company is planning to apply the concept of Agile auditing in the near future	Frequency	Percentage (%)
Yes	18	40.9
No	6	13.6
Not sure	20	45.5
Total	44	100

The respondents were asked if the companies in which they are working are planning to apply the concept of Agile auditing in the near future. The responses are presented in the **Table 10**. It is obvious that only 40.9% responded 'yes' and rest of them either answered 'no' (13.6%) or 'not sure' (45.5%). The reasons that companies are not adopting agile auditing could be the team does not understand the value of Agile (Tkach, 2018) and they are reluctant to change their traditional method of completing their projects. Similarly, Rigby *et al.* (2016) list three major impediments for companies to adopt Agile. These are (i) Lack of ability or not willing to apply the methodology, (ii) Lack of support from the management, and (iii) Agile principles are at odds with the company's operating model. These findings are in line with the survey findings of Version One (2015) where 44% of the respondents answered the failure to adopt Agile because of the inability and lack of experience; 36% answered due to the lack of support from the management side; and 42% answered the failure was related to the company culture. The mean value for most of the items (66.67%) (from **Table 13**) indicates that there is a little trend for the companies (in Nepal) to adopt the concept of Agile auditing.

The respondents were questioned "In your opinion, do you think there is a need for companies to adopt the concept of "Agile" to improve audit efficiency?" The responses are presented in the **Table 11**. It is noteworthy that 90.9% responded 'yes', which is an encouraging sign, and rest of them

Table 11
Respondents' Perception on the Need for Companies to Adopt the Concept of Agile to Improve Audit Efficiency

In your opinion, do you think there is a need for companies to adopt the concept of "Agile" to improve audit efficiency?	*Frequency*	*Percentage (%)*
Yes	40	90.9
No	4	9.1
Total	44	100

answered 'no' (9.1%). This is line with the survey findings of KPMG (2019b) concerning the main drivers of the Agility. The survey revealed the top driver of Agility (68%) is for "faster product delivery adjusted to changing customers need" followed by "Increased flexibility (45%)" and "Fast and continuous improvement of customer satisfaction (42%)". Likewise, according to the Scrum Alliance (2015) cited in Rigby et al. (2016), out of 4,452 respondents, the success rate of IT – respondents going Agile was 63%, and non-IT respondents were 59% where 87% of the respondents said the Scrum improved the quality of work-life; therefore, both the sectors said that they will continue to use Scrum for going agile.

The following **Table 12** lists the respondents' reason for going Agile:

Table 12
Respondents' Reasons for Going Agile

S.N.	*If your answer is 'Yes' to the above question, please list the main reasons for going Agile:*
1	Increased flexibility, efficiency, transparency and result-oriented
2	Uniformity, integrity and fraud detection
3	Higher productivity and reliable process
4	Higher-quality insights and higher degree of client satisfaction
5	Priority-based auditing and better risk management
6	Provides greater value to the company as new audit areas could be added for any significant changes
7	Helps the auditor to stay focus in the audit and improve the quality of the work as frequent meetings are happening with feedback provided by other members
8	Helps to distribute tasks equally among the team members
9	Better performance by staffs and scientific approach to performance measurement
10	Less time planning the audit; as a result, more projects are completed
11	Shorter audit cycle and more focus on stakeholders' needs
12	Audit team members are not working in silos and understands the role of the team as a whole

7.2. Mann-Whitney U Test Analysis

Due to the low population sample of 44, the Mann-Whitney U test was performed (Nachar, 2008) to compare more than two independent samples (Salkind, 2010). The responses of internal auditors on the need for adopting Agile auditing and increasing efficiency are provided in the first half of **Table 13**:

Table 13
Respondents' Perception on Need for Agile Auditing and Increasing Efficiency

Need for Agile Auditing	Frequency 1	2	3	4	5	N	Mean	SD	MW U Test by Position G1 (Internal Auditors)=18; G2 (Others)=26 — Z	G1	G2	MW U Test by Size G1 (L)=17; G2 (M-S)=27 — Z	G1	G2	MW U Test by Industry Type G1 (MFG)=6; G2 (Others)=38 — Z	G1	G2
The audit meetings with clients are constantly over budget	10	12	16	5	1	44	2.43	1.04	-.05	22.61	22.42	-.89	20.41	23.81	-.30	23.92	22.28
The meetings are distracted by sudden client-related problems	10	14	13	7	0	44	2.39	1.02	-.88	24.47	21.13	-.76	24.29	21.37	-.78	26.17	21.92
Individual audit areas are only finalized at the end of the audit	11	12	13	6	2	44	2.45	1.15	-.47	21.44	23.23	-.01	22.53	22.48	-.65	19.42	22.99
We follow rigid and single-phased planning	9	10	14	9	2	44	2.66	1.16	-.91	24.56	21.08	-1.24	19.56	24.35	-.32	24.00	22.26
Our audit cycle takes up to 8 weeks or more	9	9	12	10	4	44	2.80	1.27	-1.84?	26.67	19.62	-.95	24.76	21.07	-2.30*	11.58	24.22
Changes in accounting and auditing standards disrupt our firm's audits	12	11	12	8	1	44	2.43	1.15	-1.05	24.86	20.87	-2.17*	27.62	19.28	-.49	20.17	22.87

Agile Auditing for Increasing Efficiency	Frequency 1	2	3	4	5	N	Mean	SD	MW U Test by Position G1 (Internal Auditors)=18; G2 (Others)=26 — Z	G1	G2	MW U Test by Size G1 (L)=17; G2 (M-S)=27 — Z	G1	G2	MW U Test by Industry Type G1 (MFG)=6; G2 (Others)=38 — Z	G1	G2
There is a greater involvement of stakeholders and we all have a common vision	3	9	13	17	2	44	3.14	1.03	-.15	22.83	22.27	-.47	23.59	21.81	-.14	21.83	22.61
Our Company has empowered internal audit teams	0	6	9	20	9	44	3.73	0.95	-.62	23.86	21.56	-1.11	25.06	20.89	-.38	24.25	22.22
There is a nominal time in fieldwork resulting to high team productivity	4	11	15	12	2	44	2.93	1.04	-1.64	26.17	19.96	-.44	23.53	21.85	-.13	23.08	22.41
We prioritise our work and identify risk areas earlier	0	4	7	22	11	44	3.91	0.88	-.54	21.33	23.31	-1.16	25.12	20.85	-.06	22.25	22.54
We are able to respond to the rapid and frequent business needs (especially after COVID-19	1	8	10	20	5	44	3.45	1.00	-1.15	25.03	20.75	-.40	21.59	23.07	-.11	23.00	22.42

Statement																	
Our Company has transparency and has increased autonomy	0	3	7	27	7	44	3.86	0.77	.00	22.50	22.50	-.04	2241	22.56	-2.35*	32.50	20.92
There are greater communication and team engagement	1	4	9	20	10	44	3.77	0.99	-1.76?	18.64	25.17	-.37	2165	23.04	-2.62*	34.50	20.61
We follow a Scrum or Kanban Model to complete our audit project	12	7	17	4	4	44	2.57	1.25	-.16	22.14	22.75	-.69	2412	21.48	-.84	18.5β	23.12
We have a daily 15-30 minutes Scrum meeting to discuss the progress in the completion of tasks	5	8	12	17	2	44	3.07	1.11	-1.83?	18.42	25.33	-.32	2176	22.96	-.86	18.50	23.13

SD = Standard Deviation; MW = Mann Whitney; G1= group one, G2 = group two; Internal Auditors, Others = Other than Internal Auditors; L = large, M-S= medium and small; MFG= manufacturing, Others = non-manufacturing. *Significant at 0.05 level; ? A trend close to significance.

An examination of the above table (first part) shows that the mean value for only two items (33.33%) are higher than the grand mean (2.53) indicating that there is a little trend for the companies (mostly in Nepal) to adopt the concept of Agile auditing. However, it is advised that to minimize the time of the completion of audit cycle (a trend close to significance) and to have flexible and iterative planning the companies need to adopt Agile methodologies. This finding is in line with the survey findings of Beerbaum (2020) who reported that the companies which used Agile methodology had high flexibility when there was increasing pressure on the delivery.

On the other hand, the second part of the table reveals the mean value for five items (55.56%) are higher than the grand mean (3.38) indicating that many companies in Asia are practicing efficient way of doing their business. However, it is recommended to practice agility for a greater involvement of stakeholders (Deloitte, 2020b) and have a common vision; for having nominal time in fieldwork relating to high team productivity; follow a Scrum or Kanban model to complete audit projects; and have a daily 15-30 minutes Scrum meeting to discuss the progress in the completion of tasks.

Since the sampling structure was purposive sampling, a non-parametric test (Mann-Whitney independent sample test) was performed to observe the significant differences in the perception of the respondents by position, size of their organization and type of the industry. Results show that, based on the position of the people surveyed in their organization, the mean value is greater for most of the opinions (approximately 85%) provided by internal auditors on "the need for Agile auditing". Moreover, a trend close to significant difference was found in their perception for 'our audit cycle takes up to 8 weeks or more'. Hence, professionals working as internal auditors may see need to adopt Agile auditing as the mean value is higher for most of the internal auditors. This study is in line with the survey findings of Deloitte (2020b) that stated more than half of the respondents who have adopted the Agile methodology have realized multiple benefits such as timely audits, streamlined documentation, engaged clients, empowered internal audit teams, and insightful results.

The second part of the table "Agile Auditing for Increasing Efficiency" reveals that, based on the position of the respondents, the mean value is greater for equal number of opinions provided by internal auditors and others. However, certain perceptions approached but did not reach significance. These were 'there are greater communication and team engagement' and 'we have a daily 15-30 minutes Scrum meeting to discuss the progress in the completion of tasks'. Hence, according to the internal

auditors, their companies are not yet following Agile techniques to improve the overall productivity of their organization.

Next, when results are analysed by size of the organizations (using Mann Whitney U Test) in which the internal auditors have been working, it is apparent that there is only one significant difference to 'Changes in accounting and auditing standards disrupt our firm's audits'. A further analysis of the responses express that internal auditors working in large organizations generally see a need of adopting Agility as the mean value is higher for large organizations (27.62 > 19.28). This may be true because of the recent breakout of Corona Virus Disease 2019 internal auditors now have to come up with alternative plan as soon as possible if any of the members in the project is ill. Besides, the COVID-19 might affect many accounts on financial statements; the companies may have to add detailed disclosures about the pandemic effect in their financial statements; they might have to face more challenges in the estimates from clients; they need to think about alternative internal controls if the staffs are ill or in case of office closure; carefully examine the outstanding loan as the clients' may have fall short of cash post COVID; and have to prepare for increasing going concern disclosures (Radigan, 2020). Likewise, from the second part of the table, it is clear that, the size of the organization did not affect for practicing Agility in the companies. There is no significant trend that internal auditors are practicing any kind of Agile methodologies.

Finally, looking at the analysis by type of the industry where the internal auditors have been working, it is evident that the internal auditors working in other firms (mostly banking and financial followed by audit firms) consider the need for implementing Agile auditing in their business as the mean value for 'Others' (24.44) is greater than 'MFG' (11.58) which is also the highest among the group. The significant difference found is for 'Our audit cycle takes up to 8 weeks or more'. Then, the second part of the table demonstrates that more than half of the internal auditors working in manufacturing industry state that they are efficiently practicing audit process. The significant differences found are for 'Our Company has transparency and has increased autonomy' and 'There are greater communication and team engagement' with higher mean value for MFG 32.50 and 34.50 respectively which makes the second highest and highest mean respectively in the group as compared to other mean values.

8.   NEED FOR AGILE AUDITING

Since Internal Audit Function (IAF) is losing the perception of "value add" in the dynamic world, agile aids by providing another approach to the

conventional approach by changing the entire mindset (BDO, 2019). According to Deloitte (2017), present stakeholders are demanding for the deeper insights and stronger point of view in the annual reports. They are looking for competence in assurance, superior counselling on controls and processes, and enhanced prediction of risks. Therefore, Romano (2019) argues that internal auditors need to be more agile and the Chief Audit Executives (CAEs) must come up with innovative strategies as well as flexible approach for the right talent. He adds, while addressing the change and disruption, the CAEs need to position internal auditors as an internal catalysts, who not only be responsive to change but also involve proactively in focusing the emerging risks.

9. CHALLENGES IN AGILE AUDITING

While adopting Agile, it is important to perform analysis of the possible challenges. Lack of information or resources could prove to be the major barrier to implementing Agile. Berger (2020) states the most common challenges that organizations come across using agile methodology listed below:

- **Complaints in audit tools** such as incomplete paper work, not following the proper process, and low visibility in the work progress might become a challenge in agile auditing (Spence, 2019).

- **Approving everything** will be unproductive and goes against the core principles of agile methodology. Also, too many meetings and unachievable deadlines will contribute increasing the workload of internal auditors. Since every organization is different, the businesses should adopt a practice that matches with their organization culture and mindset.

- **Top to bottom approach** does not work if the senior executives need to order change. If such situation arises, then the bottom-top approach will be use allowing room for improvement and teamwork.

- **Cannot discard the core principles of internal auditing** even after the adoption of agile methodology. For instance, internal auditors must still meet the auditory standards and legislative requirements associated to providing assurance, implementation and reporting. They should be more focused into enhancing the value with agile auditing approach.

- **Internal auditor's skills** need to match with the teams who are performing the task together using agile methodology to enhance efficiency.

- **Increased level of verbal reporting** which might sometimes fail to report important details or raise important issues in the business (PwC, 2018) because one would not be comfortable on relying to the verbal information.

- **Low employee morale** may be caused due to the lack of communication and unengaged staffs; insufficient compensation for the amount of job performed; increased control by the management and lack of trust (Spence, 2019).

- Applying agile auditing across the organization **takes time and commitment**.

- Some team members could be **reluctant to accept the change** as they need to work faster than in the traditional auditing projects.

10. CONCLUSIONS AND IMPLICATION

Many businesses will indeed go agile in the days to come and they will operate in a different way than today. It is a crucial time for the CAEs to remodel their IAF and act proactively to analyse any emerging risks. For agile transformation to be successful, the top-management must be supportive and should empower their audit teams. Furthermore, due to its complex nature, the IAF should not step back to apply Agile IA if it is the right fit for their organization. The companies that are looking for improved efficiency, quality, communication, collaboration, and accountability, may practice Scrum and Kanban together for better results.

This research identified that adopting Agile methods increases audit efficiency. Furthermore, there are many companies who see the need for adopting Agile auditing. The survey findings noted that experienced internal auditors working in large organizations generally see a need of adopting Agile methodologies. Also, internal auditors working in other firms (mostly banking and financial followed by audit firms) consider the need for implementing Agile auditing in their business.The survey suggests the companies in Nepal are also seeing a need to adopt an efficient way to do their business. However, some of the companies are still reluctant to adopt the concept of Agile.

To adopt Agile methodologies in the companies, the following practices must be followed:

- Check if the company's condition is favourable to adopt Agile.
- Plan for the right Agile framework.
- Hire a professional who is the Agile transformation champion.

- Proper and consistent training to audit staffs is required on the concept and methodology of Agile.
- The right person must be allocated with the right role.
- The change in the methodologies should be encouraged by the Board.
- The focus should be on 'why' rather than on 'what'.

Hence, the bottom-line is that Agile methodologies are used to enhance the value of the business; however, if not applied appropriately and/or consistently it may impact negatively. So, care should be taken with thorough assessment of business needs and how changes can be incorporated.

10.1. Contributions of the Study

The study provides a thorough concept of Agile auditing and two widely used methods in practice: Scrum and Kanban. Also, there are limited studies on the topic and this research is an exploratory one. This study contributes to the learning on agile auditing for students as well as professionals where they can incorporate this concept for increasing efficiency at their workplace.

10.2. Limitations of the Study

There are a number of limitations of this study. First, this study has small sample size (44) and drawn mostly from Nepal (79.5%). One of the reasons of low sample size is respondents' lack of knowledge on the topic. Further research is needed to collect data globally in a larger sample size. Second, the topic is unexplored and had negligible studies done. Further studies are needed to determine if Agile auditing improves efficiency globally with the range of industries. Third, there are various ways to go Agile but this study focused only on Scrum and Kanban Agile methods. So, further study on wide range of audit processes for different Agile methods such as Lean, Extreme Programming (XP), Feature-Driven Development, Crystal and others is needed. Finally, a quantitative method was carried out for the data collection using survey questionnaire. The future research can have qualitative methods to compare the findings.

Since responses from small samples may undermine the internal and external validity of a study, the generalization of findings from this study should be interpreted with caution. Additional studies in the future need to be undertaken on the further contribution of Agile internal auditing to audit efficiency.

10.3. Future Research

The limitations of this study emphasize the areas for further research. As agile auditing is broadly used, further research is needed to confirm its efficiency in more countries and different industries worldwide.

Acknowledgements

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