UNIVERSIDAD COMPLUTENSE DE MADRID
FACULTAD DE CIENCIAS ECONÓMICAS Y EMPRESARIALES

TESIS DOCTORAL

Multi factors that affect the correct use of accounting information in a complex decision-making

Múltiples factores que afectan el uso correcto de la información contable en una toma de decisiones compleja

MEMORIA PARA OPTAR AL GRADO DE DOCTOR

PRESENTADA POR

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Directores

David Pascual Ezama
María del Mar Camacho Miñano

Madrid

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Ph.D. Dissertation

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Abstract

The aim of this doctoral thesis is to explore the audit issues that affect the quality of the auditor's opinion and their decision making. We answer many research questions regarding the correlation of audit issues and its effect on the quality. The general outcome indicates that there was a close relationship between the financial crisis and auditing, due to the influence of dysfunctional behavior on audit quality which was among those relations whose impact on the crisis.This issue has been interesting in recent years because there have been a growing number of bankruptcies due to the financial crisis whether direct or indirect issues that affect the quality of the auditor's opinion where business management has failed to warn of its impact on the business.

The general framework incorporates two main theoretical sections: First, we start by reviewing and analyzing the experimental studies of auditing ´Thirty-five years of experimental studies on auditing: an overview of issues, prominent topics, and future research directions' from 1982 to 2017, the result identify 17 issues during this period which have an effect on the audit quality. Moreover, this section analyses and studies the evolution of the most prominent issues in each decade which have impact on the quality of the auditor's opinion.Secondsection of the theoretical framework isentitled 'The evolution of the most prominent topics in audit through the last four decades´ This section aims to shed light on the most prominent auditing topics of the current decade with an analytical study of their development and movement over four decades. Particular reference is made to the top five topics (financial incentives, group issues, partnership, fraud and regulations) based on the appeal to researchers during that era from the perspective of empirical studies.

The objectives of this section are to present researchers with an understanding of the evolutionof audit issues over four decade and the study depicts a vision for new avenues of research in audit issues as a specialty.This general framework concludes with the evolution of these five topics by providing proposed new pathways for future research into audit issues that may hinder the quality of the auditor's decision-making.

The second part of our dissertation addresses the specific theoretical framework and hypothesis development in two chapters that represent the empirical part. The aim of the empirical part is the development of the main issues we discovered in the prior literature review.Chapter 1 is entitled 'Do multiple tasksenhance dishonesty in tournament incentive environments?' This chapter resulted fromthe deep empirical in the previous part; among the outlines of issues that resulted were financial motivation and dishonesty in the audit process. This study explores how the possibility of incentive-based tournament schemes increases or decreases misbehaviour (dishonesty) among employees when it is being applied under multitasks and non-multitask conditions. Two distinct experiments were conducted with two different designs (online and laboratory), results show that there is credible evidence that multitasking in an incentive tournament schemes environment can highly curtail dishonesty in worker performance.Chapter 2 is entitled 'New organisational challenges: "Dishonesty" in face-to-face and virtual teams'.This research portrays one of the modern topics that deal with the communication methods between team members and the extent of the probability of dishonesty when there is minimal supervision.The results conclude that dishonestbehaviour is more likely when teams work in a virtual environment than in face-to-face teams in non-supervised environments.Our research findings are consistent with a greater trend amongst professional authorities to reduce misconduct (such as dishonesty) and thereby to protect all stakeholders in the business world. This study proves that a consideration of economic behaviours and human psychology could be jointly applied in different areas of society, and that behavioural research could help to rescue economies.

Resumen

El objetivo de esta tesis doctoral es estudiar los problemas que afectan la calidad de la opinión del auditor y su toma de decisiones. Respondemos a muchas interrogantes de investigación sobre la correlación existente entre los problemas de auditoría y sus efectos en la calidad. El resultado general indica que hay una estrecha relación entre la crisis financiera y la auditoría, debido a la influencia del comportamiento disfuncional en la calidad de auditoría que tuvo un impacto en la crisis. Este tema ha sido interesante en los últimos años debido al número creciente de bancarrotas por la crisis financiera, ya sean problemas que afectan directa o indirectamente la calidad de la opinión del auditor o donde la dirección de la empresa no ha advertido su impacto.

El marco general incorpora dos secciones teóricas principales. Primero, comenzamos revisando y analizando los estudios experimentales sobre auditoría. Treinta y cinco años de estudios experimentales sobre auditoría con una visión general sobre los problemas, temas destacados y las futuras orientaciones de la investigación desde 1982 hasta 2017, Se obtuvieron 17 problemas principales que fueron identificados durante este período y tienen un efecto significativo en la calidad de la auditoría. Además, esta sección estudia y analiza la evolución de los temas más destacados en cada década, que repercuten en la calidad de la opinión del auditor. La segunda sección del marco teórico se titula "La evolución de los temas más destacados de la auditoría a lo largo de las últimas cuatro décadas". El objetivo de esta sección es aclarar los cinco temas de auditoría más destacados de la década actual con un estudio analítico de su desarrollo durante cuatro décadas. Hace referencia a los cinco temas principales (incentivos financieros, aspectos grupales, asociación, fraude y reglamentos) basados en los trabajos de los investigadores durante ese tiempo desde la perspectiva de los estudios empíricos.

El objetivo de esta sección es mostrar a los investigadores un conocimiento de la evolución de los temas de auditoría durante cuatro décadas y describir una visión para nuevas vías de investigación en temas economía experimental en auditoría. Este marco general concluye con

la evolución de estos cinco temas ofreciendo nuevas vías para la futura investigación de auditoría que pudieran obstaculizar la calidad de la toma de decisiones del auditor.

La segunda parte de nuestra disertación aborda el marco teórico específico y el desarrollo de la hipótesis en dos capítulos que representan la parte empírica. El objetivo de la parte empírica es desarrollar los principales problemas descubiertos en la revisión previa de la bibliografía desde un punto de vista aplicado. El capítulo 1 se titula "¿Las multitareas fomentan la deshonestidad en entornos competitivos incentivados?". Este estudio analiza cómo en entornos competitivos puede aumentar o disminuir el comportamiento deshonesto entre los empleados cuando se aplican en condiciones de tareas múltiples y no múltiples. Se realizaron dos experimentos diferentes con dos diseños diferentes (online y de laboratorio). Los resultados mostraron que existen pruebas verídicas de que las multitareas pueden reducir en gran medida la deshonestidad en los trabajadores. El capítulo 2 se titula "Nuevos retos organizacionales: deshonestidad en equipos presenciales y virtuales". Esta investigación retrata uno de los temas actuales que abordan los métodos de comunicación entre los miembros del equipo y el grado de probabilidad de deshonestidad cuando existe un nivel mínimo de supervisión. Los resultados demuestran que el comportamiento deshonesto es más probable cuando los miembros del equipo trabajan en un entorno virtual que en equipos presenciales no supervisados.

Introduction

The impacts over the past ten years of the financial crisis that originatedwith major financial scandals in big companies together with the continuous unpredictability of the economic situation have made it necessary to recover the lost trust of users of financial information. Under these conditions, the need for accredited and authentic financial information is a problem that largely affects auditors. They are responsible for checking and verifying financial information and ensuring a true and fair view of financial statements according to the business' situation. However, during the crisis, auditors were considered 'guilty'of signing'clean reports' even for highly financially distressed firms (Sikka, 2009; de Jager, 2014; Wiggins, Bennett, & Metrick, 2019). As a result, audit standards have recently been changed and improved so thata firm's risks are shown to its stakeholders in a new expanded audit report.

Auditing plays a vital role in expanding and magnifying the international economy and business enterprises. This is essential for the users of financial statements to acquire a guarantee that the figures are being reported, accurately measured and fairly conveyed. There is a broad span of studies and authors who have made an effort to analyse and establish the most influential factors that affect auditing quality.

The convolution of today's economic arrangements, the detachment in geographic locations, the lack of time and the proficiency of stakeholders, managers and prospective investors have made auditors and the auditing process a prerequisite for the progression of the present-day economic system. Some of the more vital auditing policies include a probe of management and others parties to obtainan understanding of the organisation itself, its operations, financial reporting and known fraud. Auditor behaviour draws significantattention from society because of audit non-performance (Baldacchino, Tabone, Agius, & Bezzina, 2016). Audit failure may result from the dysfunctional behaviour of auditors. This behaviour occurs in the

course of auditors performing their duties, making it hard for them to recognise vital misstatements in client financial statements (Nor, 2011; Baldacchino et al., 2016). Dysfunctional audit behaviour can diminish audit quality directly and indirectly (Andreas, 2016). For example, there was a close association between the financial crisis and auditing, and the leverage of dysfunctional behaviour on audit quality was one of those relations whose effect on the crisis was proven. The auditing side thus contributed immensely to the financial crisis (Bischof, Daske, & Sextroh, 2014; de Jager, 2014). There are many components that influence dysfunctional audit behaviour. Therefore, there is still scope for further exploration of the importance of auditing challenges from an empirical point of view, as well asto explore the influence of these challenges on quality and decision-making among auditors. This is the general topic of this thesis.

We have focused this malfunctioning of the auditors' activity within the theoretical framework of possible dishonest behaviour and how to mitigate it. The honest behaviour of auditors should be guaranteed by the internal controls of the audit firms themselves and by legislation. However, in many circumstances, the cost of losing a large client creates pressure on auditors that could affect their reputations as professionals, their career advancement and even their and future compensation. This situation implies that some auditors may make individual decisions that could border on the unethical and sometimes even the illegal.

With all this in mind, this PhD dissertation has three objectives. First, to examine from a behavioural economics point of view how various factors affect the economic decisions made by organisations and individuals, as well as how decisions are different from those suggested by classical theory, by pinpointing the main elements that can influence auditing quality. The aim of this thesis is an overview of the factors that affect auditors' current work environments from the point of view of behavioural economics. Specifically, it focuses on the effects of cognitive, psychological, emotional, social and cultural factors on the work decisions of

auditors. Second, having identified the main factors affecting behaviour, the next objective is to identify possible dishonest behaviours that could be related to these factors that are relevant to the auditors' overall behaviour. Finally, the last objective is to propose alternatives to try to decrease the possibility of dishonest behaviours by comparing different options, such as working on a single task or several tasks at the same time, working individually or in a group and analysing different ways of working in teams in a face-to-face or virtual way.

The dissertation incorporates two main theoretical sections prior to the empirical part: a general framework that represents a literature review and the evolution of the most prominent topics during the last four decades; and a specific theoretical framework and hypothesis development in two chapters that represent our specific contributions. The objective, methodology and main results of each part are outlined as follows.

First, we show a literature review of auditing and behavioural experiments. Only the experimental methodology is used in our thesis. Our objectives are to pinpoint trends in the publication of experimental auditing research. This literature review, in general, focuses on audit problems affecting quality during the four succeeding decades beginning with the 1980s and ending with thecurrent decade. Some significant audit issues were analysed in each decade based on the vitality and quantity of the research studies. In the current decade, the five most eminent subject matters were sought and then explored in-depth and in extensive examination over the previous decades to the present. The objective is to shed light on the experimental audit issues performed from 1982–2017, to record the trends of the present-day audit problems to produce and provide opportunities for further research. Our research will appeal to some groups, such as standard-setters, regulators and researchers, because one of the motives behind this dissertation is to inform audit firms, standard-setters and regulators of the auditing challenges we identify in our review. The regulators and standard-setters always want suitable available evidence, such as empirical research, as a method of developing of

standards, examining practical results and provingthe effect of the standard after they have been finalised (Cohen & Knechel, 2013). The Public Company Accounting Oversight Board (PCAOB) has of late expressed its fascination with the use of auditing research. Since the better part of audit research utilises archival means, this is another reason to fill the scarcity of experimental studies.

The general framework in our thesis addresses ‘Thirty-five years of experimental studies on auditing: an overview of issues, prominent topics, and future research directions’. The purpose of this part is to appraise the experimental literature on audit topics over the past 35 years using a systematic literature review technique in order to find the gaps for new research directions. Our major contributions are aimed at pinpointing the audit issues for which the experimental methodology was applied during each of the last four decades. A diagram illustrating audit issues was formed that shows the number of studies conducted during each decade. We undertook a deep analytical study of the most pertinent audit themes and the extent of their evolution over the past four decades. This appears to be beneficial for researchers as per the trend of several interesting topics for future research as well as for administratorsinevaluating the companies' rights and duties related to auditing.

The second part of the theoretical framework isentitled ‘The evolution of the most prominent topics in an audit through the last four decades’. In this part, we shed light on the most prominent auditing topics of the current decade with an analytical study of their development and movement over four decades. Particular reference is made to thetop five topics (financial incentives, group issues, partnership, fraud and regulations) based on the appeal to researchers during that era from the perspective of empirical studies. The objectives of this section are, first, to present researchers with an understanding of the evolutionof audit issues over four decades. Second, the study depicts a vision for new avenues of research in audit issues as a specialty. These issues have changed over the years to meet the changing needs

and anticipation of society. The analysis of these issues is divided into the following four chronological periods: the 1980s, 1990s, 2000s and 2010s.

The aim of the empirical part is the development of the main issues we discovered in the prior literature review. One issue is financial tournament incentives and their relationship to behaviour. Significantly, financial incentives were among the most prominent topics of interest to researchers in all four decades. In the current decade, there is much interest in the relationship between financial incentives and behaviour in the auditors' environment. The trends of recent studies have focused on the financial incentive schemes and their impact on auditor's behaviour and the quality of work, which indicates the importance of this topic and the urgent need for more research in order to reach solutions.

Another factor that we discuss concerns groups. The reason for choosing this problem from among other issues is that it has received remarkable attention during the past decade and the current decade; unlike in the decades of the eighties and nineties, it has become a prominent issue. This indicates that there are gaps that need to be filled in the affairs of groups in the audit environment. Recently, group issues have addressed many problems related to financial incentives, group formation in the work environment and behaviour, such as dishonesty and lying. This encouraged us to choose this factor in the same context as the previous one (financial incentives) because both are linked to influence on the behaviour of auditors in the work environment. We decided to contribute to these lines of research according to recent research trends based on a specific framework for each of these issues and its relationship to behaviour.

The current work of auditors is characterised by two factors that we have extracted from the theoretical analysis and the real audit environment: the huge amount of work that takes place under financial incentive schemes; and a remote audit team working on the same project.

Persellin, Schmidt, Vandervelde and Wilkins (2019) surveyed over 700 auditors about audit workloads and the relationship between audit workloads, perceived audit quality and work satisfaction and found that ‘auditors are working, on average, five hours per week above the threshold at which they believe audit quality begins to deteriorate and often 20 hours above this threshold at the peak of busy season’ (p. 1). It has also been noted that there is widespread interest nowadays from both regulators and researchers as to how workload pressure relates to auditor behaviours, and it has been reported that there is a negative relationship with quality, such as the probability of modified audit opinions (Chen, Dong, Han, & Zhou, 2020). This is especially true when a financial incentive is applied in the auditor's environment (Balafoutas, Czermak, Eulerich, & Fornwagner, 2017). In light of these current problems affecting audit quality, we have decided to study the characteristics of the auditors' work.

Multitasking is one characteristic of auditors’ work; it is inescapable and common in preparing an audit. Auditors are often asked to work on multiple engagements and implement multiple tasks to keep up with the requirements of their profession (Brown, Sidgman, & Brazel, 2019). The way in which this multitasking aspect of auditors’ daily work affects audit quality is one of the main empirical objectives of this thesis. Chapter 1 is entitled 'Do multiple tasksenhance dishonesty in tournament incentive environments?' This chapter resulted fromthe deep empirical in the previous part; among the outlines of issues that resulted were financial motivation and dishonesty in the audit process. In this chapter, we contribute to this dissertation by addressing, according to our knowledge, a new topic related to current audit issues. This study explores how the possibility of incentive-based tournament schemes increases or decreases misbehaviour (dishonesty) among employees when it is being applied under multitasks and non-multitask environments. We compare a multitasking work environment with a non-multitasking work environment and its ability to decrease non-behavioural processes. Two distinct experiments were conducted with two different designs

(online and laboratory), in which all of the activities were subjected to tournament incentive schemes. Subjects were assigned to one of two treatments, eithermultitasks or only one task in which the subject was given absolute freedom to make decisions without supervision.

Our methodology in this chapter used specific treatments among participants, such as word search puzzles and listening to audio in two different environments (online and laboratory). These treatments represented different review activities that are actually part of an auditor's work, such as discovering errors and conducting conference calls with remote people during the process of an audit.

Our results show that there is credible evidence that multitasking in an incentive tournament schemes environment can highly curtail dishonesty in worker performance. These outcomes provide to organisations important contributions to the audit profession and work environment in terms of tournament inducement and the nature of tasks among auditors which are reflected in quality.

Another characteristic of the current audit profession is working in teams with others from around the world. Given the global reach of large multinational businesses and regulator concerns, research 'is needed to promote understanding of the specific nature of factors contributing to difficulties in coordination and communication among firms' (Downey & Bedard, 2019, p.1). Recent studies on this issue have focused on dysfunctional audit behaviour between individuals and groups as a result of a factor such as communication between team members (Su & Wu, 2019).

One way for audit teams to communicate is by using technology as virtual teams. The question is how this virtual environment affects audit quality. To investigate this issue, the topic of the study in Chapter 2 is entitled 'New organisational challenges: "Dishonesty" in

face-to-face and virtual teams'. Group issues are one of the most vital topics in auditing that were selected in the previous part and were analysed over the decades included in this study. This research portrays one of the modern topics that deals with the communication methods between team members and the extent of the probability of dishonesty where there is minimal supervision.

Our experimental methodology in this chapter used word search puzzle treatments among team members to emulate the reviewing procedure and the reporting of data to determine the effectiveness of review operations. In practice, audit team members are involved in a process and evaluations that are implemented in order to collect sufficient evidence and to report on the financial statements of clients as the reviewer examines the work papers and records review notes. For example, the reviewers meet with the preparers either face to face or in a virtual way to discuss these notes.

The results of this study contribute to the issue of the likelihood of fraud in the absence of monitoring the communication teams in a work environment in which the composition of the team (face to face or virtual) is vital for the completion of the audit procedure. It appears that the members of the virtual communication team are more likely to engage in fraud than are the groups working face to face. Therefore, exploring this factor that influences an auditor's decision was precious as it depicts the managerial levels of the organisation and the importance of supervision of teams, especially members of a virtual team, which contributes to reduce fraud and thus positively reflects on quality in decision making.

The global goal of our thesis is to address a modern issue that is of concern to the economic world. The global financial crisis has resulted in policy makers once again focusing attention on the importance of an effective audit function as a key component in effective capital markets as well asto attempt to identify key drivers of audit quality. For example, in the

United States, the Advisory Committee on the Auditing Profession (2008) was founded to provide counsel to the U.S. Treasury Department on the auditing profession. In the United Kingdom, the Financial Reporting Council issued The Audit Quality Framework (2008), and in Australia, the Treasury released Audit Quality in Australia a Strategic Review (2010). These regulatory and investigation changes make it clear that there has been major dissatisfaction with the efficiency of corporate governance, the quality of the audit procedure and the role of auditors and auditing (Al-Khaddash, Al-Nawas, & Ramadan, 2013; Cassell, Hunt, Narayanamoorthy, & Rowe, 2019). Our studies addressed in this thesis are also aligned with behavioural economics, which is a relatively new field that combines visions of psychology, governance, decision-making and economics to produce a more accurate comprehension of human behaviour. Current research trends in auditing include the issue of behaviour, in which the auditor's behaviour has been the focus of researcher attention for some time but is now emphasised due to recent major corporate failures. Dysfunctional auditor behaviour, such as dishonesty, has been the major issue under examination and attention by researchers because it has been associated with audit failure and reduced audit quality (Tervo, Smith, & Pitman, 2014). Poor audit behaviour is an ongoing issue and remains a challenge (Smith & Emerson, 2017) because a large number of auditors participate intentionally and not out of ignorance (Nehme, Mutawa, & Jizi, 2016). Moreover, Barrainkua and Espinosa-Pike (2015) highlighted that, despite the interest of oversight bodies, professionals and researchers, there is still clear evidence of unethical practices and behaviours related to the audit profession. Therefore scholars and researchers have emphasised the need to know the enablers and predictors of dysfunctional auditor behaviour (Broberg, Torbjorn, Argento, Gyllengahm, & Martensson, 2016; Herda & Martin, 2016; Nehme, 2017).

Given the importance of this issue, there is a need to explore auditor behaviours and the factors that may influence auditors when making a decision, whether the factors are

administrative, such as a system of financial incentives, or related to the number of tasks, or are technical, such as ways to communicate between members of a team of auditors whether facetoface or virtually.

In sum, this dissertation is expected to provide a global overview of current audit problems for which empirical evidence is still lacking. In particular, it contributes to studying and providing solutions to specific issues affecting misconduct in an audit environment, such as fraud and dishonesty. These problems may permanently limit the economic problems that could exacerbate the effect of improper auditing decisions, which have the attention of legislators, shareholders and decision-makers.

General Framework

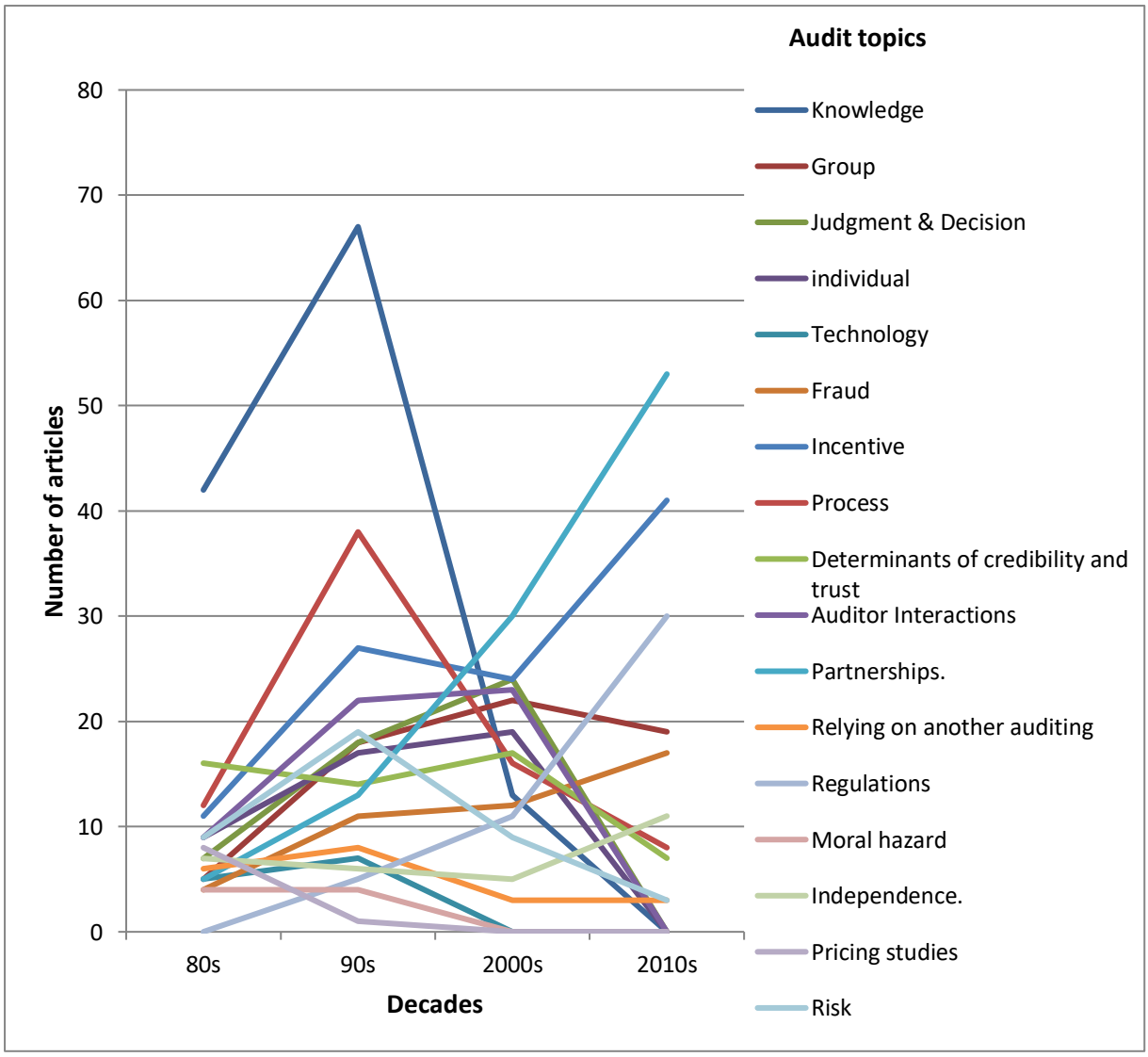
The global financial crisis drew attention to the functions of financial reporting in periods of sharp financial decline and has driven a main debate involving regulators, processes, and researchers across the world (Sikka, 2009; Cooper, 2015). The outcome indicates that there was a close relationship between the financial crisis and auditing, and the influence of dysfunctional behaviour on audit quality was among those relations whose impact on the crisis was proven. Thus, the auditing side played a major role in the financial crisis (Bischof, Daske, & Sextroh, 2014; De Jager, 2014). Every firm, company, or organizational setup needs to have an accurate representation of its transactions. This is because auditing ensures that financial statements are continually evaluated there is compliance with a function, process, or production step. From this point of view, we should have been aware of the direct and indirect issues that affect the quality of the audit. Therefore, a comprehensive view of these issues was taken with a different approach to the previous research. In the review of the experimental literature reviews between 1982 and 2017 provided here, we assess the state of research on the topics related to auditing. The structure of this literature review will start with an analysis of the experimental literature reviews over 35 years from 1982 to 2017 based on the four decades and will then identify the variables (issues) that may affect the quality of the auditor's opinion. In addition, it will study the evolution of the most prominent issues during 35 years. Lastly, this literature review addresses those topics which are directions for future research. This is probably the most obvious value of the literature review; a search of relevant information sources will help determine what is already known about the topics and how extensively the themes have already been investigated. It will reveal which issues have been studied using this specific kind of methodology in past studies. Substantially, the greatest motivation for this literature is the type of research methodology used in the review, as according to our knowledge, a small number of previous works in the literature used this empirical approach. From 1982 to 2017, only 21 experimental literature reviews addressing those issues which affect the quality of the auditor's opinion were found. Actually, what

distinguishes this literature review from the rest of the reviews is that it is modern and shows the old topics and topics that have recently emerged, studying the evolution of issues over several decades, the recent directions of the research compass in these related subjects, and their impact on audit quality. When we highlighted the previous reviews, we found that each experimental literature review has different features from the others in raising the issues that affect the quality of the audit, but none of these studies have been comprehensive in mentioning the various subjects and their development over long periods of time. In order to illustrate the idea more, we mention here as examples some previous literature that evaluated experimental research methodology and the laboratory environment issues and discuss past and future auditing applications without mentioning many topics that directly affect audit quality (Swiering & Weick, 1982). Some studies have addressed various subjects and have a strong relationship with audit quality but the history of the literature review is not modern (Nelson, 2005). Recently, various studies touched upon the issues directly affecting the quality of the audit but highlighted one subject, such as partnerships, and expanded it without addressing several other themes; it was only a specific subject (Lennox, Wang, & Wu, 2017). Our review discovers new angles that need further exploration by reviewing what has already been investigated on a topic during the period of 35 years. A wide range of issues and research points have been identified to improve quality. This review identifies a broader perspective because it does not focus on specific topics but addresses different issues that may affect the audit process. The large number of researches on different topics gives a panoramic view of the experimental literature on auditing. This research explores which samples of research have taken on audit issues and goes a long way toward providing them better sequential chronology of audit issues. Therefore, all studies of empirical literature on auditing sought to give weight to the concept of issues that affect the audit as a whole. This research includes the results of studies that applied the experimental approach. The issues presented in the literature provide a detailed picture and a better understanding of everything facing the audit process and the auditor. There is no doubt that an auditor plays a vital role in

ensuring that all processes are evaluated well and given the credibility they deserve. Therefore, any company or regulatory institution should provide investors and creditors with the assurance that funds are well managed. To do this, auditors must be in place because they have the eligibility and authority to deal with audit matters. It is an audit that ensures that financial statistics are well balanced to allow for smooth management of the company or organization. This is because auditors review financial statements and help to create a sense of balance and accountability. On the other hand, auditors protect the public, who may fall into the trap of investing in companies that use corrupt business practices or attempt to deceive investors with misinformation. Auditors are key players in evaluating the effectiveness of the internal control of a company, which helps to a large extent in ensuring that the company achieves its desired objectives. Covering audit issues gives the auditors a sense of direction and focus and keeping the institution on its toes through the auditor's report, the organization can assess itself, improve errors, and seek to make its operations effective.Auditors can consider a wide range of related issues; as much as their sole agenda is that of evaluating financial statements, they come across a lot of issues, such as areas of concern in the letter of engagement between the auditor and the client. The latter is a key in ensuring that there is a clear understanding of the auditor’s responsibility and that of the management as well. The auditor should be given access to all information of which the management is aware that is relevant in the setting up of financial statements such as records, documentation, and other matters. Cooperation with a firm or company is also something that an auditor can consider, because it is vital in the execution of the auditing task. Again, the auditor should be able to access any additional information that he or she may request from the management for the appropriate auditing process. The risk of fraud is another issue. International Standard on Auditing (ISA 240) the auditor’s responsibilities relating to fraud in an audit of financial statements recognize the risk of fraud due to bad management in the internal controls. To that end, the auditor has to put aside other beliefs that he or she holds and stick to professional scepticism when carrying out his or her audit (Trotman, Wright, &

Wright, 2005).With regard to the major issues addressed in this empirical literature over the past 35 years, Figure 1 shows the number of empirical studies on audit topics during the time periods and shows the extent of interest in the subject during these periods. Through the presentation of previous literature, it can be seen that several subjects have been the focus of many studies, and in each era of time we find a disparity of interest in these studies. Throughout the chart below we can see how much attention has been given to those topics in terms of the number of clear studies over all time periods.Obviously, a number of auditing subjects have had continuous activity throughout the decades and some have had intermittent activity.

Figure 1. The direction of the research movement on audit topics based on the number of studies during four decades



In this study, specific databases such as the Web of Science, SSRN, Google Scholar, and Science Direct have been used to look for the reviews included in the current review. We bounded the review to experimental studies throughout ‘Articles’ and ‘Book Chapters’ published from 1982 to 2017. These studies have been selected after reviewing and reading abstracts that correspond to the subject of our literature study addressing experimental studies and audits topics based on four decades.

1. Previous experimental literature reviews on audit topics from 1982 to 2017

A wide range of points have been captured in the experimental literature review so as to give a broader understanding of all the concepts concerning and related to auditing from the year 1982 to 2017. To obtain clarity about these, it will be reasonable to analyse the topics that have been investigated using a four-phase scheme covering the four decades of the 1980s, 1990s, 2000s, and 2010s. There is a noticeable trend in some subjects during the first-phase scheme; for example, Swieringa and Weick (1982) delved through the empirical literature mentioned on topics dealing with performance measures to reward performance, judgement tasks, and experimental and mundane realism. These are keys in better informing all concepts of the auditing process. In the experimental literature study of Smith, Schatzberg, and Waller (1987), the audit topics were accuracy in moral hazard studies (principal-agent relationship) and pricing studies were tackled. Moral hazard revolves around one person taking risks because someone else bears the cost of those risks; it boils down to the risk taken by a party in a transaction which has not been entered into with goodwill and where false information has been provided. From the auditing perspective, this makes all processes less efficient and there is need to make the auditing resourceful.The investigations on these topics were extended in the literature reviews of King (1991), which mentions a number of diverse relationships between purchasers and producers of services pricing issues, the relationship between disclosers and users of information, and interactions among information disclosures, users, and "auditors". Furthermore, some topics have been addressed and taken account in a literature reviews by Libby and Luft (1993), which addresses some different relationships such as the relation between knowledge and judgement, memory in group processes, training programmes, technology, and decision aids; additionally in the same field, investigators have studied potential errors in audit technology, as another studies address the issues of novices inferior to experienced, in the same context, the auditors prior involvement accountability through participation in a previous year's issues have been studied. Other topics have been addressed related to audit limits of motivation effects that depend on the effort-sensitivity of

the tasks. In the same decade, Mock, Watkins, Caster, and Pincus (1993) mentioned in their literature review, which covers all experimental studies related to audit issues during the period of 1983–1992, that there were 14 issues such as independence, administration, reporting, audit technology, and the audit process. Furthermore, experimental studies were also pursued but, in another direction, related to the audit environment; there was interest in negative behaviour topics that have been discussed and studied in the previous literature, such as the audit environment, predictors of financial statement fraud, assessment of fraud, and reliance on decision aids, which were mentioned by Nieschwietz, Shultz, and Zimbelman (2000). In the third phase, there is indications of how a reliable environment is a key as well as decision aids to provide better information. In the same decade there was also a literature study of certain subjects in audit topics. Libby, Bloomfield, and Nelson (2002) turned to a variety of subjects that had a clear impact on the auditor and his or her decisions, and a detailed search on what the factors are that affect these topics related to auditors. They shed light on the supply and demand for financial accounting research which comprises psychology models of risk and reward as well as knowledge-based decision-making for efficient data retrieval. Thus, the literature review mentioned some other different issues about predicting what behaviour will occur under which circumstances and some studies that demonstrate the relation between the knowledge and motivation of information reporters and users, as the literature also lately mentioned specific matters as group decision processes in auditing. Another study of Solomon and Trotman (2003), who delve into audit judgement decision-making when are made by team or group. In the same year, Sprinkle (2003) highlights in his experimental literature some different perspectives and keeps abreast of the overlap of innovation with decision-making issues, where various studies have included how employees make judgements and decisions based on their innovations in information technology, illustrating the impact of technology on decision-making. Moreover, another study by Nelson (2005) takes a different curve, touching on various administrative themes such as the audit and non-audit fees, client size, and adjustment materiality, as the study also

mentioned some influences on the internal environment of auditors such as the issue of the effectiveness of incentives, regulation of impacts, and negotiations between experienced auditors. In fact, it is clear from this overview that a large number of topics are mentioned and considered to be more recent issues than previous periods. It seems to be clear from the previous review that it was a new curve of some topics of what will be mentioned in this decade. It will also be clear that many of the outstanding problems in this era are directly related to auditors 'accounts, such as auditors' information, auditor knowledge, and the importance of experience. In addition, many studies examined the concept of individual characteristics and cognitive limitations. In-depth issues regarding the effect of decision-making on performance were also addressed. As to improve the quality of auditor judgements and discuss the reasons for multiple quality levels. Obviously, through the literature review of Tortman (2005), who used Brunswik's lens framework to examine the prediction of corporate failure between-auditor interactions (groups) beside the matter of audit judgement and decision-making. On the other hand, a number of issues have been presented which are derived from the previous topics in other literature reviews; for example, Nelson and Tam (2005) point out topics and sub-topics of risk assessments and audit planning as well as themes of analytical procedures. Additionally, many of the subjects in their study have also been revisited which had been considered in some previous literature reviews such as the issue of judgements, opinions, and modification as well as matters related to the auditor's affairs including individual characteristics, auditor knowledge, expertise, and cognitive limitations. Furthermore, several themes have been investigated regarding the issue of the relationship between internal and external audits including interpersonal interactions, interactions between auditors and externally, and the study also addressed some other conflicts that occur in audit–client interactions or even in interactions between auditors and others. In other literature studies of some different and somewhat new subjects that took a different approach, such as that of Callahan, Gabrial, and Sainty (2006),a great deal of research has focused on issues of financial incentives and legal systems in auditing as well as

addressing some related subjects in terms of individual work and teamwork issues. Significantly, there was a spotlight on the issue of behaviours in the audit environment. Studies have dealt with explicit and implicit rules with cash incentives, including some sub-topics such as profit management, group incentives, and performance-related relationships. Similarly, the issues of human resources were discussed at both individual and collective levels, including precise topics such as team issues, administrative cooperation, control systems, performance of tasks, and employee satisfaction. Additionally, some diverse issues have investigated the conflicts of interest through the expert's impact on investors' decisions and the impact of tax policies on investment decisions. Messier (2010) discusses various themes such as the task level, judgement decisions, planning including assessing risks, internal control, and evaluation of business processes; these topics have been the most frequently investigated and studied. Notably, special topics have been expanded, including the knowledge of experts and the effect of specialists' audit review, as Messier's literature review considered some studies related to the discussion of ideas, fraud, and business risk assessment. On the other hand, the review of Trotman, Tan, and Ang (2011) focuses on different angles, expands topics deeply into the concepts of independence, and addresses some strategies that have helped reduce decision bias and assess overall performance in risk assessments. Some issues have also addressed the result of the accreditation of external auditors in the internal audit function as the reliability of audit provisions is widely known. This may also represent other directions of studies concerning the matter of forecasting and predicting the choices made by other auditors, as well as some studies that are concerned with the source of internal auditing, which relies on internal work rather than outsourcing, audit justification, and feedback. In this time period, many types of researches covered important topics when the opportunities for studies were rich; for example, in the process of collective decision-making and the review process, some issues emerged and were of interest regarding tasks nature between collective workers and individuals, which led to the study of performance issues. Some studies went further, focusing on how the audit committee's

decisions to appoint auditors for unaudited services were made. Motivation issues have also been a rich field for researchers. Moreover, there are also topics that have been developed and are almost modern, such as negotiation settings throughout negotiation with clients and fairness in pricing. On the contrary, there were continuing topics regarding knowledge issues such as knowledge and memory, knowledge, and experience, and in the same context some studies took into account the information about a previous decision in order to compare it with information concerning another client, while some studies address the data structuring techniques on audit, planning on one hand and testing the issues of fraud standards and honesty on the other hand. During this period, several empirical researches focussed on the relationship between external and internal auditors, such as the study of Bame-Aldred, Messier, Rittendberg, and Stefaniak (2013), which states that there was a spotlight on reliance on the internal audit function which clarifies that external auditors rely on the internal auditors' functions. In the same context, some themes illustrate the effect of the governance structure on external auditors' reliance on the internal auditor functions and address the factor of expertise in the audit committee in internal auditors' functions. Likewise, some studies mentioned procedures relating to the nature of work such as external audit timeliness and efficiency through external audit delays and rotation. Additionally, some studies address administrative themes including the issues of how management training affects the financial reporting quality, operational performance, and litigation risk. According to Peecher, Solomon, and Trotman (2013), there were also clear previous studies on other themes that have been of interest to researchers whether in the past or in the present, but new related sub-topics have been explored, evidencing that the motivation for rewards versus sanctions and the relationship between external incentives and agent performance have been fertile issues. In addition, the scope of the process topics has been expanded to be comparable to the auditor's fraud and reward reports, and some related issues have been developed based on that including the quality and timing of the auditors' audit process. To a large extent, the empirical studies in this literature have addressed the depth of the audit risk of audit team members with

regard to the question of techniques used during the review process, such as online reviews versus direct reviews, as well as some topics concerning cybercrime, and scepticism, and intentional or unintentional prejudice. Maksymov (2015)spotlighted such topics in a review focusing on standards through transactions between clients and auditors; the literature addressed topics related to ethics at work, where some studies address the determinants of credibility, the determinant of competence, and evaluation of the trustworthiness of other auditors. The review also took into consideration the outcome of these behaviours such as studies of consequences of competence evaluation of clients' managers and trust between managers and auditor as well. Most studies have focused on these reviews widely because the review lays the groundwork for the entire auditing concept. A wide range of specific themes have been investigated review process in an experimental literature review by Trotman, Bauer, and Humphreys (2015), who address the review process and brainstorming issues that including fraud and electronic brainstorming; this study considered some specific subtopics such as face-to-face interaction versus nominal brainstorming. A number of studies have also dealt with statutory legislation, such as consultation within firms and the effects of regulation including financial reporting and rules; additionally, this issue evolved to address the effects of corporate governance regulations on auditors. The review also addressed some topics which had been previously studied, such as audit committee independence and accountability. Experimental studies also looked at topics related to partners of auditors and problems between customers and agency partners, including issues of partner characteristics. In the same line, there are sub-topics that also address the client's economic problems, which has led to expansion of the issues of importance of the customer and the audit partner in terms of size and workload. Some relationships between professionals or personal relations between clients and audit partners have been studied, and related topics such as switching audit firms, including the issues of contracting with partners and the issues of compensation and heterogeneity in the partnership have also been mentioned. Another study worth mentioning in the same decade is the one by Sheremeta (2016), which addressed some themes that have

been investigated extensively, although the study collected studies from the early experimental literature reviews, but there was recent and widespread interest by the investigators and many academic journals. In particular,the issues ofincentive have been taken but fiscal stimulus is the leader and its correlation to audit behaviours; very recently empirical studies on this subject have relied on financial incentive schemes and their relevance to the behaviour of the auditors. Moreover, recently there have been studies focusing on some themes related to partner matters such as voluntary disclosure and audit partner rotation. As they have been investigated regulatory inspections and sanctions. The study of Lennox, Clive, and Wu (2017) mentioned many topics of recent studies, such as client preferences regarding auditors' judgements, and anothercareful study included the relationship between the appointment of the auditor and the remuneration. Furthermore, the review has studied disclosure checklist themes as a decision aid in the audit process, as some studies address the topics of high client retention pressure. In the same era, some studies have taken into account the issue of scepticism in the review process. Moreover, the literature study was partially compatible with the same previous subjects that focused on client topics where customer preferences regarding the auditors' judgements were reported as well as consideration of decision-making in the audit process.

2. Prominent audit topics (experimental studies) from the 1980s to the present decade

This precise part aims to present the prominent topics highlighted by many studies on audit issues over four decades. These topics were selected based on the highest number of studies that investigated these subjects in each time period. As a result, there may be recurring issues over varying periods of time. It should be noted that there is a remarkable development of the topics when repeated in successive periods of time, with some issues reaching the extent of integration with other topics and some topics having also been developed into new topics.

2.1. Analysis of 1980s topics

2.1.1. Knowledge

In this period of time, knowledge issues related to the auditor or auditing process were the subject of many and varied studies. These studies included the relationship of knowledge with the issuance of judgements. The analysis of this topic carried out by Birnberg and Shields (1984) indicates that knowledge is a determinant of better auditing performances. It was still noted by some studies that knowledge sustains the completion of continuous auditing tasks so as to avail one with constant experiences and procedure and beliefs in an integrated form (Abdolmohammadi& Wright 1987; Frederick & Libby 1986). Studies have expanded and addressed the information factor in knowledge issues, investigating the relationship between disclosers and users of information.Obviously, this theme was analysed by Forsythe, Isaac, and Palfrey (1989), who significantly show that liability for data exposure depends on the balance struck between the voluntary will of the auditor and the managerial skills for information handling. The results reflect that exposure depends on the kinds of needs of the user, which should match the degree of development in the practices of accounting; the performances of the auditors are most likely to be hindered.Some studies also touched on the extent of interactions among information disclosures, users, and auditors. The subject was handled by Fisher (1987), whose results reflect the systematic management of data in relation to the duty and independence conferred upon the auditors to disclose data. The findings of Dopuch, King, and Wallin (1989) indicate that the control of information is part and parcel of the integrity of the parties and once loopholes are discovered, it would be substandard for the accounting profession. Some studies have taken another course, focusing on training programmes, abilities, learning, and experiences. taken by Libby and Libby (1989) recommends that in order to achieve better auditing performances, the need for continuous learning and training programmes is an inevitable journey. The point was supported by Butt (1988), who considered the elements that could help one attain success in the auditing field. Both authors acknowledged that the elements are the essential tools that mark employees with

achievements, appraisals, and company development in all areas. Some studies have also examined the extent to which novice auditors are able to make errors in the audit process, which indicates the importance of relying on the knowledge of experienced auditors; Biggs, Mock, and Watkins (1988) show potential errors and that novices are inferior to experienced auditors, with the result that years of experience of an auditor are important determinant in the detection of errors in the work done. In a similar study, Trotman and Yetton (1985) observed that it is better to employ auditor with advanced years of auditing so that one can avoid errors in the work that could make a company liable.

2.1.2. Incentives

The summary results of different subtopics concerning incentives in the 1980s highlight the way in which differences in the business sphere are used to tap into the effectiveness and ease of doing business operations (Holmstrom & Milgrom, 1987). The discussions are related to the decisions made which influence the use of different managerial accounting data to raise critical questions. The questions are necessary to develop critical incentives and effective channels through which different anticipated frameworks are completed (Grossman & Hart, 1982). The results indicate that for most managerial accounting firms to be active, their workers have to act opportunistically and respond appropriately to the different frameworks that have been made. The study also clearly brings out the question of trying to solve the issue of why agency problems can be addressed in due course and the best possible undertakings can be obtained. In the study of Roth and Murnighan (1982) evaluates that incentives are great learning tools which bring key topics into the framework and make sure that the right considerations have been effectively accomplished. It is through the framework that the right channel is adopted and effectively used for effectiveness (Sappington & Stiglitz, 1987). Moreover, the study of Baker, Jensen, and Murphy (1988) summarizes the compensation aspects shows that in managerial accounting, incentives are necessary to make sure that proper compensations have been made (Baiman, 1982). It brings out key insights

and ensures that. There are different proponents and highlights that the study summarizes, including the benefits attained from the way in which various undertakings and accomplishments have been carried out (Sklivas, 1987).

2.1.3. Review process

The review process sets out a framework through which different decisions are undertaken and the right process is considered (Libby & Trotman, 1983). The results reported by Trotman and Yetton (1985) indicated that the stage of review process is an excellent anticipation in term of decisions that every auditors should consider. During the process of auditing, the most important structure works better through the effectiveness extent that is taken and judgements that auditors make always depend on the process. In his book, (1985) further outlines that the accuracy of auditor judgements depends on the review process considered. When the right review is undertaken, it becomes possible to understand the decisions that have been taken effectively. Results indicate that there are several impacts which the review process has in the life of an auditor (Schultz & Reckers, 1981). Reviewing is not something quickly followed and taken up. Instead, there are several different anticipated frameworks and considerations which ensure that the process is effective. When the review process has significant limitations, there are great insightful aspects that affect the general outlook of different components. Moreover, results by Holbrook (1986) indicate that 50.9% of auditors become effective if the review process has been structured and completed in the right way. Without a proper framework, the review process is affected by various undertakings (Williams, 1985). The framework should be adequately designed to make sure that enough anticipated projects have been completed in due course (Solomon, 1982). The review process is a necessary process that makes sure the right procedures have been followed and laid on the right path. When the review process is reliable, everything will work as well as possible (Tortman & Yetto, 1985) and there will be straightforward undertakings that will ensure that proper aspects have been laid down in the right manner.

2.1.4. Determinants of credibility

Several studies in the 1980s investigated the determinants of credibility, competence, and trustworthiness as in evaluation of client managers and auditors. The study by Shaw (1980) on the aspects of auditing shows that to a great extent, integrity and competence are cognitive priorities for every auditor. In the accounting profession, auditors are required to be very much genuine in all their undertakings (Guba, 1981). Whenever an auditor fails to be equipped with integrity, every step of his or her processes will become ineffective (Mosier & Ahlgren, 1981). Credible work can be achieved when the auditors are genuine and able to complete various undertakings without any form of limitations (Stamp & Moonitz, 1982). Credible considerations will be useful and will ensure that the right channels and alternatives have been undertaken (Nichols & Smith, 1983). For the auditor to remain highly reputable, reputation and integrity should be the number one principle, as they should be useful in all their undertakings and should ensure that all the limitations have been dismissed. The result obtained by Eadie, Komsky, and Krivonos (1984) shows that competence information is essential for an audit process to be effective. Various analytical procedures that have been carried out are critical in allowing the best feature of the auditors to take place (Benoit, 1987). The auditors and the client ought to work with ultimate integrity, trusting one another (Powers, 1987). Since auditors have to deal with confidential information, they will be useful in the way in which they apply their integrity and handle the data appropriately. According to Schwandt (1989), trustworthiness is an essential principle that determines the reliability of an audit. Without a reliable audit plan, different components will not be completed during an audit (Lui & Standing, 1989). It is necessary to have an audit that effectively helps the process to be done competently and to ensure that the right undertakings have been completed in due course (Whitmore & Ray, 1989). Such steps are necessary and ensure that the most useful aspects have been dealt with in the right way.

Table1. The experimental literature reviews of audit topics during the period of the 1980s with the authors

1980s	
The literature review of Swieringa & Weick (1982)	
Performance measures to reward performance.	Cherrington (1973); Ansari (1976); Rockness (1977).
Judgement tasks and performance.	Campbell & Stanley (1963); Barrett (1971); Cherrington & Cherrington (1973); Ashton (1974); Ansari (1976); Rockness (1977).
Experimental and mundane realism.	Aronson & Carlsmith (1968); Carlsmith, Ellsworth, & Aronson (1976).
Principal-agent relationship (disclosure, trust, groups and comparison).	Higgins (1981)
The literature review of Smith, Schatzberg, & Waller (1987)	
Moral hazard studies (principal-agent relationship)	DeJong, Forsythe, Lundholm, & Uecker (1985, 1986).
Pricing studies.	Schatzberg (1987a, 1987b); Davis (1987).
Quality of financial information.	Wallace (1980); Scott (1984); Watts & Zimmerman (1986).

2.2. Analysis of 1990s topics

2.2.1. Knowledge

In this decade, the matter of the knowledge of the auditor or review seems to have been of interest as it was in the previous decade. Studies also dealt with the same issues, which included several sub-issues where the relationship between knowledge and judgement continued to be investigated; the study of Bonner (1990) shows how knowledge and experience work hand in hand when auditors develop recommendations for customers. He states that the knowledge of an auditor significantly affects the judgements during decision making. Auditors encounter difficulty when applying their knowledge and experience to

judge the profitability of an audit objective, as stated by Libby and Trotman (1993). Professional opinions are characterized by the vast knowledge that auditors have in judging and how they use it, the results show that judgement depends on the aggressiveness of the recommendations. As difficulties increase, experts with more knowledge apply less aggressive recommendations and trust the expectations more. Other studies continued to discuss the issue of disclosure and users of information where the issue looks at two agents: the seller who is giving out information and the buyer who receives it in an attempt to buy. In line with this, King and Wallin (1991) assumed that when disclosers are reliable, retailers will ultimately reveal private information to possible buyers and investors. the availability of disclosure options to the seller and the knowledge the buyer has regarding those different options and the results show that the more repetitive the dealings between the buyer and seller are, the more information the seller will disclose to the buyer. Other related studies also touched on the extent of interactions among information disclosures, users, and auditors; Kachelmeier and Messier (1990) states that experiments are conducted to determine the effects of relevant information on decisions about capital allocation. He developed two sets of hypotheses showing how financial markets respond to additional disclosures. One set assumes semi-strong market effectiveness, and the other assumes that the knowledge of individual sellers leads to ineffective market prices. He found that disclosing an upper bound of the management's estimate can cause a bias in prices such that they increase, while fair disclosure of the upper and lower limits removes the bias. The results of that are that reactions to additional disclosures are inconsistent with market effectiveness. On the other hand, subtopics of knowledge covered training programmes, abilities, and experiences. More knowledgeable accountants have a broad perspective of the task under review, and the results indicate that decisions depend on the abilities, learning, and experiences of an individual professionally (Hogarth, 1991). Moreover, another study by Frederick (1991) emphasizes that the more training auditors receive, the more they learn and acquire knowledge. The level of skills also affects the performance and judgements of auditors. Later in the same decade, a

study by Bonner, Libby, and Nelson (1997) showed that training, ability, knowledge, motivation, and the environment affect the performance of auditors. In the same context, some studies dealt with issues related to knowledge about potential errors and the inferiority of novices compared to experienced auditors. This subtopic is carefully examined by Bonner and Lewis (1990), who reflect on the need for knowledge and training that would help one acquire expertise in his or her field of task management. The performance levels of the auditors have been examined by using different levels of experiences. The results indicate that, on average, more experienced auditors perform better than inexperienced employees but the ability to provide routine work and knowledge shows the variation in error management (Biggs, Mock, & Watkins, 1988). The effects of the limits of motivation depend on the effort-sensitivity of the tasks. Some studies cover the motivation of workers so as to understand progressive performances, and the types of contracts are examined according to the initiatives the employers inject in the terms and the conditions (Kennedy, 1993; Awasthi & Pratt, 1990). Some authors set out a hypothesis that establishes that individual determination to be motivated leads to progressive performances. The authors reflect that through constructive feedback, the initiatives embrace devotion to the work tasks (Tubbs, Messier, & Knechel, 1990).

2.2.2. Incentives

Several issues have been addressed under the theme of incentives in this decade; including the relation between performance and reward systems is vital (Waller & Bishop, 1990). This paper proposes a proper examination of the compensation scheme as it influences the way in which managers convey and implement strategies in accounting. The results are that compensation for directors is not the same as that for managers, and measuring the shareholder value at management level is difficult. Through the work that the auditors complete, they are paid for recognition of their efforts through monetary incentive programmes (Awashti&Pratt, 1990). Libby and Lipe (1992) and Itoh (1991) were of the

opinion that efforts and cognitive processes are a vital pillar in determining the course of accounting progress. An article by Luft (1994) identified vital facts concerning incentives applied by employees to advance their contracts and achieve better performance. The author summarizes the different channels and incentives that have been considered to ultimately affect the environment as it appears in the accounting profession (Ashton, 1990). Motivational incentive is also a critical componentthat brings out the levels of performance (Hackenbrack & Nelson, 1996). As an auditor working in the accounting profession, it is necessary to be driven by incentives focused on generating effective outcomes and reliable results free from bias (Hunton & McEwen, 1997). Moreover, another author states that monetary incentives generate positive results in due course; data show that out of ten employees, five of them will work best if they are given monetary incentives and compensation (Kreps, 1997). Furthermore, results from the study of Bailey, Brown, and Cocco (1998) indicate that incentives are great pillars of performance in the accounting profession. They are necessary to sustain the different undertakings and ensure that effectiveness has been achieved in due course. In the studies carried out during the 1990s, incentives were stipulated with different ideas and prospects. Obviously, authors such as Sayre, Rankin, and Fargher (1998) show some important aspects concerning both intrinsic and extrinsic incentives in a firm. They are needed to effectively accomplish greater progress through their processes, as it is impossible for workers to be useful if the organization in which they work lacks proper incentives that seek to motivate the workers for the realization of their ultimate efforts (Camerer & Hogarth, 1999). There is a need to understand the efforts that workers make in their various works to be effective.

2.2.3. Review process

In the 1990s, different studies were identified, giving an understanding of the review process. The structure of the books ensured that proper frameworks and anticipated components of the management review process had been utilized. A study by Libby and Trotman (1993) shows

that review process stage has great evidence in the judgements made by the auditor. When auditors consider the right review process, they will be effective in the way in which they consider various aspects (Grimshaw & Russell, 1993). Moreover, a study by Ismail and Trotman (1995) hypothesized that the review process is a great generational task within organizations and society. It is a necessary condition that makes sure that the proper anticipated components have been taken into account and used in the right ways. Asare and McDaniel (1996) looked at the significance of the audit review process. Another study realized that in the audit field, the review process is essential and determines how different components and considerations are undertaken (Robson, 1991). There are various aspects identified by the author that are effective and ensure that the correct channels have been used during an appropriate review process, which shows that the review process is a key stage in the decision. Rich, Solomon, and Trotman (1997) claimed that from a persuasion perspective, the review process is a great aspect that determines the ultimate undertaking. Another study sets out the right path which the audit review process will take. Without the right review process, the audit process will possibly fail. It is necessary to have a great implementation and process that will sustain the review process and make sure that the right framework is followed in due course (Rebele, Apostolou, Buckless, Hassell, Paquette, & Stout, 1998). It is through such a process that an effective audit is used. The auditors are responsible for making sure that the review process to be considered at any one particular time has been done effectively in the right way (Raynard, 1998). The different aspects that have been outlined and considered are those that are necessary to make sure that the review process used is able to give positive results efficiently. It is the review process that the auditors consider that forms a great undertaking and understanding of the effective path that the audit will take (Oxman, 1994). Different evidences and effective undertakings have been used to make sure that the right facts have been made through the audit process. One in ten audit processes lacks an effective review process (Jones & Shoemaker, 1994). Moreover, results obtained by Reimers and Fennema (1999) indicate that the review process is very sensitive to information

obtained during the audit. It is anticipated that during most of the review process, information is frequently misused (Messier & Tubbs, 1994). In one way or another, information has been subjected to several alternative harms through the review process (Davis & Taylor-Vaisey, 1997). That implies that most of the reviews have not been done in the most appropriate ways. The review process ought to be considered in due time and the best alternatives followed to make sure that the review process is the best one (Chalmers & Altman, 1995). Without the right considerations, there will be a problem with the information obtained. Data security is a critical priority in the review process that ensures that every piece of information has been controlled in the right way.

2.2.4. Risk issues

A number of studies addressed the issue of risk in auditing throughout the 1990s. The risk is a significant concern that affects the organization significantly. When all the facts have been compiled, it becomes easy to overcome risk and efficiency become relevant in the entire process (Maletta & Kida, 1993). The risk affects the entire processes of effective bias-free audit which should be considered. Zimbelman (1997) states that fraud risk is one of the most significant issues that occurring in almost every organization. The organization ought to structure most of its operations in such a way that it can overcome risk potential (Houston, Peters, & Pratt, 1999). It needs to effectively overcome the risks to which it is subjected and become effective in most of its operations (Dusenbury, Reimers, & Wheeler, 1996). More considerable risks mean that the audit process is never effective. It narrows down to different limitations along the way that can be evaluated using a different plan that ought to be considered (Brown & Solomon, 1990). Another different study by Sprinkle and Tubbs (1998) understands that audit risk can occur due to the auditor's ignorance. Ignorance can cost the entire audit process, ensuring that effectiveness of the audit is never achieved. Different alternatives should be considered instead of focusing on audit risk, which can effectively affect the entire process. Moreover, results obtained by Waller (1993) show that over 23% of

auditors fail to predict the risk since their key focus is not on getting into the grassroots of the current operations of the firm. The auditor should always look for information concerning the organization and ensure that he has been able to effectively gain a proper understanding (Young, 1995). Risk control can be put in place in an organization to avoid any form of occurrence of future risk. It is through such controls that the organization becomes effective in all its operations.

Table 2. The experimental literature reviews of audit topics during the period of the 1990s with the authors

1990s	
The literature review of King (1991)	
The relationship between purchasers and producers of services (pricing studies)**.**	Dejong, Forsythe, Lundholm, & Uecker (1985); Dejong, Forsythe, & Lundholm (1985); Dejong, Forsythe, & Uecker (1985); Davis (1989); Matsumura & Tucker (1989); Schatzberg (1990).
The relationship between disclosers and users of information.	Forsythe, Isaac, & Palfrey (1989); King & Wallin (1991).
Interactions among information disclosures, users, and auditor.	Fisher (1987); Dopuch, King, & Wallin (1989); Wallin (1989); Kachelmeier (1990).
The literature review of Libby & Luft (1993)	
Technology and decision aids, audittechnology.	Jiambalvo & Waller (1984); Butler (1985); Daniel (1988); Libby & Libby (1989); Ashton (1990); Kachelmeier & Messier (1990); Emby (1990); Moeckel (1990); McDaniel (1990); Ashton (1990); Ricchiute (1992).
Training programmes, abilities, learning, and experiences.	Butt (1988); Libby (1989); Bonner & Lewis (1990); Frederick (1991); Hogarth (1991); Nelson (1992).

The relation between Knowledge and judgement, and memory in the group process.	Weber (1980); Libby (1981, 1983); Libby (1983); Birnberg & Shields (1984); Gibbins (1984); Waller & Felix (1984); Libby (1985); Frederick & Libby (1986); Abdolmohammadi & Wright (1987); Solomon (1987); Bedard (1989); Choo (1989); Davis & Solomon (1989); Libby (1989); Bonner & Lewis (1990); Bonner (1990); Libby & Trotman (1992).
Potential errors and inferiority of novices compared to experienced auditors.	Frederick & Libby (1986); Biggs, Mock, & Watkins (1988); Broderick (1988); Trotman & Yetton (1985); Trotman (1985); Bonner & Lewis (1990).
Prior involvement with accountability through participation in a previous year's audit.	Gibbins & Emby (1985); Ashton (1990), Johnson & Kaplan (1991); Tan (1991); Anderson, Kaplan, & Reckers (1992); Kennedy (1992).
Limits of motivation effects depend on the effort-sensitivity of the tasks.	Ashton & Ashton (1988); Asare (1989); Awasthi & Pratt (1990); Tubbs, Messier, & Knechel (1990); Messier & Tubbs (1990); Messier (1990); Tan (1991); Kennedy (1992); Libby & Lipe (1992); Luft (1992).
The literature review of Mock, Watkins, Caster, Pincus, & Edwards (1993)	
Independence, administration, reporting, and audit technology.	Smith & Krogstad (1988).

2.3. Analysis of 2000s topics

2.3.1. Partnership issues

Partnership issues are represented in several studies conducted during the millennium decade. The most prominent topics were the client's size, tenure and workload. The study of Carcello, Hermanson, and Huss (2000) aimed to establish a basis for an opinion concerning the impacts of partner compensation and the client size and structure. In auditing, this is the best

framework that sets out the most appropriate undertaking. The partner's tenure within an organization is essential for the workload, as help the partner to complete and offer voluntary services, in the same context some studies contributed significant theme such as the client's economic ability; Huddart and Liang (2003, 2005) further claim that the accounting partnership is essential in the auditing framework. The auditors have to form a strong partnership that will help them become effective in all their processes and undertakings. The form of partnership structure provides a framework that guides the auditing process and ensures that the right economic audit partner relationship is enhanced. Moreover, in partnership, there is another issue of the subject of the agency problem and partner rotation. A study by Bernardi and Arnold (2004) indicates that the managers and partners within an organizational framework should also work together. The results indicate that forming a partnership promotes the activities of an organization and ensures that partnership conflicts do not occur. The issues of agency are facilitated through such a partnership. Menon and Williams (2004) establish that the audit partners can provide effective results when they work together in coordinated relationships. This can be facilitated more preferably when partner rotation is considered (Li, 2009). Partner will be able to understand how different procedures are easily carried out. Besides, Naiker and Sharma (2009) state that audit partnership is necessary in understanding both internal and external auditing and will make sure that the process of conducting an audit is effective. Auditors will demand an effective system aimed at strong partner relationships to be able to escape several limitations that might come their way (Hay, Baskerville, & Qiu, 2007). Regulatory inspection is an excellent issue for the effectiveness of the partners' relationship. Moreover, Levin and Tadelis (2005) establish that profit sharing has become a great regulatory concern among partners. Most of the partners who work together are not in a position to effectively reach key milestones that exist (Messier, William, Owhoso, & Rakovski, 2008). They have laid down different frameworks that have affected their ability to overcome various undertakings (Vermeer, Rama, & Raghunandan, 2008). They have set up key strategic commitments that tap proper structural

undertakings which help organizations become efficient in the way they complete most of their processes. Li (2009) state that there is empirical evidence that exists from establishing concern opinions about the significance of partnerships within an organization, rather than working as individuals, thus, integration together as partners is an interesting experience that enables all individuals to be in the best position to overcome all odds and to be effective (Chen, Su, & Wu, 2009). Lately, another key has been the investigation of the experience factor, which can affect performance on tasks, as it is difficult for partners to share their expertise, thereby reducing interaction with clients (Vera-Munoz, Ho, & Chow, 2006). Specifically, some studies find that clients value partners who have major industry expertise and state that accounting restatements happen less often when partners have major industry expertise (Chin & Chi, 2009). As professionals, it is always best to have an organized framework that will guide the auditors and allow the formation of strong partnerships that will complete both internal and external audit projects without facing a lot of challenges. This is a great implementation that is necessary to effectively overcome various issues.

2.3.2. Group issues

In the 2000s, there were several studies that dealt with the issues of group work. The study of Fisher, Peffer, and Sprinkle (2003) underlines that the study of group productivity is useful, providing the right ways which help auditors. The study aims at establishing a practical group approach to productivity among different organizations. It sets out various undertakings that are necessary to ensure the right path has been used and expertly designed (King, 2002). Another topic has been addressed with an understanding of group diversity; there are different useful considerations to ensure the auditors understand every aspect of the organization (Kerr & Tindale, 2004). There are various aspects that this study considers, including conducting an experimental study of the self-serving performance of the group. According to Paulus, Nakui, Paulus, and Brown (2006), group dynamics are practical considerations that will make sure

the best possible highlights and frameworks of the group have been understood. Having a design that covers the group form and ensures that there is effectiveness and the right integration of the entire group prospects; which reflects positively on reviews. Group dynamics bring key anticipated frameworks that are essential in the whole process. Moreover, results by Van Knippenberg and Schippers (2007) indicate that workgroup dynamics are a practical approach that auditors have considered. This approach ensures that proper frameworks have been created under valuable considerations. When auditors work in groups, both internal and external audits become successful. Through clarity in the processes between the components of the groups that ensures proper evaluation and a clear decision. Another study by King (2002), who studies an experimental analysis of results obtained from the coordinated relationships of a group and other non-group coordination. Such undertakings are useful and give the best structural components and considerations. Another theme has emerged regarding the conflict among members characteristics. According to Bazerman, Curhan, Moore, and Valley (2000), who state that all identified individual differences among people are the factors from which conflicts in the workplace stem. However, it is these same unique traits among individuals that give birth to innovative approaches to problems such as the exceptional negotiating skills characteristic of different people, in consistency with earlier study by Hocker and Wilmot (1995). Consequently, the different formats in which groups exist either hinder or lubricate facets of effective and efficient organizational operations. Therefore, for an organization to realize its optimal output, it must be able to identify the unique individual traits of its employees and manipulate them favourably to incorporate its goals and policies.Another aspect that has been addressed is face-to-face interaction versus nominal brainstorming; according to Trotman (2005), brainstorming is part of fraud planning and identification. Having a group that undertakes brainstorming meetings will be helpful in identifying some forms of fraudulent activities. It is face-to-face interactions that help create alternatives for fraud detection within a group setting. There is an understanding of the

various issues and aspects that have greatly influenced how to look at the various elements and evidence that the group's work issues are vastly expanding.

2.3.3. Judgements and Decisions

Nelson, Elliott, and Tarpley (2002) focus their study on the specific characteristics of the different transactions being outlined in decision making. A successful audit is usually grounded in a properly structured and evaluative framework (Yip-Ow & Tan, 2000). The analysis done is essential for the way in which decisions are restructured (Bell & Carcello, 2000). Although auditor judgements are not in a way that would affect the entire audit process, instead, the decision made by the auditor should be effective, making sure that the right undertakings have been made. The different regulations outlined in auditing are baselines through which decisions ought to be made (Taylor, 2000). The judgement considered by any auditor should always be free from any form of bias. Bias places a significant limitation on effectiveness. The primary purpose of the study of Lowe, Reckers, and Whitecotton (2002) was to understand auditor decisions and the final judgements that auditors consider. The results obtained from the questionnaires in the study of Solomon and Trotman (2003) provide sufficient evidence showing how managers find the reporting standards. The standards of reporting are instrumental and determine the overall outcome of different highlights and frameworks. Nelson, Elliott, and Tarpley (2002) give evidence of the consequences of different decisions made by managers such as how managers opt to increase current-year income but the auditors are not willing to take up the increment, as 80% of the decisions made by the auditor are finalized with facts from the organization (Bell, Bedard, Johnstone, & Smith, 2002). The firm has to coordinate with different workers within the organization to be able to provide first-hand information. Such information is useful and ensures that the right decisions are adopted. Wrong choices always lead to incorrect results (Ballou, Earley, & Rich, 2004). Decisions are essential and set out the proper undertaking

through which dependence and effectiveness are sustained. According to Ng and Tan (2003), the effectiveness of the auditor's decisions depends on the guiding principles followed by the auditors. As these guides forms a great thought that highlights a practical understanding of the different frameworks that can give the best results sustainably (Ballou, Earley, & Rich, 2004). This is reflected in effective decision-making processes (Beattie, Fearnley, & Brandt, 2004). Another aspect that has been studiedis thematerial judgement characteristic of managerial decisions based on some determinants within the financial aspect of a firm in reporting choices made by organizations (Hronsky & Houghton, 2001). Factors not internal to the authoritative guidance have an influence on the method of correction chosen by management (Messier, Martinov-Bennie, & Eilifsen, 2005). As such, it goes without saying that the natures of outcomes of the corrective procedure selected vary and are influenced by independent factors not within the control of the authorized personnel. However, Gibbins, Salterio, and Webb (2001) stress that although quantitative and qualitative aspects are accountable for variations in firms' erroneous correction decisions, a significant role is played by other entities' previous actions. Consequently, these results portray the extraordinary nature of other companies external to an organization as well as the material considerations of the business in the type and relevance of the correction decision taken in all instances. These topics have been discussed by several authors (Beeler & Hunton, 2002; Kadous, Kennedy, & Peecher, 2003; Nelson, 2005; Trotman, Wright, & Wright, 2005; Nelson, Smith, & Palmrose 2005).

2.3.4. Audit interactions

A number of subtopics of the interaction issues were highlighted in 2000s where interactions between auditors and clients were a major issue. A study by Beattie, Fearnley and Brandt (2000) claimed that the main purpose of the study was to look at the interaction that exists between auditors and client. It forms an enormous undertaking through which different decisions are followed. The study aimed to know and understand the far-reaching impact that

audit interactions will have if done in the right way (Bell &Carcello, 2000). There should be a sustained interaction giving insights on various components that are used during the audit process. The interaction evaluates the possibility of fraudulent activities taking place (Kadous, 2000). Another study by Libby and Kinney (2000) claims that audit interaction is an effective process that brings facts into reality. Auditors are required to have an interactive path that exposes them to different ways of completing various functions in the right way. With a productive interaction, there will be minimal possibility of fraud. When the interaction is sustained in the right way, such considerations of fraud will not be recorded (Hronsky & Houghton, 2001). Communication is necessary to ensure that a better outline and effectiveness have been achieved in due course. The client–auditor interaction is a useful framework that ensures the right undertakings have been made and it is considered in a decision aid (Gibbins & Trotman, 2002). Without the right audit interaction process, the entire process will be greatly affected. There is a lack of a useful framework and considerations that make specific proper components. Moreover, the study of Earley (2001) estimates that knowledge acquisition is a first channel through which audit interactions are established. When the right knowledge has been transferred from one person to the other, a proper framework will be expertly designed (Trotman, Wright, & Wright, 2005). Out of 50 organizations, over 20 become effective in the way in which they consider the right audit interactions. The results show that auditors will seek to develop an effective interactive process that will ensure they have overcome essential challenges during the entire process of their auditing. An adequately structured audit requires an individual to be highly focused on the right undertakings and to ensure he or she is in the best possible channel to be effective. Lowe, Reckers, and Whitecotton (2002) stipulate that audit interactions help make the auditor's liability a thing of the past. It makes sure that appropriateness is sustained in the best possible approach for effectiveness. Joe (2003) states that in a one way or other; auditors are affected by the client. The client can influence the decisions that auditors consider in one way or another (Beattie, Fearnley, & Brandt, 2004). Since clients have control of many

activities, they take part in making a framework that can be used to develop a given audit decision.

2.3.5. Incentive effects

In the 2000s, different books identified the significance of incentives in organizations. A study by Bonner, Hastie, Sprinkle, and Young (2000) reviewed the effects of financial incentives on the success of an organization. Further results were obtained that indicated how management reporting incentives were of great value for an organization's reputation. Bonner and Sprinkle (2002) state that team-based incentives produced positive results, where 46% of team members being satisfied. The response was that 32.9% of the team preferred to work in groups rather than having individual incentives (Rankin, 2004). A similar study by Hunton and Beeler (2002) noted that incentives that were team-directed had a significant effect on the levels of performance of employees as compared to individually driven incentives. A study by Rankin (2004) summarized the motivations obtained from drivers with nonfinancial value, which include making the right decisions. Sometimes, the organization gains dominance through its option of not accepting wrong choices and opting for the best. As stipulated by other studies, monetary incentives, just like nonfinancial drivers, are needed in practical performance. Incentives play a significant role in ensuring everything is appropriate and in good shape and can compete on the basis of quality (Palmrose, 2006). The success established within an organizational framework depends on how incentives are considered. Incentives make employees want to continue working hard and improve the way in which they complete various undertakings. The results from a study conducted by Cheng and Warfield (2005) indicated that equity incentives stand to be the leader of change and transformation in most organizations. With earning management being a great determinant of equity, organizations strive to make sure that they offer equal incentives to all their workers. Thirty-nine percent of workers are satisfied with the way in which equity incentives are determined in most organizations (Bergstresser & Philippon, 2006). That implies that over

60% of employees are never content with the distribution of incentives within organizations. Most organizations need to look at different components that will ensure that they obtain the right anticipated framework in due course (Hodge, Hopkins, & Pratt, 2006). The incentives that they place on most of their operations should be able to effectively help solve most of the issues and concerns raised. An experimental analysis based on both team-based and individual incentives indicated that companies need to focus on establishing long-term incentives (Coles, Daniel, & Naveen, 2006). With long-term incentives, workers will have a great place where they can undertake most of their operations without encountering a lot of problems (Kelly, 2007). It is a great way through which various goals are effectively achieved in due course. The study indicates that incentives are like key drivers that determine the direction of an organization. Considering the complex work that accountants ought to play, it is important to have a well structure that would effectively help the process of incentive creation. In their book, Libby, Hunton, Tan, and Seybert (2008) state that it is the mandate of the organizational team to devise incentives that seek to help the process of a firm and ensure that effectiveness is sustained. As there is a need to determine the right proponents using the right speculative frameworks that will help the entire process to be effective, there is always a significant undertaking and structure through which the entire components about incentives. Notably, with the identification of what an employee holds dear regarding life achievements, proactive management can manipulate this to its advantage while reassess the organization's goals. Similarly, the results revealed that long-term tools and programmes yielded much greater gains for the entity than short-term incentive programmes. Regarding the matter of fees and their impact, various studies addressed this issue, indicating the relationship between audit fees and lack of auditing, which has a strong impact on the way of incentive (Frankel, Johnson, & Nelson, 2002; DeFond, Raghunandan, & Subramanyam, 2002; Kinney, Palmrose, & Scholz, 2004). All through the years, incentives stand to be important frameworks that should never be neglected, but appropriate channels and considerations should be made in due course. Another issue that has been discussed lately is that when the choice is between

financial schemes as a fixed payment or a tournament, some studies indicate that people are more likely to choose a tournament incentive if they are more productive, less risk-averse, and more hopeful (Niederle & Vesterlund, 2007; Eriksson, Teyssier, & Villeval, 2009).

Table 3. The experimental literature reviews of audit topics during the period of the 2000s with the authors

2000s	
The literature review of Nieschwietz, Schultz, & Zimbelman (2000)	
Audit environment, financial statement fraud/predictors, and risk assessment of fraud.	Fellingham & Newman (1985); Aobrcht & Romney (1986); Loebbecke, Einin, & Willingham (1989); Shibano (1990); Humphry, Mosry, & Turley (1993); Epstien & Geiger (1994); Winter & Sulvian (1994); Cushing, Graham, Palmrose, Roussey, & Solomon (1995); Bloomfield (1995); Zimbelman (1997).
Reliance on decision making.	Eining, Jones, & Loebbecke (1979); Arkes, Dawes, & Christensen (1986); Moeckel & Pei (1997).
The literature review of Libby, Bloomfield, & Nelson (2002)	
Supply and demand for experimental financial accounting research.	Lee Myers, Ou & Penman (1989); Hand (1990); Sloan (1996); Vincent (1997); Frankel & Lee (1998); Andrade (1999); Swaminathan (1999).
Risk and reward, knowledgeable decision makers.	Kahneman & Tversky (1979); Tetlock (1992).
Predict and behaviour	Tetlock (1992).
Knowledge, motivation, and users.	Kunda (1990); Libby & Luft (1993); Kinney & Martin (1994); Nelson & Kinney (1997); Salterio & Koonce (1997); Healy & Wahlen (1999); Nelson, Elliott, & Tarpley (2000); Libby & Kinney (2000); Mayhew, Schatzberg, & Sevcik (2000); Beeler & Hunton (2001); Wilks (2001).
Group decision process.	Yetton & Bottger (1982).
The literature review of Solomon & Trotman (2003)	
Audit judgement, decision making and team or group decisions.	Libby & Trotman (1993); Libby (1995); Messier (1995); Solomon & Shields (1995); Ismail & Trotman (1995); Yip-Ow & Tan (2000); Bloomfield, Libby, & Nelson (2001).

Knowledge and memory.	Libby & Tan (1994); Choo (1996); Bonner, Libby, & Nelson (1997); Ricchiute (1999).
Heuristics and biases.	Uecker & Kinney (1977); Holt (1987); Trotman & Sng (1989); Kaplan & Reckers (1989); Butt, Campbell (1989); Holt & Morrow (1992); Pei, Reed, & Koch (1992); Reimers & Butler (1992); Asare & Wright (1997); Bamber, Ramsay, & Tubbs (1997).
Judgement guidance and technology aids, monetary incentives for good performance.	Firth (1979); Nanni (1984); Blocher, Moffie, & Zmud (1986); Colbert (1988); Wright (1988); Harrell, Taylor, & Chewning (1989); Pincus (1989); Purvis (1989); Simnett (1996); Reneau &West (1989); Salterio (1996); Salterio & Koonce (1997); DeZoort (1998); Braun (2000).
The influence of individual difference factors (personality traits) on audit judgement and decisions**.**	Windsor & Ashkanasy (1995); Tsui & Gul (1996); Hull & Umansky (1997); Sweeney & Roberts (1997).
The literature review of Sprinkle (2003)	
Incentive-based contracts affect individual financial incentives and motivate individuals.	Baiman (1982); Young & Lewis (1995); Camerer & Hogarth (1999); Scott & Tiessen (1999); Bonner, Hastie, Sprinkle, & Young (2000); Zimmerman (2000); Bonner & Sprinkle (2001).
Employees make judgements and decisions based on the information (Innovations in information technology).	Feltham & Demski (1970); Demski (1972); Demski &Feltham (1976); Baiman (1982); Tiessen & Waterhouse (1983); Mauldin & Ruchala (1999).
Pay and performance including monitoring, measuring, evaluating, rewarding actions**.**	Groves (1973); Weitzman (1976); Groves & Loeb (1979); Zimmerman (1979, 2000); Waller & Chow (1985); Shields & Waller (1988); Waller (1988); Chow, Cooper, & Waller (1988); Waller & Bishop, (1990); Dillard & Fisher (1990); Chow, Cooper, & Haddad (1991); Chow, Hirst, & Shields (1994, 1995).
Hidden action (moral hazard).	Hopwood (1976).
Lack of cooperation.	Ross (1973); Jensen & Meckling (1976); Baiman (1982).

Quality of judgement and decision-making in managerial accounting, tasks, individual's skill level.	Shields (1980, 1983); Waller & Chow (1985); Iselin (1988); Shields, Chow, & Whittington (1989); Schiff & Hoffman (1996); Gupta & King (1997); Callahan & Gabriel (1998); Briers, Chow, Hwang, & Luckett (1999); Lipe & Salterio (2000, 2001); Luft & Shields (2001); Dearman & Shields (2001).
Militiaperson setting, multi-period and expertise issues: group settings are characterized by conflict among members.	Walton & McKersie (1965); Brehmer (1986); Castellan (1993); Hare, Blumberg, Davies, & Kent (1994); Hocker & Wilmot (1995); Cruz, Boster, & Rodriguez (1997); Winquist & Larson (1998); Lewicki, Saunders, & Minton (1999); Bazerman, Curhan, Moore, & Valley (2000).
The literature review of Nelson (2005)	
Audit and non-audit fees.	Frankel, Johnson, & Nelson (2002); DeFond, Raghunandan, & Subramanyam (2002); Kinney, Palmrose, & Scholz (2003).
Client size, adjustment materiality.	Wright & Wright (1997); Nelson, Elliott, & Tarpley (2002).
Effect of incentive.	Beeler & Hunton (2003).
Impacts of regulations.	Dopuch, King, & Schwartz (2001).
Negotiations between experienced auditors.	Tortman & Wright (2002).
The literature review of Nelson & Tam (2005)	
Risk assessments and audit planning.	While & Joyce (1976); Mock & Turner (1981); Cushing & Loebbecke (1983); Kinney (1983); Jiambalvo & Waller (1984); Libby, Artman, & Willingham (1985); Kaplan (1985); Bedard (1989); Brown & Solomon (1990,1991); Maletta & Kida (1993); Mock & Wright (1993); Waller (1993); Reimers & Wheller (1996); Dusenbury, Reimers, & Wheeler (1996); Bonner, Libby, & Nelson (1996); Zimbelman (1997); Gramling (1999); Messier & Austen (2000).

Analytical procedures.	Kinney & Uecker (1982); Biggs & Wild (1984); Butt (1988); Libby & Frederick (1990); Anderson, Kaplan, & Reckers (1992); Koonce (1993); Nelson (1993); Hirst (1994); Anderson et al (1994); Bernardi (1994); McDaniel & Kinney (1995); Anderson & Koonce (1995, 1998); Hirst & Koonce (1996); Asare & Wright (1997); Bell, Marrs, Solomon, & Thomas (1997); Wright (2001); Kotchetova (2004); Glover, Prawitt, & Wilks (2005).
Correction decisions.	Holstrum & Messier (1982); Farmer, Rittenberg, & Trompeter (1987); Hackenbrack & Nelson (1996); Salterio & Koonce (1997); Nelson & Kinney (1997); Beattie, Brandt, & Fearnley (1999); Libby & Kinney (2000); Braun (2001); Hronsky & Houghton (2001); Gibbins, Salterio, & Webb (2001); Nelson, Elliott, & Tarpley (2002, 2003); Beeler & Hunton (2002); Kadous, Kennedy, & Peecher (2003); Moore, Tetlock, Tanlu, & Bazerman (2003); Ng & Tan (2003);; Nelson (2004); Messier, Martinov, & Eilifsen (2005); Trotman, Wright, & Wright (2005); Nelson,Smith, & Palmrose (2005).
Judgements and opinion modification.	Libby (1979); Kida (1980); Mutchler (1984); Ashton & Ashton (1988); Lord (1992); Kennedy (1993); Biggs, Messier, & Hansen (1993); Tan (1995); Cushing & Ahlawat (1996); Mutchler, Hopwood, & McKeown (1997).Rosman, Seol, & Biggs (1999); Wilks (2002); Libby, Bloomfield, & Nelson (2002); Joe (2003).
Individual characteristics.	Libby (1981); Ashton (1982); Lightner (1982); Kelley & Margheim (1990); Bonner & Lewis (1990); Pincus (1990). Ho & Waymond (1993); Tan & Libby (1997); Tan & Kao (1999); Hyatt & Prawitt (2001).
Decision aids.	Einhorn (1972); Messier & Hansen (1987); Libby (1989); Pincus (1989); Simnett & Trotman (1989); Ashton (1990); Kachelmeier & Messier (1990); Messier (1995); Bamber, Watson, & Callahan-Hill (1996); Whitecotton (1996); Bonner, Libby, & Nelson (1996); Eining, Jones, & Loebbecke (1997); Bell & Carcello (2000); Messier, Kachelmeier, & Jensen (2001); Bryan-Low (2002); Lowe et al. (2002); Bell, Bedard, Johnstone, & Smith (2002); Nelson, Elliott, & Tarpley (2003).

Interpersonal interaction between auditors.	Tetlock (1983); Trotman (1985); Trotman & Yetton (1985); Solomon (1987); Johnson & Kaplan (1991); Lord (1992); Messier & Quilliam (1992); Kennedy (1993); Libby & Trotman (1993); Gibbins & Newton (1994); Ramsay (1994); Tan (1995); Koonce, Anderson, & Marchant (1995); Hunt (1995); Peecher (1996); Rich, Solomon, & Trotman (1997); Glover (1997); Kennedy et al. (1997); Rich, Solomon, & Trotman (1997); Bedard, Biggs, & Maroney (1998); Tan & Kao (1999); Ricchiute (1999); Yip-Ow & Tan (2000); Tan & Yip-Ow (2001);Turner (2001); Tan & Jamal (2001). Wilks (2002); Gibbins & Trotman (2002); Tan & Trotman (2003); Rich (2004); Jensen (2004); Brazel, Agoglia, & Hatfield (2004).
Auditor/client interactions.	Pany & Reckers (1984, 1987); Jennings et. (1987); Anderson, Lowe, & Reckers (1993); Ponemon (1995); Kinney & Nelson (1996); Kadous (2000); Libby & Kinney (2000); Beattie, Brandt, & Fearnley (2000); Gibbins, Salterio, & Webb (2001); King (2002), Lowe, Reckers, & Whitecotton (2002); Nelson et al. (2002, 2003); Ng & Tan (2003); Sanchez, Agoglia, & Hatfield (2004); Ricchiute (2004); Gibbins & Qu (2005); Trotman, Wright, & Wright (2005).
Auditor knowledge and expertise.	Ashton & Kramer (1980); Kramer (1980); Messier (1983); Krogstad, Ettenson, & Hanteau (1984); Wagner & Sternberg (1985); Biggs, Messier, & Hansen (1987); Bédard (1989); Bonner & Lewis (1990); Bonner & Pennington (1991); Smith & Kida (1991); Bédard & Chi (1993); Libby & Luft (1993); Bonner & Walker (1994); Ramsay (1994); Libby (1995); Libby (1995); Ashton, Tan, & Libby (1997); Kennedy & Peecher (1997); Wright & Wright (1997); Solomon et al. (1999); Taylor (2000); Earley (2001); Tan (2001); Owhoso, Messier, & Lynch (2002); Low (2004) .

Cognitive limitations.	Nisbett, Zukier, & Lemley (1981); Libby (1981); Reckers (1981); Jiambalvo & Wilner (1985); McDaniel (1990); Tubbs et al. (1990); Ashton (1991); Smith & Kida (1991); Reimers (1992); Hogarth & Einhorn (1992); Asare (1992); Hackenbrack (1992); Schultz & Reimers, Wheeler, & Dusenbury (1993); Kennedy (1993); Messier & Tubbs (1994); Amer, Hackenbrack, & Nelson (1994, 1995); Solomon & Shields (1995); Glover (1997); Hoffman & Patton (1997).
The literature review of Trotman (2005)	
Auditors' information, knowledge, expertise, individual characteristics, cognitive limitations.	Biggs & Mock (1983); Kida (1984); Ashton (1995); Libby (1995); Messier (1995); Solomon & Shields (1995).
Quality of auditors' judgements.	Ashton (1974); Nelson & Tan (2005).
Brunswik's lens framework to examine the prediction of corporate failure.	Libby (1975a, 1975b).
Between-auditor interactions.	Trotman (1985); Solomon (1987).
The literature review of Callahan, Gabrial, & Sainty (2006)	
The relationship between financial incentives and types of tasks.	Tucke & Matsumura (1998); Boneer, Hastile, Sprinkle, & Young (2000); Libby, Blomfield, & Nelson (2000); Boneer & Sprinkle (2002); Scharzberg (2005).
The issue of low balling and the moral hazard problem.	Deangelo (1981); Shartzberg (1990); Dopuch & King (1991), Kachelmier (1991); Calegri, Scharzberg, & Sevcik (1998).
Auditor independence.	Schatzberg, Sevick, & Shapior (1996); Zimbleman & Waller (1996); King (2002); Mayhew & Pike (2004).

2.4. Analysis of 2010s topics

2.4.1. Partnership issues

In this decade, partnership issues in auditing have continued to be studied by researchers. Bedard and Johnstone (2010) state that the aim of their study is to evaluate audit partner tenure, audit planning, and pricing strategies. The size of organization for partnership can effectively accommodate a great workload. For the effective formation of a partnership, there should be partners playing voluntary roles in due course. An effective audit procedure will always have a plan through which effective pricing strategies are discussed and highlighted (Daugherty, Dickins, Hatfield, & Higgs, 2012). With such considerations in mind, partner rotation is an effective approach that will ensure proper regulation of sanctions and inspections. As stated by Azizkhani, Monroe, and Shailer (2013), audit partner tenure is effective in determining the cost of equity. It lays down a sufficient undertaking and ensures that the right aspects have been considered in due course. Such highlights are effective in laying out an effective plan which will guide the auditors (Gold, Lindscheid, Pott, & Watrin, 2012). There is a need to look at the partner client relationship in order to measure the sustainability. Recently, other studies have investigated this relationship between the partner and the client's size, tenure, and workload (Bell, Causholli, & Knechel, 2015; Sundgren & Svanström, 2014; Goodwin & Wu, 2016).In addition, the client's economic issues are addressed by the audit partner, and it has been noted that the quality of the audit partner has the good consequences of the capital market (Aobdia, Lin, & Petacchi, 2015). When the partners take part in the audit, there will be a significant change, unlike when they are not sufficiently sharing the process. It is necessary for people to know and understand that the best alternatives will be chosen in the most appropriate manner that might affect the outlook of the audit (Carcello, & Li, 2013). When there is a coordinated relationship among all the partners, the audit will be effectively completed. The completion of the audit approaches will be sustained through the key audit considerations made. Amir, Kallunki, and Nilsson (2014) provide results that when the relationship between individual audit partners' risk preferences

and the composition of different portfolios are in place. It tends to bring significant changes that affect their entire components and anticipated framework in due course. Regulatory sanctions are required to be able to effectively overcome different components through the audit process. The partnership is a necessary audit procedure that directs the auditing process and ensures that the level of bias has been significantly reduced (Carcello & Santore, 2015). A framework that seeks to reduce the rate of audit risk is a great channel that ensures that proper considerations of the audit are completed with the level of precision they deserve. The issue of agency problems in partnerships has also continued in the current decade, with Guan, Su, Wu, and Yang (2016) reporting that there is an agency problem in partnerships and the partner relationship helping to identify. The overall results can be substantial through the level of audit precision placed on the various undertakings. It changes how people complete various undertakings, making sure that the proper set framework has been completed in due course. When completing a particular audit, it is through a partnership that information can be obtained easily (He, Pittman, & Rui, 2016). Without substantial partners, effectively transferring information from one channel to the other becomes a problem. Moreover, Christensen (2015) reports that even though the partnership is important, the most sustainable approach is to have a rotation for audits. With such a rotation, new ideas will be regenerated from one person to the next. Without such information, the form of audit disclosure is very important (Goodwin & Wu, 2016). Audit disclosure is an effective process that ensures that the right approach is considered in auditing. It is a key principle to have auditors who are structured and understand the best innate characteristics to become effective in their operations (Chen, Peng, Xue, Yang, & Ye, 2016). Many studies have been investigated in line with disclosure, audit partner rotation, regulatory inspections, and sanctions (King, Davis, & Mintchik, 2012; Lennox, Wu, & Zhang, 2014; Chen, Peng, Xue, Yang, & Ye, 2016; Carcello & Santore, 2015; Cianci, Houston, Montague, & Vogel, 2016). The mandatory partnership is useful as it opens other key paths that have been prevented from being effectively structured at the end.

2.4.2. Regulation impact

The effect of the regulations on auditing has been addressed in several respects but the framing has been notable in recent studies where the primary purpose of understanding regulation within an auditing framework is to know the reliability of the information obtained (Ng & Shankar, 2010). As stipulated by Cohen, Krishnamoorthy, and Wright (2010), corporate governance within an audit framework ensures that international auditing standards have been followed (Lambert & Agoglia, 2011). Without the right standards, an audit will not become active. There would be a number of limitations on the way in which different audits were considered. There is a need to come up with different measures and undertakings that ensure a proper audit framework has been created in line with the given frameworks. Having inappropriate frameworks is a significant limitation on the reliability of the audit. Results indicate that over 57% of audits are faced with the regulatory framework. Auditors who do not have the required regulatory papers practise without considering the international regulations provided (Hammersley, 2011). It is mandatory for the audits that are conducted to follow a specific framework that will ensure the effectiveness and reliability of the different information obtained. Results obtained by Schaefer (2014) show that different social costs and internal quality reviews are essential in setting out an excellent framework which will see through various undertakings and ensure that the right prospects have been laid down in the right approach (Nelson, Proell, & Randel, 2016). Without adequately structured and considered undertakings, the different effects and businesses will not be sustainably established (Westermann, Cohen, & Trompeter, 2014). There is a need to have a process through which effectiveness will be enhanced whenever there is an audit (Messier, Quick, & Vandervelde, 2014). Closing the loop, results indicate that an effective audit should follow the right provisions without having any form of manipulation (Centre for Audit Quality, 2014). With such considerations, there will be a sustained process through which various aspects are laid down in the right undertakings and the effectiveness of the given audit is sustained through an active process (Grenier, 2017). There are a number of issues that the

study identifies, including the different problems that audits have been faced with, trying to factor out the most appropriate approaches that have been sustainably working for the best of all policies and anticipations (Financial Reporting Council, 2013). As such, the research found that behavioural studies widened the literature by highlighting the essential unintended consequences as well as the collective efficacy of suggested regulations. However, lately, Cohen, Hayes, Krishnamurthy, Monroe, and Wright (2013) have clarified that unique specialized roles of particular regulations end up influencing managers' choices of unique financial management methodologies including both accrual and real based cases. Consequently, such involvement of employees is recorded to sustain productivity as well as yielding quality output.

2.4.3. Group issues

Several issues related to the group in this decade that is represented in the decision making, brainstorming, and comparison between the traditional and electronic methods. As the main purpose of their study, Stroebe, Nijstad and Rietzschel (2010) look at the rate of productivity completed by a group. When auditors work in coordinated groups, they become more effective in all their undertakings (Brewster, 2011). They will complete different components that ensure that the right anticipation is sustained in the process of auditing. The rewards system in a group is also very important is setting the right course of operations (Chen, Williamson, & Zhou, 2012). People will want a sustained group that will help them deliver more. The rate of delivery will always depend on the different components that are necessary in making sure the right undertaking has been completed. Without the right procedures, it becomes a problem to effectively overcome key that might affect the way in which the organization walks through its different activities (Bauer & Estep, 2014). The effects of judgements made by the auditor can be influenced by a group. The results from the study conducted by Kang, Trotman, and Trotman (2015) show that the decisions made within a group setting are very unreliable and can be misleading. It is mandatory for auditors to be

independent and to work on their own rather than in groups (Australian Securities & Investments Commission, 2014). Such a group is effective and will ensure that the most appropriate undertaking has been sustained through the entire process. The issue of brainstorming in the group has also received interest from researchers, as it is a method used before making a decision where the brainstorming session contain an interacting group member towards such tasks to involves idea generation (Hammersley, Bamber, & Carpenter, 2010). Moreover, several studies have also looked at alternative forms of review, where the method used is the traditional method of review that using work papers between members of group, while currently being used electronically even in the discussion stage (Payne, Ramsay, & Bamber, 2010), Moreover, another study has also suggested that electronic brainstorming among groups reduces risk opportunities through interactive assumptions among the team (Chen, Trotman, & Zhou, 2015). Furthermore, there have also been studies comparing the method of face to face interaction versus virtual brainstorming (Agoglia, Brazel, Hatfield, & Jackson, 2010). As the performance matter was compared before and after the review task during the discussion among a group of auditors (managers and junior). However, with one team, as suggested by Bauer and Estep (2015), it becomes hard to explore the relationship that exists between the auditors and IT specialist. There needs to be a sustained group that will be able to visualize all the possible interactions and ensure that the right procedures have been outlined. With such an undertaking, it is effective to design the right approach that ensures that the proper undertaking will be effective. Andiola and Bedard (2018) look at the outcome of the audit judgements developed within a group setting and a sustained individual opinion. The way in which auditors consider different factors ensures that the right anticipated framework is effectively designed in the best possible approach (Frank & Hoffman, 2015).

2.4.4. Independence

One of the issues raised recently in this decade is audit independence, an essential tool which ensures the reliability and appropriateness of the information gathered. As outlined by Agoglia, Brazel, Hatfield, and Jackson (2010), an audit workplace review is supportive of the independence of the audit. As the auditors suffering from the pressure that are obtained while detecting misstatements and balancing of client workloads. Therefore, the environment must be supportive of the concept of independence and avoid sources that have an impact on the auditor's opinion. Choose appropriate alternatives and take into account knowledge and important solutions help the whole process and ensure the adoption of the best approach. Kang (2014) states that audit committees are more challenging to deal with (Harding & Trotman, 2016). It is an independent auditing that can provide reliable information amid all claims to which firms are exposed. Furthermore, another result from the study of Huber and Lewis (2010) indicates that through examining the multidisciplinary aspects, auditors will have to consider the different approaches used and the effectiveness of the factors that have been outlined in due course. With such an anticipated framework, it becomes clear and useful to overcome the problem of independence (Dennis & Johnstone, 2014). Moreover, the study of Chen, Trotman, and Zhou (2015) makes it clear that auditor independence is a professional standard in auditing. It is a requirement for every auditor to be independent considering the most influential components and having the right procedures for competent professionalism. Maintaining and setting up a structured professional body is a useful undertaking and ensures that the right proponents have been outlined in due course (Kadous, Leiby, & Peecher, 2013). These few studies indicate that the subject is expanding and may be considered an indicator of new research trends.

2.4.5. Financial incentives (financial incentive schemes and behaviours)

Financial incentives are formulated with the aim of motivating employees and enhancing their performance levels in an organization. As such, there is a central concern by top managerial functions like planning departments to mutually satisfy both the business's goals and the employees. Some themes were outstanding, such as interact of work with both financial and recognition incentives and the effectiveness of relative performance feedback. A study by Blanes, Vidal, and Nossol (2011) indicates that such feedback can have a substantial positive effect on performance, which is consistent with another study by Azmat andIriberri (2010). Barankay (2012) reaches the conclusion that relative performance feedback can backfire. Likewise, findings vary widely across papers exploring the effect of recognition (Kosfeld & Neckermann, 2011; Ashraf, Bandiera, & Lee, 2014; Hammermann & Mohnen, 2014). The construction of compensation schemes for effort and performance has been addressed and is consistent with some studies by Price andSheremeta (2011, 2015) and Chowdhury, Sheremeta, and Turocy (2014). Financial incentives schemes have been significantly addressed in this decade. An experimental study was performed in which samples could select one of four payment systems, namely tournament, fixed payment, profit sharing, and rate cut. The results of the study showed that when a preference is indicated between a tournament and fixed payment, samples are more likely to choose a tournament scheme if they are more optimistic and productive (Dohmen & Falk, 2011). In spite of many advantages, some negative consequences may appear when tournament schemes are used in the workplace environment. Probably the most evident one is that tournament schemes create a major inequality of rewards. Thus, we find that many studies have focused on this type of financial scheme recently. Many studies have addressed the negative side of financial incentive schemes focusing on the tournament. One of the negative sides is the discouragement effect, which represents how a lower capability person often decreases his or effort when there is competition with a higher capability person(Coffey & Maloney, 2010; Kimbrough, Sheremeta, & Shields, 2014; Connelly, Tihanyi, Crook, & Gangloff, 2014;

Dechenaux, Kovenock, & Sheremeta, 2015; Llorente-Saguer, Sheremeta, & Szech, 2016). In addition to disincentive effects, tournaments might promote individual misbehaviour. In other experimental study by Schurr and Ritov (2016) claim that winning a competition leads to more deceptive behaviour. Moreover, other studies indicate that when subjects use tournament incentive schemes, they find some way to collude by making low efforts (Cason, Sheremeta, & Zhang, 2012; Kimbrough & Sheremeta, 2013, 2014). The findings of a similar study by Gill and Prowse (2012) indicate that tournaments create substantial disincentive effects when individuals are of mixed abilities. On another theme, the gender comparison was discussed in relationship to financial incentive schemes; a study found proof that women are less likely to participate particularly in tournament schemes than men, and regarding the achievement, women do not perform as well as men in tournaments (Niederle & Vesterlund, 2011). However some studies demonstrate that women may manage to be even more competitive than men in tournaments (Price & Sheremeta, 2011; Mago, Sheremeta, & Yates, 2013). It seems that financial incentive issues are expanding in the current decade, signalling that there is a trend among researchers regarding financial incentive schemes and behaviour.

Table 4. The experimental literature reviews of audit topics during the period of the 2010s with the authors

2010s	
The literature review of Messier (2010)	
Assessing business risks.	Ballou, Earley, & Rich (2004); O'Donnell & Schultz (2005); Choy & King (2005); Curtis & Turley (2007); Kochetova & Messier (2010).
Experts/specialists (IT and fraud).	First, Brazel, & Agoglia (2007); Boritz et al. (2010).
Analytical procedures and internal audits.	Hirst & Koonce (1996); Gramling, Maletta, Schneider, & Church (2004); Cohen, Gaynor, Krishnamoorthy & Wright (2007).
Fraud brainstorming.	Carpenter (2007); Hoffman & Zimbelman (2009); Lynch, Murthy, & Engle (2009); Hunton & Gold (2010); Brazel, & Carpenter (2010).

Task level.	Kinney (2005); Nelson & Tan (2005); Blokdijk, Drieenhuizen, Simunic, & Stein (2006).
Completing the audit, evaluation of results, and issuing an audit report.	Nelson & Tan (2005); Schneider & Messier (2007); Asare & Wright (2009); Gold, Gronewold, & Pott (2009); Mock, Turner, Gray, & Coram (2009).
Professional scepticism.	Nelson (2009).
The literature review of Trotman, Tan, & Ang (2011)	
Policies and a person's judgements.	Ashton (1974); Joyce (1976); Trotman (1996); Trotman (1996); Ashton (2010).
Judgements on materiality.	Boatsman & Robertson (1974); Ward (1976); Hofstedt & Hughes (1977); Newton (1977); Firth (1979); Moriarity & Barron (1976, 1979).
The perception of independence and performance.	Shockley (1981); Wright (1982); Messier (1983); Danos & Imhoff (1983); Schneider (1984); Kaplan & Reckers (1985); Hirst (1989); Luckett & Heiman (1990); Heiman (1990); Koonce (1992); Libby & Luft (1993); Kadous (2000); Peecher & Piercey (2008).
Inherent risk, errors, and hypotheses.	Libby (1985); Colbert (1988); Libby & Frederick (1990); Heiman (1990); Bedard & Biggs (1991); Koonce (1992); McMillan & White (1993); Nelson (1993); Koonce (1993); Hirst (1994); Heiman-Hoffman et al. (1995); Asare & Wright (1997); Brown et al. (1999); Bell, Peecher, & Solomon (2005); Peecher, Schwartz, & Solomon (2007); Knechel (2007); Moreno, & Brandon (2007).
Fraud – brainstorming and group.	Pincus (1989); Hackenbrack (1992); Berryman (1995); Hoffman & Patton (1997); Jamal, Johnson, & Zimbelman (1997); Carpenter (2007); Hoffman & Zimbelman (2009); Trotman, Simnett, & Khalfia (2009); Lynch, Murthy, & Engle (2009); Hunton & Gold (2010).
Experts, experiences.	Weber (1980); Libby (1981, 1983); Birnberg & Shields (1984); Gibbins (1984); Waller & Felix (1984); Libby (1989); Simnett & Trotman (1989); Bonner (1990); Libby & Frederick (1990); Bonner & Lewis (1990); Moeckel (1990); Bedard (1991); Frederick (1991).

Internal audit function and reliance on internal auditing.	Abdel-khalik, Snowball, & Wragge (1983); Schneider (1984); Schneider (1984, 1985); Maletta (1993); Kida (1993); Bhattacharjee, Maletta, & Moreno (2007); Glove, Prawitt, & Wood (2008).
Heuristic trend.	Joyce & Biddle (1981); Kinney & Uecker (1982); Bamber (1983); Kida (1984); Biggs & Wild (1985); Butler (1986); Cohen & Kida (1989).
Analytical reviews and process.	Cohen & Kida (1989); Kennedy (1993); Ramsay (1994); Ismail & Trotman (1995); Tan (1995); Asare & McDaniel (1996); Bamber & Ramsay (1997); Kennedy & Peecher (1997); Sprinkle & Tubbs (1998); Phillips (1999); Ricchiute (1999).
Group and individual decision making – decision aids.	Joyce (1976); Schultz & Reckers (1981); Solomon (1982); Abdel-khalik et al. (1983); Bamber (1983); Trotman (1985); Trotman & Yetton (1985); Butler (1985); Bamber & Snowball (1988); Libby & Libby (1989); Kachelmeier & Messier (1990); Ashton (1990).
Different interpersonal relationships.	Trotman & Yetton (1985); Ramsay (1994); Bamber & Ramsay (1997); Kennedy & Peecher (1997); Yip-Ow & Tan (2000); Jamal & Tan (2001); Turner (2001); Messier & Lynch (2002); Kadous, Kennedy, & Peecher (2003); Agoglia, Kida, & Hanno (2003); Tan & Trotman (2003); Rich (2004); Brazel, Agoglia, & Hatfield (2004); Nelson & Tan (2005); Shankar & Tan (2006); Owhoso, Messier, Owhoso, & Rakovski (2008).
Tasks, time pressure, accuracy, incentives.	Kida (1980); Ashton (1985); Libby & Libby (1989); Simnett & Trotman (1989); McDaniel (1990); Libby & Lipe (1992); Hirst (1994); Tan (1995); Hackenbrack & Nelson (1996); Simnett (1996); Glover (1997); Nelson & Kinney (1997); Brown, Peecher, & Solomon (1999).
Negotiations between auditors and management – auditors' acceptance of client preferred.	Salterio & Koonce (1997); Gibbins, Salterio, & Webb (2001); Ng & Tan (2003); Kadous, Kennedy, & Peecher (2003). Trotman, Wright, & Wright (2005); Sanchez, Agoglia, & Hatfield (2007); Bame-Aldred & Kida (2007); Rose (2008); Hatfield, Agoglia, & Sanchez (2008).

Knowledge and memory studies – knowledge of financial statement errors.	Weber (1980); Plumlee (1985); Moeckel & Plumlee (1989); Moeckel (1990); Libby & Frederick (1990); Ashton (1991); Trotman (1991); Brown & Solomon (1991); Tubbs & Nelson (1993); Libby & Luft (1993); Libby & Tan (1994); Later & Libby (1995); Nelson (1995); Kennedy & Peecher (1997); Solomon, Shields, & Whittington (1999); Ricchiute (1999); Wilks (2002); Hoffman, Joe, & Moser (2003); Joe & Vandervelde (2007); Earley, Hoffman, & Joe (2008).
The literature review of Bame-Alderd, Brandon, Messier, Rittenberg, & Stefaniak (2013)	
Audit committee and management characteristics affect external auditors' perceptions of the internal audit function.	Gray & Hunton (2011).
Performance of in-house versus outsourced internal auditors.	Ahlawat & Lowe (2004).
Auditor litigation risk.	Arel (2010); Munro & Stewart (2011).
Implications of internal audit function providing non-audit services.	Brandon (2010).
The effect of internal audit function on the external audit quality.	Glover, Prawitt, & Wood (2008); Desai, Gerard, & Tripathy (2011).
The effects of the client on the control evaluations of internal (external) auditors.	Stefaniak, Houston, & Cornell (2012).
The literature review of Peecher, Solomon, & Trotman (2013)	
Control system, task performance, employee satisfaction, and interaction of manager.	Dye (1985); Jung & Kwon (1988); Heiman-Hoffman & Rau (1994); Young (2002); Buchheit (2004).

Individual and group levels and collaboration.	Schatszberg, Sevcik, & Shaprio (1996); Zimbleman & Waller (1999); King (2002); King, Schwartz (2003); Mayhew & Pike (2004); Davis & Hollie (2005); Choy & King (2006). Peecher, Piercey, Rich, & Tubbs (2010); Bennett & Hatfield (2013), Chen, Trotman, & Zhou (2013).
Explicit and implicit rules with monetary incentives (earnings management,group incentives, and quality of performance).	DeAngelo (1981); Dejong, Forsythe, & Uecker (1985); Shibano (1990); Magee & Tseng (1990); Dopuch & King (1991); Kachelmeier (1991); Blomfield (1997); Dark, Haka, & Ravenscroft (1999); Bloomfield, Libby, & Nelson (1999). Kachelmeier & King (2002); Smith (2003); Mastumura & Subramanyam (2003); Schantzberg, Sevcik, Shapiro, & Thorne (2005); Pinello & Dusenbury (2005).
Disclosure of conflicts of interest of experts impact investors' decisions, tax policies on investment decisions**.**	Davis & Swenson (1993); Hill & Murphy (1995); Cain, Loewenstein, & Moore (2005); Ackert, Martinez-Vazques, & Rider (2005); Cain, Loewenstein, & Moore (2005).
Behaviour: justice, fairness, trusts and honesty in budgeting settings.	Dopuch & King (1992); Dopuch, King, & Schatzberg (1994); Evans, Krishnan, & Hannon (2001); Yu (2001); Smith (2003); Cain, Lowenstein, & Moore (2005); Nickeas, Rankin, & Schwartz (2005).
Scepticism.	Messier, Martinov-Bennie, & Eilifsen (2005); Nelson (2009); Harding & Trotman (2013); Grenier (2013).
Fraud risk.	Suedfeld, Tetlock, & Streufert (1992); Bell, Peecher, & Solomon (2005); Guler, Heron, & Zur (2010); Reffett (2010); Dyck, Morse, & Zingales (2010); Beasley, Carcello, Hermanson, & Neal (2010); Dyck, Morse, & Zingales (2011); Hammersley (2011); Trotman & Wright (2012); Grenier (2013); Kadous, Leiby, & Peecher (2013); Chen, Trotman, & Zhou (2013); Harding, & Trotman (2013).
The literature review of Maksymov (2015)	
Determinants of credibility.	Kennedy & Peecher (1997); Messier et al. (2008); Harding & Trotman (2009); Tan & Shankar (2010); Han, Jamal, & Tan (2011); Kadous, Leiby, & Peecher (2013).

Determinants of competence and trustworthiness; evaluation of client managers.	Joyce & Biddle (1981); Danos & Imhoff (1982); Anderson & Marchant (1989); Wing, Reneau, & West (1989); Bernardi (1994); McKinley, Ponemon, & Schick (1996); Jenkins & Haynes (2003).
Determinants of competence and trustworthiness; evaluation of other auditors.	Bamber (1983); Brown (1983); Schneider (1984); Schneider (1985); Margheim (1986); Messier & Schneider (1988); Maletta (1993); Maletta & Kida (1993); Caster & Pincus (1996); Tan &Jamal (2001); Krishnamoorthy (2002); Glover, Prawitt, & Wood (2008); Desai, Gerard, & Tripathy (2011); Messier, Reynolds, Simon, & Wood (2011); Kadous, Leiby, & Peecher (2013).
Consequences of competence evaluation of client managers.	Joyce & Biddle (1981); Danos & Imhoff (1982); Danos & Imhoff (1983); Rebele, Heintz, & Briden (1988); Knechel & Messier (1990); Anderson, Koonce, & Marchant (1994); Haynes (1999); Jenkins & Haynes (2003).
Trustworthiness: manager and auditor.	Abdel-Khalik, Snowball, & Wragge (1983); Reimers & Fennema (1999); Goodwin (1999); Haynes (1999); Peterson & Wong-on-Wing (2000); Dezoort, Houston, & Peters (2001).
The literature review of Trotman, Bauer, & Humphreys (2015)	
Fraud brainstorming.	Carpenter (2007); Lynch, Murthy, & Engle (2009); Agoglia et al. (2009); Payne et al. (2010); Stroebe, Nijstad, & Rietzschel (2010); Hammersley (2011); Chen, Trotman, and Zhou (2015).
Regulation effects.	Hackenbrack & Nelson (1996); Libby & Seybert (2009); Cohen, Krishnamoorthy, & Wright (2010); Cohen, Hayes, Krishnamoorthy, Monroe, & Wright (2013).
Group audit judgement, face-to-face interaction versus nominal brainstorming.	Osborn (1957); Klein (1999); Kerr & Tindale (2004); Carpenter (2007); Bellovary & Johnstone (2007); Trotman, Simnett, & Khalifa (2009); Hoffman & Zimbelman (2009); Lynch, Murthy, & Engle (2009); Hammersley, Bamber, & Carpenter (2010); Brazel, Hatfield & Jackson(2010); Agoglia, Brazel, Hatfield, & Jackson (2010).
Electronic brainstorming.	Dennis & Valacich (1993); Guzzo & Dickson (1996); Pinsonneault, Barki, Gallupe, & Hoppen (1999); Kerr & Tindale (2004); Lynch, Murthy, & Engle (2009). Chen, Trotman, & Zhou (2015).

Consultation within firms.	Emby & Gibbins (1988); Salterio (1996); Kennedy, Kleinmuntz, & Peecher (1997); Salterio & Koonce (1997); Asare & Wright (2004); Ng & Shankar (2010); Ranzilla, Chevalier, & Herrmann (2011); Glove & Prawitt (2011); Gold, Gronewold, & Salterio (2012); Kadous, Leiby, & Peecher (2013); Nelson, Proell, & Randel (2014); Schaefer (2014); Bauer, Hillison, Peecher, & Pomeroy (2015).
Review process.	Joce (1976); Libby & lewis (1977); Mock & Turner (1979); Schultz & Reckers (1981); Solomon (1982); Tortman, Yetton, & Zimmer (1983); Bamber (1983); Tortman & Yetto (1985); Borit (1985); Bamber & Bylinski (1987); Libby & Blashfield (1987); Johnson & Kaplan (1991); Libby & Torman (1993); Kennedy (1993); Ramsay (1994); Messier & Tubbos (1994); Koonce, Anderson, & Marchant (1995); Tan (1995); Ismail & Tortman (1995); Asare & McDaniel (1996); Bamber & Ramsay (1997); Rich, Solomon, & Trotman (1997); Sprinkle & Tubbs (1998); Phillips (1999); Ricchiute (1999); Bamber & Ramsay (2000); Tan & Jamal (2001); Tan & Yip-Ow (2001); Owhoso, Messier, & Lynch (2002); Gibbins & Tortman (2002); Wilks (2002); Agoglia, Kida, & Hanno (2003); Brazel, Agoglia, & Hatfield (2004); Shankar & Tan (2006); Tan & Tan (2008); Agoglia, Hatfield, & Brazel (2009); Payne, Ramsay, & Bamber (2010); Agoglia, Brazel, Hatfield, & Jackson (2010); Peecher, Piercey, Rich, & Tubbs (2010); Lambert & Agoglia (2011); Peecher, Solomon, & Trotman (2013); Messier, Quick, & Vandervelde (2014); Gronewold & Salterio (2014); Frank & Hoffman (2015).

Financial reporting regulation rules versus principles.	Nelson, Elliott, & Tarpley (2002); Schipper (2003); Nelson (2003); Jackson (2008); Segovia, Arnold, & Sutton (2009); Jamal & Tan (2010); Seybert (2010); Agoglia, Doupnik, & Tsakumis (2011); McEnroe, Kadous & Mercer (2012); Sullivan (2013); Quick (2013); Cohen, Krishnamoorthy, Peytcheva, & Wright (2013); Asay, Brown, Nelson, & Wilks (2013);Libby & Brown (2013); Wang & Tan (2013); Jackson, Keune, & Salzsieder (2013); Peytcheva, Wright, & Majoor (2014); Backof, Bamber, & Carpenter (2014); Messier, Quick, & Vandervelde (2014); Majors (2014); Griffin (2014); Libby & Emett (2014); Clor-Proell & Maines (2014); Majors (2014); Brink, Gouldman, & Rose (2014); Rennekamp, Rupar, & Seybert (2015).
Audit committee independence and accountability.	Agoglia, Brazel, Hatfield, & Jackson (2010); Payne, Ramsay, & Bamber (2010); Peecher, Solomon, & Trotman (2013); Kadous, Leiby, & Peecher (2013); Kang (2014); Harding & Trotman (2014); Ekasingh (2014); Dennis & Johnstone (2014); Church, Jenkins, McCracken, Roush, & Stanley (2014); Chen, Trotman, & Zhou (2015).
Effects of corporate governance regulations on auditors.	Libby & Kinney (2000); Ng & Tan (2003); Libby & Seybert (2009); Cohen, Krishnamurthy, Hoitash, & Wright (2013); Dichev, Graham, Harvey, & Rajgopal (2013).
Group judgement.	Trotman (1985); Owhoso, Messier, & Lynch (2002); Tan & Tan (2008); Peecher, Piercey, Rich, & Tubbs (2010); Hammersley, Bamber, & Carpenter (2010); Frank & Hoffman (2015).
Audit team.	Bantel & Jackson (1989); Cannon-Bowers et al. (1993); Guzzo & Dickson (1996); O'Reilly (1998); Williams & O'Reilly (1998); Mathieu, Heffner, Goodwin, Salas, & Cannon-Bowers (2000); Mohammed & Dumville (2001); Marks, Sabella, Burke, & Zaccaro (2002); Bell, Peecher, & Solomon (2002); van Knippenberg, De Dreu, & Homan (2004); Ilgen et al. (2005); Ilgen, Hollenbeck, Johnson, & Jundt (2005); Kellermanns, Floyd, Pearson, & Spencer (2008); Trotman et al. (2009); Huber & Lewis (2010); Hammersley (2011); Haerkens, Jenkins, & van der Hoeven (2012); Bauer & Estep (2014); Dennis & Johnstone (2014); Chen et al. (2015); Trotman & Trotman (2015); Bauer & Estep (2015).

The literature review of Sheremeta (2016)	
Financial incentives & behaviour.	Schotter & Weigelt (1992); Davis & Reilly (1998); Lynch & Zax (2000); Moldovanu & Sela (2001); Preston & Szymanski (2003); Taylor (2006); Niederle & Vesterlund (2007); Fonseca (2009); Konrad (2009); Eriksson, Teyssier, & Villeval (2009); Strassmair (2009); Croson & Gneezy (2009); Schwieren & Weichselbaumer (2010); Sheremeta & Zhang (2010); Coffey & Maloney (2010); Sheremeta (2010); Carpenter, Matthews, & Schirm (2010); Müller & Schotter (2010); Sheremeta (2011); Sutter, Niederle, & Vesterlund (2011); Kosfeld & Neckermann (2011); Brown (2011); Van Noorden (2011); Harbring & Irlenbusch (2011); Dohmen & Falk (2011); Agranov & Tergiman (2012); Balafoutas & Sutter (2012); Price & Sheremeta (2011, 2015); Gill & Prowse (2012); Cason, Sheremeta, & Zhang (2012); Sheremeta (2013); Cason, Masters, & Sheremeta (2013); Shupp et al. (2013); Kimbrough & Sheremeta (2013, 2014); Cason, Masters, &Sheremeta (2013); Tihanyi, Crook, & Gangloff (2014); Kimbrough, Sheremeta, & Shields (2014); Chowdhury et al. (2014); Heffernan (2014); Kimbrough, Rubin, Sheremeta, & Shields (2014, 2015); Chowdhury & Gürtler (2015); Dechenaux, Kovenock, & Sheremeta (2015); Al-Ubaydli, Andersen, Gneezy, & List (2015); Rubin, Samek, & Sheremeta (2016); Llorente-Saguer, Sheremeta, & Szech (2016); Schurr & Ritov (2016); Mago & Sheremeta (2016); Vojnovic (2016); Rubin & Sheremeta (2016).
The literature review of Lennox, Wang, & Wu (2017)	
Agency problems in partnerships.	Alchian & Demset (1972); Gilson & Mnookin (1985); Balachandran & Ramakrishnan (1987); Greenwood, Hining, & Brown (1990); Miller (1992); Kandel & Lazear (1992); Narayanan (1995); Bazerman et al. (1997); Burrows & Black (1998); Huddart & Liang (2003, 2005); Levin & Tadelis (2005); Liu & Simunic (2005); Bedard, Deis, & Curtis (2008); Jenkins, Deis, & Bedard (2008); Causholli & Knechel (2012); Aobdia (2016).

Partners' innate characteristics, clients economic and audit partner (client's size, tenure, and workload).	DeAngelo (1981); Gilson & Mnookin (1985); Reynolds & Francis (2001); Craswell, Stokes, & Laughton (2002); Raghunandan (2002); Myers, Myers, & Omer (2003); Huddart & Liang (2003); Chung & Kallapur (2003); Carey & Simnett (2006); Chen, Lin, & Lin (2008); Li (2009); Chen, Su, & Wu (2010); Ye, Carson & Simnett (2011); Chi, Douthett, & Lisic (2012); Sundgren & Svanström (2014); Geiger & Bell, Causholli, & Knechel (2015); Goodwin & Wu (2016).
Professional and personal relations between clients, audit partners' operations.	Menon & Williams (2004); Lennox (2005); Levin & Tadelis (2005); Blouin, Grein, & Rountree (2007); Chen, Su, & Wu. (2009); Su, & Wu (2016); Firth, Rui, & Wu (2012); Wu (2016); Guan, Su, Wu, & Yang (2016).
Partner compensation and partner heterogeneities.	Trompeter (1994); Burrows & Black (1998); Carcello & Neal (2000); Bertrand & Schoar (2003); Hay, Baskerville, & Qiu (2007); Taylor (2011); Gul, Wu, & Yang (2013); Knechel, Niemi, & Zerni (2013); Francis & Michas (2013); Aobdia, Lin, & Petacchi (2015); Knechel, Vanstraelen, & Zerni (2015); Dekeyser, Gaeremynck, Knechel, & Willekense (2016); Cameran, Campa, & Francis (2016); Li, Tian, & Zhang (2016).
Partners' personal characteristics.	Meyers-Levy (1986); Bonner & Lewis (1990); Pratt & Beaulieu (1992); Vera-Muñoz, Ho & Chow (2006); Chin & Chi (2009), Chi & Chin (2011); Zerni (2012), Ittonen, Vahamaa, & Vahamaa (2013); Marquis & Tilcsik (2013); Mir, Kallunki, & Nilsson (2014); Goodwin & Wu (2014); Bell, Causholli, & Knechel (2015); Schoar & Zuo (2016a, 2016b); He, Pattman, & Rui (2016); Cameran, Campa, & Francias (2016); Aobdia, Siddiqui, & Vinelli (2016); Aobdia (2016), Mowchan (2016).

Disclosure, partner rotation, regulatory inspections, and sanctions.	Wilson & Grimlund (1990); Maister (1993); Beattie, Brandt, & Fearnley (2000); Gibbins, Salterio, & Webb (2001); Chi, Huang, Liao, & Xie (2009); Bedard & Johnstone (2010); Carcello, Hollingsworth, & Mastrolia (2011); Gramling (2011); Houston & Stefaniak (2012); King, Davis, & Mintchik (2012); Carcello & Li (2013); Litt, Sharma, Sjimpson, & Tanyi (2014); Lennox, Wu, & Zhang (2014); Qi, Robin, & Yang (2015); Carcello & Santore (2015); Cianci, Houston, Montague, & Vogel (2016); Stewart, Kent, & Routledge (2016); Sharma, Tanyi, & Litt (2016); Laurion, Lawrence, & Ryans (2016); Christensen (2016); DeFond & Lennox (2016); Su & Wu (2016); Chen, Peng, Yang, & Ye (2016).

3. The evolution of the most prominent topics in audit through the last four decades

There are many issues facing the internal and external auditing mechanism. These themes include professional problems of efficiency or lack of efficiency, obtaining appropriate training or knowledge with the latest auditing methods, and obtaining practical experience through the practice of companies or audit offices. Additionally, there are issues around moral problems, meaning the use of unethical practices, as well as the influence of references on one's colleagues and vice versa, and the overlap between specializations. Moreover, these themes are closely related to work within establishments from working in a team or the atmosphere of work and its surrounding cooperation to matters related to regulations and policies that include updates and keeping abreast of developments such as technology and data management. Furthermore, the matters can be expanded when addressing issues of financial incentives, behavior, and independence. Another issue addresses the risk matters arising from lack of professional care; these may involve issues of compensation or penalties incurred by the auditor as a result of improper practices from the management of the establishment or its partners so that they are jointly responsible for any errors, practices, fraud, or any illegal acts. In the last four decades, a significant amount of research has been directed towards different aspects of the audit. Based on the criteria we have taken in our

study of the literature on issues that have touched audit topics within four decades. These were based on an experimental approach, as 21 experimental literature reviews were employed. During this process, we have classified the audit issues used in studies over the last four decades. Our initial investigation covered 17 issues on the subject of audit; Figure 1 shows a diagram with the number of those issues per decade. In light of this, our study investigates the evolution of prominent topics in audit during the last decade. These topics reflected researchers' interests to which they dedicated considerable effort and include financial incentives, group issues, fraud, partnership, and the impact of regulations. The study identified that each selected subject has experienced significant changes across a number of issues during the four-decade period from the 1980s to the 2010s. The five topics were chosen because of studies of substantial quality and quantity that cover each of the topics during this time frame. Therefore, the current study involved analyzing the growth of these subjects and the extent to which these studies have been carried out in specific eras, from the 1980s until now. A review of these prominent issues can help identify key trends in auditing, providing scholars with guidance on areas that require further research.

3.1. Financial incentives

Financial incentives are an effective stimulant for human productive energy; they act as an inducement or supplemental reward that serves to trigger the desired action. Motivation is highly necessary, especially in workplaces where it is tough to get subordinates or workers to do anything extra for you, apart from their core responsibilities in their job. The vast majority of people presume that financial incentives improve performance. The purpose of financial incentives is to reward employees for excellent job performance through money. Research shows that desired monetary incentives differ for employees based on career stage and generation. Managers and employers have come up with various ways to motivate people at work to strengthen themselves and their profit margin. It is believed that when people are paid well enough to do something, we can probably have a degree of confidence that the job

will be well done. Therefore, it is important that managers motivate their employees to achieve the highest output in their organization by giving them valuable incentives, especially when they succeed in reaching set targets or breaking records. Over the past years, various topics have been explored about financial incentives. Many writers have tried to express their work in different versions from 1982 to 2017. This literature review will discuss different work done on financial incentives by various authors and how it has evolved over 35 years. The review will show the authors' aims and discuss their findings. Monetary incentives motivate employees to take their commitments to the next level. The aim of this research is to elucidate the financial incentives issues in auditing.

3.1.1. First period (1980s)

The questions that are required in developing key financial incentives and effective channels are the basis of understanding how organizations operate (Roth & Murnighan, 1982). The results showed that a number of managerial accounting firms need their workers to respond to opportunities positively (Baiman, 1982). We evaluated the fact that incentives are great learning tools that generate key topics into the framework and ensure that correct principles are followed. Studies on financial incentives from the 1980s showed how differences in the business sphere could be used to tap into the effectiveness of business operations (Grossman & Hart, 1982). The evaluations are similar to the types of decisions made which directly influence financial accounting in different ways (Roth & Murnighan, 1982). The questions that were raised are necessary in the development of critical incentives and channels that provide different motivations for effective frameworks of accounting proponents. Baiman (1982) reported that for most parts of financial incentives, workers have to act opportunistically to ensure that key opportunities are effectively completed. The article raised clear questions that help solve complex issues of the agency problem using the best approaches. Different studies have addressed the relationship between incentive and performance. A study by Riedel, Nebeker, and Cooper (1988) stated that individual object

and commitment are partially linked to the effects of incentive pay on performance. Various incentives based on performance appear to improve the initial performance of the task but not the subsequent improvement rate. Results from Holmstrom and Milgrom (1987) indicated that a performance-based incentive improves initial work performance, but it keeps declining gradually over time. A study by Sklivas (1987) concluded that financial incentives are key principles for greater performance. Motivation, as the psychological component of improvement, adds value to the entire process (Shields & Waller, 1988).Because motivation is a basic psychological process, mistrust results in particular when incentives are withheld, resources are allocated inconsistently, and employees have limited support from management. When workers are not assured of the company's trust regarding incentives, they tend to get demotivated; however, when workers believe that the company's actions will benefit them, they can have confidence in the words and actions of other people (Harrell, Taylor, &Chewning, 1989).

3.1.2. Second period (1990s)

Findings by Dillard and Fisher (1990) also suggested that improvement peaks earlier for performance-based incentives. The study found that improvement lasts a little longer, and there were better overall results with a high number and incentives than with a low number, implying that incentives that impose a higher risk on workers reduce motivation and lower performance among workers across different jobs. Some different studies have concluded that efforts and cognitive process comprise the main pillar in determining the course of financial progress (Libby &Lipe, 1992; Itoh, 1991). On the other hand, a study by Ashton (1990) provided a major summary of the different incentives that have been considered to ultimately change the shape as it appears in financial management. And it is consistent with a study by Kreps (1997) showing that various incentives were significant pillars of performance necessary for an effective financial plan. The financial incentives identified were proponents that ensured the right aspects had been ascertained and effectively completed. Every audit

procedure should first have a look at the financial incentives employed to align themselves with the right principles. From the completed studies, the various aspects were sampled with the studies of Sayre, Rankin, and Fargher (1998), bringing great incentive realization for both intrinsic and extrinsic identities of the firm. Money remains the most significant factor in motivating industrial workers to achieve greater productivity. Booth and Frank (1999) advocated the establishment of incentive wage systems as a means of stimulating employees to higher performance, commitment, and eventually satisfaction. Money possesses significant motivating power inasmuch as it symbolizes intangible goals like security, power, prestige, and a feeling of accomplishment and success. Key studies from Bailey, Brown, and Cocco (1998) as well as from Kreps (1997) indicated that incentives are great pillars of performance. Any great organization will have to incorporate a number of vital incentives to motivate employees and ensure that the right processes of key incentives have been completed.

3.1.3. Third period (2000s)

An improved use of incentives during the decade of 2000 saw an increase in productive workforce, increasing performance. Most of the research supported the argument that monetary incentives frequently are suggested as a method for motivating and improving the performance of persons who use and are affected by accounting information (Bonner, Hastie, Sprinkle, & Young, 2000). These authors' evidence indicated that monetary incentives have widely varying effects on effort and often do not improve performance, consistent with accounting studies that have examined the effects of incentives on individual performance and have found mixed results about their effectiveness (Murphy, 2000). Results of some authors have revealed that work incentives in 2005 were slightly stronger than they were in 1997and much more active in 2005 than in 1982. Incentives to work and incentives to progress have strengthened, on average, since 1982. But they have weakened on average since 2000. Bonnerand Sprinkle (2002) study a specific motivation, since reliance on an incentive-based compensation scheme provides an incentive for the agent to trade off the cost

of increased effort for the higher reward. Kachelmeier and King (2002) argued that a high reliance on incentive-based compensation schemes is more likely to enhance an agent's performance than a low reliance on incentive-based compensation schemes. Such a general conclusion should not be drawn, however, because some empirical studies have found that reliance on incentive-based compensation schemes does not always enhance individual performance; Schatzberg, Sevcik, Shapiro, and Thorne (2005) found that reliance on incentive schemes sometimes even caused performance to deteriorate. Thus, they argued that the agent will attempt to avoid work unless incentives are provided to motivate effort. Incentive-based compensation schemes can be used to mitigate the problems concerning the withholding of information by subordinates. On the other hand, late study by Niederle and Vesterlund (2007) reported positive effects for monetary incentives on performance by altering either the effect of incentives on effort or changing the effect of incentives-induced effort on performance. A high reliance on incentive-based compensation schemes would be an appropriate motivational control tool to encourage subordinates to exert greater effort to enhance their performance. Some other studies address the self-interest as the study of Eriksson, Teyssier, and Villeval (2009) which indicated that while managers with low levels of organizational commitment are motivated to pursue self-interest. Managers with high levels of organizational commitment are motivated to pursue corporate interest, and individuals with high organizational commitment are characterized by a strong belief and acceptance of the organization's goals and values, and a willingness to exert considerable effort on behalf of the organization. Individuals are motivated to exert more effort when they believe that the extra mile will increase their production, which in turn, will result in their receiving more rewards. Sutter and Strassmair (2009) reported that the performance level of managers with low levels of organizational commitment will be higher when the extent of reliance on incentive-based compensation schemes is great rather than small.

3.1.4. Fourth period (2010s)

Obviously, during the last decade, from 2010 to 2017, studies have shown that management accounting information plays a major role in motivating individuals to improve performance. Cason, Masters, and Sheremeta (2010) suggested that individuals with strong organizational affiliations may be motivated to pursue corporate interests without the opportunity for personal gain. The idea is that people can be strongly motivated to pursue corporate interests. Lack of skill can reduce the effort–performance relation because, while financial incentives may stimulate higher levels of effort, the performance of individuals who lack skills is not sensitive to these effort increases (Niederle & Vesterand, 2011). The research was done in experimental markets setting to incorporate moral reasoning. The authors reported that a significant effect of moral reasoning on auditor behavior, misreporting, and premium fees is more likely with higher than with lower moral reasoning subjects and the right-thinking effect diminishes as financial penalties increase in the market. These types of results give valuable knowledge that helps people understand why auditors misreport, in terms of the observable behaviors that signal its existence and the institutions that can prevent its occurrence in the market. Therefore, it could be summarized that the relation between moral reasoning and behavior is complex (Cason, Sheremeta, & Zhang, 2012), and that some accounting-related variables can alter the effects of incentives on performance. For example, on average, explicit performance targets have additive benefits on effort and performance over monetary incentives, thereby suggesting that organizations should employ performance objectives in conjunction with financial incentives to motivate employees. However, these authors found evidence of an interaction between the difficulty of the goal and the type of incentive scheme. Specifically compared to piece-rate systems, performance typically is better under budget-based schemes when goals are moderate, but worse when goals are difficult. Likewise, several studies have reported that incentive-based compensation schemes have a positive effect on efforts and individual performance. Financial incentives motivate people to exert more effort, which in turn should improve task performance (Schurr & Ritov, 2016).

However, empirical evidence indicates that financial incentives frequently do not lead to increased performance. Consequently, it is important to evaluate variables that may interact with financial incentives in affecting task performance. Research by Llorente-Saguer, Sheremeta, and Szech (2016) showed that the type of work is being done and the kind of incentive scheme being applied affects the efficacy of financial incentives and therefore may influence the design of management accounting and control systems. Management accounting information plays a major role in motivating individuals to improve performance. This action is only affected when rewards are made according to performance, typically through the provision of financial incentives (Connelly, Tihanyi, Crook, & Gangloff, 2014). Moreover, lack of ability can decrease the incentives–effort relation. Specifically, when people are assigned tasks for which they do not have the necessary skills, they may not increase their production under monetary incentives because they believe that effort increases will not lead to performance increases and consequent rewards (Kimbrough, Laughren,& Sheremeta, 2017). On the other side, when individuals are allowed to select their contracts for a particular task, people with high skill are more likely to choose safe payments, thereby restoring a positive incentives–effort relation. Other specific studies have recently focused on the relationship between the tournament incentive and disincentive effects. Tournaments might promote individual behavior; from an experimental study Schurr and Ritov (2016) claimed that winning a competition leads to more deceptive behavior. Moreover, other studies have indicated that when subjects use a tournament incentive scheme, they find some way to collude by spending low effort (Cason, Sheremeta, & Zhang, 2012; Kimbrough & Sheremeta, 2013, 2014). In conclusion, the use of financial incentives has been raising efforts and performance over the period 1982–2017. The results show that rewards and incentives in the workplace have benefits for both employees and employers. When recognized for stellar performance and productivity, workers have increased morale, job satisfaction, and involvement in organizational functions. As a result, employees experience greater efficiency and an increase in sales and productivity. Through workplace rewards and incentives,

employers and workers enjoy a positive and productive work environment. Therefore, the success of any business enterprise is influenced by the professional capacity and motivational effects of incentives. As such, the organization should focus on improving the level of commitment, motivation, and job satisfaction among its employees. Hence, it is important to take into consideration the impact of employees' needs, motives, and ambitions to negotiate more flexible schemes for financial participation, career development opportunities, and performance recognition as part of strategies to ensure that the organization's progress is stable and ever growing. Performance measures to reward performance help to improve employees' psychological capacity for performing tasks. This is because employees know that they will be paid for the performance they give. Thorough research may help to prepare management to know about the limits of motivation effects and their relation to effort–sensitivity of the tasks. It would also be useful to check work and to monitor, measure, and evaluate an action so that it can help in rewarding activities and performance. Importantly, such research could prepare management to know the effects of incentives and to make decisions that can assist in improving performance. Future research needs to be done on the empirical questions of when, to whom, and how much financial incentives can bring a desired effect. It is difficult to understand exactly why incentives do or do not work. Also, particularly with regard to long-term effects, greater understanding is needed with regard to financial incentives.

Table 5. Financial incentive studies over four decades

Financial incentive studies	
1980s	Roth & Murnighan (1982); Baiman (1982); Grossman & Hart, (1982); Riedel, Nebeker, & Cooper (1988); Holmstrom & Milgrom (1987); Sklivas (1987); Shields & Waller (1988); Harrell,Taylor,&Chewning (1989)

1990s	Dillard & Fisher (1990), Libby &Lipe (1992); Itoh (1991); Ashton (1990); Kreps (1997); Sayre, Rankin, & Fargher (1998); Booth & Frank (1999); Bailey, Brown, & Cocco (1998); Kreps (1997); (Kreps, 1997)
2000s	Bonner, Hastie, Sprinkle, & Young (2000); Zimmerman (2000); Bonner& Sprinkle (2002); Kachelmeier & King (2002); Schantzberg, Sevcik, Shapiro, & Thorne (2005); Niederle & Vesterlund (2007); Eriksson, Teyssier, & Villeval (2009); Sutter & Strassmair (2009)
2010s	Cason, Masters, & Sheremeta (2010); Niederle & Vesterand (2011); Cason, Sheremeta, & Zhang (2012); Schurr & Ritov (2016); Llorente-Saguer, Sheremeta, & Szech (2016); Connelly, Tihanyi, Crook, & Gangloff (2014);Schurr & Ritov (2016); Kimbrough, Laughren,& Sheremeta (2017); Schurr & Ritov (2016)

3.2. Group issues

Over the last 35 years, there has been a tremendous development and change in the way auditing is done. Fundamentally, the evolution of audit has developed several hot topics such as face-to-face auditing in groups. These developments have helped to aid the fundamental aspects of auditing and other assurances. In essence, the evolution of auditing has presented opportunities and risks. Organizations and their environments have always changed inherently. Therefore, the changes have precipitated emerging risks and opportunities and their ramifications in the broader field of auditing. In recent years, auditing and assurance fields have been synchronized to produce practical guidelines. For instance, group auditing has recently received intense international focus. The auditing and assurance regulatory bodies have continuously paid close attention to the evolution of auditing aspects. Over the last 35 years, technological advances have offered both advantages and challenges to auditing. Many issues have also developed as a result of technology. There have been numerous developments in the auditing field related to group issues from 1982 to 2017.

3.2.1. First period (1980s)

Deep consideration of this topic has a close connection to some other subjects; for example, it has to do with knowledgesince 1982 about the traditional form of auditing, which is face-to-face auditing. However, due to post-1982 technological innovations, there has been significant transformation in the way face-to-face auditing is conducted. It is imperative to note that face-to-face auditing is still the most preferred form of auditing, but the way it is done has significantly changed over the years. Among the issues is administrative accounting information, particularly the process of negotiation among the members of the group with respect to the coordination process (Craft, 1981). Consistent with another study about the information issue by Birnberg and Shields (1984) that articulates that in accounting, behavioral research does not take into account the accounting concepts of attention and memory that are essential to the understanding and knowledge of how people process accounting information and interpret existing research. These authors further indulged in the use of psychology, marketing, and artificial intelligence to develop significant research areas to be able to increase an accountant's understanding of the roles that human attention and memory serve in processing accounting information. Moreover, studies have investigated the brainstorming concept among groups of auditors, which could be a rich source of information for auditors which could lead to good performance (Schultz & Reckers, 1981; Solomon, 1982). Another topic in this period has been studied by Trotman (1985), who concluded that auditors' involvement in component auditors' work is a departure from the traditional rule and at times is devoid of focus. Audit staff members are assigned components without being given a clear objective of the purpose of their audit (Trotman, 1985). This lack of clear work purpose makes the audit staff have a lack of clear understanding of what they are required to do, thereby making the staff perform irrelevant procedures or fail to perform the required correct procedures (Brehmer, 1986). Through the different studies and analysis, it is clear that group audit is an effective approach and ensures that proper audit procedures have been followed. With such components, there are correct aspects that ensure that a proper

speculative framework has been effectively completed. It is a common principle for most organizations to consider audit across groups and ensure that the much-anticipated information is accomplished. Birnberg and Shields (1984) stated clearly that group audit will continue to be an effective process of security in the entire process of completing the audit. It is through studies that different components have been completed and done in a way that substantially provides the best possible results. The study of Frederick and Libby (1986), presents relation between performance and experience between group members during the process of review. However, the authors stipulated that the key role of understanding an auditor's expertise and understanding requires detailed analysis in reference to the nature of auditing knowledge and basic knowledge that is required to learn and retrieve knowledge. Moreover, Frederick and Libby (1986) studied the team auditors' judgments when depends on memories and showed how to memory ability to join the process of decision making. Another key study by Emby and Gibbins (1988) examined the consultation issues among team members, including feedback and advice, in order to reach the right decision making in the auditing process.

3.2.2. Second period (1990s)

Bonner and Lewis (1990) showed that knowledge is an essential component in accounting, especially in understanding group audits. The authors articulate that the experienced auditors perform better than their less experienced counterparts, due to their knowledge and innate ability is the essential component that is required to determine their level of performance. That explains why group audits provide auditors with substantial knowledge that they can effectively apply. The knowledge helps them to become better in most of the processes, ensuring that the right aspects are completed in the right way. Young, Fisher, and Lindquist (1993) stated that intergroup audit is a significant component that boosts the reliability that is established. Group audit is a clear path through which effective audit is usually realized. The

individuals taking part in the audit understand the effectiveness of the process and ensure that the right considerations are sustained. Stocks and Harrell (1995) suggested that increasing audit information through the various groups becomes a great motive to ensure that the right aspects of the audits are effectively completed. Hocker and Wilmot (1995) postulated that group audit will be completed when the principal guidelines of audit are done in the most appropriate way. The study identified the issues that affect group audits in order to be effective in evaluating the key principles of auditing. In a related field, Solomon and Shields (1995) stipulated that many accounting decisions are structured incorrectly due to the scope and materiality involved. They articulated that if the group auditors' scoping is wrong, little can be done to salvage the situation. The authors attributed this to a number of factors by illustrating that, if the scoping is done wrongly, the auditors will be forced to do a lot of work, which is inefficient, or too little work, which does not comply with what was originally intended. The authors also stipulated that in group auditing, there are existential significant risks that should be taken into account. The authors articulated that if the auditors scope out the components that should be scoped in, but on the other hand they end up performing little work on the components by failing to assess the components carefully, this forms the greatest risk in group auditing. Another important topic is group decision processes and the concept of knowledge and memories. Libby (1995) clarified that there are various factors influencing an accounting decision, and the availability of these factors can be most effective during decision making. In this context, another study indicated that some groups are habitually characterized by a kind of disagreement among members, which may arise from diversity in individual trust in respect to how resources are to be allocated among members, as well as to variance in opinions, judgments, and beliefs (Hocker & Wilmot, 1995). In this regard, other studies have dealt with the same subject and added the factor of discussions and negotiations in the group (Ismail & Trotman, 1995). In the end, due to a constellation of these aspects, the audit staff leaves the auditing work without a clear view of what their visit entailed. The regulators articulate that all these aspects, irrespective of whether they are related to

compliance or efficiency, are key charges that auditors need to embrace and deal with. Ismail and Trotman (1995) articulated that analytical research is an essential commodity in auditing. Research entails integrating accounting frameworks in all the companies' geographical locations. Due to different geographical locations of companies, there is an existential probability to have communication difficulties intensify with the size of the client firm. The audit work becomes complex depending on the size of the client's firm, necessitating extensive audits. Therefore, component group auditors in other geographical locations may find it difficult to predict or understand the group auditors' actions and instructions. Due to the increase of company geographical locations, the number of components has also increased, thereby adding an additional task for the group auditors, who are required to explain the audit strategy to more component auditors. In this situation, the time of communication and the overlapping of information may greatly undermine the audit process. Thus, in this study the use of computer-based communication to promote face-to-face discussions was present among the groups of auditors, and this issue was the focus of the researchers' attention. Some studies have indicated that a team that uses virtual methods such as electronic email is likely to have a great feeling of confidence, a strong sense of their capability, and a major sense of freedom in expressing their judgment (Connolly, Jessup, & Valacich, 1990; Turkle, 1994; Walther, Anderson, & Park, 1994; Connolly, 1997). As well as other subtopics which are not modern which address the matter of multi-person in a task, multi-period and expertise issues; group settings are characterized by conflict among members.Hocker and Wilmot (1995) clarified that auditors are more prone to conflicts, less satisfaction, and poor decision making. This was attributed to the passive and aggressive nature of their existence. The authors articulated that this conflict is necessitated by auditors' interaction and communication with professionals from other fields. The authors included interactions and negotiation that entailed detailed communication. The authors limited the judgment and decision-making experiments in such areas such as the hierarchical review process. Under this process, it makes the key control mechanism engulfing audit firms, which

also affect the reviewer and preparer behavior (Lewicki, Saunders, & Minton, 1999). A topic related to incentives also has had a large share of research. This has included for example the explicit andimplicit rules with monetary incentives, incentives for earnings management, group incentives, and quality of performance, where some empirical studies have addressed the issue of financial incentives for groups in a positive perspective. A study by Atkinson, Balakrishnan, Booth, Cote, Groot, Malmi, & Wu (1997) examined performance assessment and incentive issues in group settings. In contrast, there have been studies that have tested the negative side of group stimulation that may produce bad behavior that will affect performance (Arya, Fellingham, & Glover, 1997; Balakrishnan, Nagarajan, & Sivaramakrishnan, 1998).

3.2.3. Third period (2000s)

The matter of negotiation was obvious, as the study by Bazerman, Curhan, Moore, and Valley (2000) stated that in the presence of a dispute in the workplace, there needs to be proper negotiations among the auditors in the event of a conflict. On the other hand, Yip-Ow and Tan (2000) stated that there are different requirements for auditors in different areas, and that each auditor should be conversant with the said requirements. There also needs to be a determination of the components and the level of work expected to be performed by the auditors. The lack of clear work purpose makes the audit staff have a lack of understanding of what they are required to do, thereby making the staff perform irrelevant procedures or fail to perform the required correct procedures. There also needs to be materiality and group auditor involvement in reference to component auditors' works (Bazerman, Curhan, Moore, & Valley, 2000). Studies have dealt with the issue of generating ideas where the team frame in the process of collective discussion helps generate an alternative error hypothesis in the review (Tan & Yip-Ow, 2001; Tan & Trotman, 2003). In another field, studies have indicated the relationship between teamwork and the type of financial reward received by auditors and

the extent of its impact on performance (Bonner & Sprinkle, 2002). This topic gained increasing attention from accounting studies, which examined several elements of compensation schemes in the variable performance of the team. Kachelmeier and King (2002) concluded that functions such as the signing of the audit opinion will be best monitored through virtual means rather than waiting for a face-to-face opportunity. The audit process is characterized by independence; nonetheless, the process also has interdependencies. Coordinating and communications activities form the interdependencies of an audit process for audit teams. Interdependencies stipulate that a failure in coordination and communication can result, especially when the global aspects of firms are introduced. The time of communication and the overlapping of information may greatly undermine the audit process (Mayhew & Pike, 2004). The differences in the group formation are seen via the inclusion of the involvement teams, and one of the development topics that has been raised is inspections. Given possibility operational hardness in proceed concurrent inspections in face-to-face method; there is the possibility to do the inspection through online services, though notably not for the whole process (Brazel, Agoglia, & Hatfield, 2004). Moreover, the results provided in the literature depict that the preparers of electronic reviews are given low-quality documentation compared to face-to-face preparers (Agoglia, Kida, & Hanno, 2003). When the quality of information is poor, it affects the judgment of reviews (Brazel, Agoglia, & Hatfield, 2004), in this research that made a comparative study of an electronic versus face-to-face review which study the effects of alternative forms of audit on the fulfillment of auditors in terms of efficiency and effectiveness, which concluded that there are no significant differences. Therefore, under this research, the group that uses electronic reviews will tend to have less accurate information than a group using a face-to-face review. Although another study by Moreno, Bhattacharjee, & Brandon (2007) asserted that the risk-based audit process which uses technology method provides best audit proof data in the analytical procedure. In the same period, studies on ethical aspects and processes have been conducted in relation to the nature of group members. Rowe (2004) found that setting up a ‘group

frame' in teams could encourage both a sense of trust and confidence and a sense of team tasks (collectivism), which assists in mitigating problems. Overall, the findings of group's forms research suggest that social motives are very important to decision-making operation and outcomes. in the same line regardless the methods using between auditors, the study by Coletti, Sedatole, and Towry (2005) showed that trust between co-operators was strengthened in conditions where control systems were strong enough which as well enhance the level of trust among collaborators, when joining is observed, the group auditors' resources and costs will increase significantly. Pinello and Dusenbury (2006) also stated that there ought to be ethical rules to guide auditors' behavior. Some research has investigated mutual decision making (Larrick & Soll, 2006), and also some cases along this line have investigated peer pressure (Carpenter, 2007). That author found a properly high plane of collaborative behavior in the absence of monitoring, suggesting that both sides know the benefits of keeping trust. Organizational structures may also present differing group auditors' teams. With technological advances, audit Company used alternatives tools to conduct the review process and other operations. This has been directly reflected in the large number of researches in this regard, especially with group's issues in auditing. As some studies addressed the fraud issue through brainstorming meeting conducted as side of the audit planning procedure. Likewise, compares nominal teams (integration of individuals who have not met face to face) and how extent of interacting groups on a brainstorming task, it found that face-to-face brainstorming does not enhance the numbers of frauds registered but does enhance the quality of the items registered (Hoffman & Zimbelman, 2009; Trotman, Simnett, & Khalfia, 2009; Wood, Beckman, & Burney, 2009).

3.2.4. Fourth period (2010s)

In this period, there were several topics that were in keeping with progress, and some of them were compatible with and complementary to what occurred in the previous periods. Authors articulated that auditors oftentimes interact and communicate with professionals from other fields, including interactions and negotiation that entailed detailed communication (Pomeroy, 2010). Authors in this period limited the judgment and decision-making experiments to some main areas which covered a hierarchical review process and audit committee members. Under this process, it makes the key control mechanism engulfing audit firms, which also entails reviewer behavior and preparer behavior (Payne, Ramsay, & Bamber, 2010). Reviewer behavior entails output comparisons with other group formats. Moreover, brainstorming is a part of the detection planning process on auditing standards, which requires a discussion which leads to audit quality (Francis, 2011). The discussion happens between audit team members in reference to the client's financial information. This illustrates that there should be a high level of documentation involved to capture the complexity of the process; accordingly, the use of virtual environments among team members in training and learning simulation has been addressed, with virtual environments being used to train the team to manage high-risk events (Haerkens, Jenkins, & Van der Hoeven, 2012). These virtual environments contribute to the preparation of the audit team and allow teams to learn by sharing experiences and errors that enable auditors to identify potential fraud. Moreover, presently group auditors need to be certain that component auditors have auditing understanding, specialist skills, and an understanding of the applicable financial reporting frameworks. Further, some authors articulated that an auditor cannot learn without communicating with other auditors (Fiolleau, Hoang, & Pomeroy, 2013). These scholars are of the view that the first form of communication needs to be between the group auditors and component management in reference to the forms of information that are required when preparing consolidated financial statements. One of the noteworthy topics is the review process and use of technology; the review process has been developed in line with technological advances. Realistically, the

process of reviewing operations is to achieve high-quality performance. Payne, Ramsay, and Bamber (2010) compared face-to-face interacting review with written review and found that the former leads to a focus on more quality in audit procedures, resulting in better identification of cheating. In an audit regulation, in the first place is a key aspect of quality monitoring with important engagement for group performance (Dennis & Johnstone, 2014); this outcome indicates that the review format affects the performance. Where the concept of face-to-face review is also common as the preparer and reviewer meet in a real-time interactive revision, some studies employed the electronic reviews method between the reviewer and managers and found that the review raise the number of reasonable hypothesis created for both groups, but to a major extent for review groups with discussion regardless of how the groups communicate. And found that reviewers perceive electronic review to be less effective than face to face, but that electronic review is considered more convenient (Agoglia, Brazel, Hatfield, & Jackson, 2010). Also related topics have been addressed and included the use of technology, the brainstorming studies which cover an interacting group (Hammersley, Bamber, & Carpenter, 2010).Some other issues have been studied, including the extent of consultation. Nelson, Broell, and Randall (2016) show that auditors are more interested in consulting with their supervisors on audit issues on specific issues, which increase efficiency in the audit process. Another study by Schaefer (2014) display that social costs for example reputation worry can lower auditors' desire to informally consult, encourage them to consult with peers rather than superiors. However, the nature of the assignment in the brainstorming studies has included thought generation, while in the review process studies the task has commonly been evaluation. In terms of technical issues there is a difference, as electronic brainstorming reduced production blocking and assessment. Chen, Trotman, and Zhou (2015) studied the possibility of process loss, to better address the implied mechanisms of brainstorming efficiency and inspect how reactive groups do or do not outperform nominal groups in electronic brainstorming. The group theme has close association with some other topics such as audit group. Trotman, Bauer, and Humphreys (2015) stated that the judgment

and decision-making literature in reference to auditing emerged in the 1970s. Researchers have also intensified some studies on the uses of technology such as study by Chen et al. (2015) found that nominal group production is a large factor for risk of fraud. For example, simulations can provide group training for events that are sensitive in terms of risk but low frequency, within practical environments that basically are not sensitive in terms of risk. These simulated environments permit groups to experiment and make errors, objectively, to learn helpful lessons. Another line that has appeared has to do with environmental and cultural factors. Frank and Hoffman (2015) studied the experience of auditors by examining the responses of experienced reviewers when they review a preparer opinion that seems to be biased by the preparer's influence, such as personal feelings, audit team background variety, and sustainability. Various specialties in audit teams are popular; these can involve team members with an auditing/accounting background and those from other disciplines, including the environmental sciences. Additionally, in terms of team identity, Bauer and Estep (2015) and Trotman and Trotman (2015) provided proof that auditors and IT specialists who have a perfect working connection share a stronger group unity and are associated with extra productivity within the process of auditing. Another new and emerging area in this field has clarified audit committee interactions with auditors. One line of study has considered the probing questions provided by audit committee members to the auditors (Trotman & Trotman, 2015). Yet auditors also initiate some connection with committee member and characteristics of audit committee member probably affect auditor responsibility and the ways auditors select to interact with these ACMs (Kang, Trotman, & Trotman 2015). In light of this, much recent assurance has been placed on audit quality indicators that should be communicated between auditors and audit committee members. However, given the variation in ACMs' level of participation in the audit as well as their experience and background (Kang et al., 2015), it is essential to comprehend how audit committee members will respond to and use these audit quality indicators. Another recent major theme has dealt with consultation, which entails seeking advice from other auditors and experts in accounting. Consultation has

generated instant abilities for organizations to associate and pull people from different parts of the world without physical implications. Therefore, group auditors will need to communicate relevant requirements and information so that the component auditor can start auditing. Furthermore, Bauer, Hillison, Peecher, and Pomeroy (2016) showed that without a quick to consider the fraud matter, auditors do changes well upon an audit plan for answering to fraud risk which may be in high level, when informally consulting a peer, because of different focal concerns in their respective rational perspectives. For evaluation purposes, group auditors will need to maintain their communication with the component auditor, assuming that the component auditor is auditing a firm that is miles away from the geographical position of the group auditor. Also among the prominent and current themes are the individual and group levels of teams and collaboration. Complexities are also generated by the structure of global group audits. Global group audits have also presented differing characteristics due to the number of components spread across the globe. The increase in the number of components means that group auditors are faced with the task of explaining the audit strategy to more component auditors (Cannon & Bedard, 2017). In conclusion, auditing has inherently changed over the past years. Organizations and their environments have always changed inherently. Therefore, the changes necessitate the need to examine emerging risks and opportunities and their ramifications in the broader field of auditing. In recent years, the auditing and assurance fields have been synchronized to produce practical guidelines. For instance, group auditing has recently received intense international focus. The auditing and assurance regulatory bodies have continuously paid close attention to the evolution of auditing aspects. Over the last 35 years, technological advances have offered both advantages and challenges to auditing. Technology has also developed many issues relating to auditing.

Table 6. Group issue studies over four decades

Group Studies	
1980s	Craft (1981); Schultz & Reckers (1981); Solomon (1982); Birnberg & Shields (1984); Trotman (1985); Brehmer, (1986); Birnberg & Shields (1984); Frederick & Libby (1986); Emby & Gibbins (1988)
1990s	Bonner & Lewis (1990); Connolly, Jessup, & Valacich, (1990); Young, Fisher, & Lindquist (1993); Turkle (1994); Stocks & Harrell (1995); Hocker & Wilmot (1995); Solomon & Shields (1995); Libby (1995); Ismail & Trotman (1995); Kiesler (1997); Walther (1994);Atkinson & Balakrishnan (1997); Arya, Fellingham, & Glover, 1997; Balakrishnan, Nagarajan, & Sivaramakrishnan 1998); Lewicki, Saunders, & Minton (1999)
2000s	Bazerman, Curhan, Moore, & Valley (2000); Yip-Ow & Tan (2000); Tan & Trotman (2003); Tan & Yip-Ow (2001); Bonner & Sprinkle (2001); Kachelmeier & King (2002); Mayhew & Pike (2004); Brazel, Agoglia, & Hatfield (2004); Agoglia, Kida, & Hanno (2003); Rowe (2004); Coletti, Sedatole, & Towry (2005); Coletti, Sedatole, & Towry (2005); Larrick & Soll (2006); Moreno, Bhattacharjee, & Brandon (2007); Carpenter (2007); Hoffman & Zimbelman (2009); Trotman, Simnett, & Khalfia (2009); Wood, Beckman & Burney (2009).
2010s	Pomeroy (2010); Payne, Ramsay, & Bamber (2010); Agoglia, Brazel, Hatfield, & Jackson (2010); Hammersley, Bamber, & Carpenter (2010); Francis (2011); Haerkens, Jenkins, & Van der Hoeven (2012); Fiolleau, Hoang, & Pomeroy (2013); Dennis & Johnstone (2014); Nelson, Proell, & Randel (2014); Schaefer (2014); Schaefer (2014); Trotman, Bauer, & Humphreys (2015); Frank & Hoffman (2015); Trotman & Trotman (2015); Bauer, Hillison, Peecher, & Pomeroy (2015); Cannon & Bedard (2016)

3.3. Partnership

As there is a tendency to misinterpret the definition of the term partnership, it is wise to offer a clarification. In this literature, the term partnership is used differently. From our standpoint, a partnership is a contract or an association of two or more competent persons who share a common goal and vision, and they have come to work together in long-term, ongoing relationship with the understanding that there shall be a proportional sharing of profits and

losses. A partnership or alliance will give you a competitive advantage and an opportunity to access a broader range of resources and expertise. This means that the partnership can offer clients distinctive skill sets and product lines that are different from the competition. By partnering up, each partner can focus on his or her strengths, as well as have reliable people in other organizations to cover the areas outside the partnership's expertise. Partnerships have some properties relating to the relationship between the individual partners and the relationship between the partnership and the outside world. Various experimental studies have been done over the past 35 years, and most significant concerns have been raised to enhance the comprehension of the topic of partnership in auditing. It will be wise to examine each work done by the various investigators, but those who share something in common as far as research about partnerships are of special interest. In this period, from 1982 to 2017, various experimental studies have been carried out on topics related to partners with auditors, including issues between customers and agency partners' features or properties. Some subtopics are also covered, among them the clients' size, tenure, and workload, as well as professional and personal relations between clients and audit partners, partners' switching of audit firms, and partner compensation and dynamism. Also recently there have been studies focusing on related topics such as voluntary disclosure and audit partner rotation.

3.3.1. First period (1980s)

De Angelo (1981) argued that the long dominance of the professional partnership is more an artifact of professional codes of ethics and specifically the result of prohibitions on outside owners than an optimal adaptation to human capital intensity. The analysis challenges existing theories of the professional partnership and suggests caution in holding them out as models for knowledge-intensive firms in general. This study analyses the relations between audit quality, audit firm size, and financial performance. It also studies the estimates of audit quality of audit firms from human capital-related factors, such as educational level of auditors, work experience of auditors, and professional training. From the perspective of

market segmentation, results have reported a positive association between audit firm size and audit quality for the three categories of audit firms. The positive relationship of national audit firms is higher than that of regional and local audit firms. The relationship between audit quality and financial performance is positive. Gilson and Mnookin (1985) identified that audit partners usually experience a number of difficulties that they sustain before they come into a suitable audit path. They should first look at the channels they use and ensure that the right aspects have been completed in due time. They tend to focus on making the audit successful without interfering with the given processes. Among the most important aspects of auditing is generating an effective and reliable partnership. Balachandran and Ramakrishnan (1987) addressed some concerns example in some unique ways, where the study indicated that partner compensation plan, and indoor observation assist to ensure that a partner acts in the better interests of the audit company. Balachandran and Ramakrishnan (1987) identified a theory of audit partnership which formed a great guide through the process of auditing. It depended on the size of the audit firm completing the entire audit process. Every aspect was essential in the process of audit completion. What really mattered was the appropriateness of the audit that was being completed. In strategic management terms, an effective audit partnership sustains the effectiveness of the type of audit being completed. Moreover, Farrell and Scotchmer (1988) examined partnerships and obtained a result that appears in a somewhat different context in the literature on worker-run firms. They explain that an equal-sharing rule inefficiently limits the size of partnerships because workers care about an average product rather than a marginal product in an organization.As long as the initial partners could capture the returns to selling those additional positions, partnerships would behave in the same way as competitive firms. Some empirical evidence on the importance of profit sharing and partnership in professional practices is provided by Gilson and Mnookin (1985), who explored the topics of compensation and profit sharing in law firms. They found that compensation is not the same across partners, but that compensation differs to a lesser extent than a contribution to the firm as measured by observables. Other issues discussed

included the relationship between gender and partnership. The study stated that women are more committed to regulations and more cautious in their relationship with partners in terms of processing information (Meyers-Levy, 1986).

3.3.2. Second period (1990s)

There are some slightly different issues in this decade. A study by Greenwood, Hinings, and Brown (1990) addressed the issues of agency problems, stating that if workers were free to sell the rights to their jobs, this result would vanish. As stated, partners share the ownership and play a vital role in the net output. Lenz and Mudrick (1990) suggested that partner competition was a great aspect in every organization. Through such a competitive framework, proper components are laid down, which ensures that the right aspects are completed and done in the right way. It provides key aspects and anticipates a framework that ensures effectiveness in the process of auditing (Kandel & Lazear, 1992). It also provides key pressure on the generated partners and gives sufficient information that could never be disputed. Adding positions to the firm is always profitable when the additional positions bring about efficiency. Moreover, Miller (1992) indicated that the most important specialized input in partnerships is typically the knowledge and ability of workers, that is, their human capital. The human capital of audit firms is embodied in the expertise and experience of auditors and is a critical input in determining their audit quality. Even with the various complexities in the entire audit process, such considerations help in forming a reliable audit process. A number of studies, including a study by Ricchiute (1999), have indicated the aspects that make sure a number of different frameworks are completed in the right way to highlight the correct principles. Furthermore, another study by Trompeter (1994) stipulated that in a related professional partnership, there are key insights that make sure different anticipations have been completed in suitable approaches that ensure effectiveness for the entire completion process. This empirical study indicated that the relation between audit firm size and audit quality is significantly positive in the three categories of audit firms (Trompeter, 1994). This

positive relationship is higher in national audit firms compared to regional and local audit firms, consistent with our expectations and with the findings in various studies (Kandel & Lazear, 1992). No significant difference in the positive relationship exists between regional and local audit firms (Bazerman, Morgan, & Loewenstein, 1997). Also, audit firms motivate their partners using various forms of profit-sharing schemes such as equal sharing arrangements, performance-based arrangements, or hybrid models. Survey studies have found that various forms of profit-sharing plans are used in practice (Burrows & Black, 1998).

3.3.3. Third period (2000s)

The rise of the third period of the empirical literature on partnership in auditing in the following years led to the emergence of new topics, and some scholars turned to subjects that had a clear impact on people. However, agency problem partnerships were prominent as studies revolved around the auditing process, decision making, and related concepts. There was a steadily increasing rise from the first period to the second period; however, topics got wider and wider, and they started to be complex; the issue of agency problems is a wide topic and involves complexities (Beattie, Brandt, & Brandt, 2000). In a different area, Levin andTadelis (2005) compared the costs and benefits of partnerships relative to the corporate form of organization. They showed that organizing as a partnership can be desirable in human-capital intensive industries, where product quality is hard to observe, such as accounting, medicine, investment banking, architecture, advertising, and consulting, Bertrand and Schoar (2003) also explained features of partnerships such as up-or-out promotion systems, the use of non-compete clauses, motives for profit sharing, and recent trends in professional service industries. Another experimental area is the matter of audit partner tenure. A study by Carey and Simnett (2006) showed that a longer partner period with the audit company is usually related to leniency of the consensus to produce a close view, so that the relationship is not affected. Also, there is no strong relationship between a company's fame and the duration of the partnership, which may affect the earning criteria.In this decade,

some studies indicated the extent of personal and professional relationships between clients and audit partners; some studies found evidence that client using former partners as executives were helpful in giving clean opinions on the audit process (Menon & Williams, 2004; Lennox, 2005).Correspondingly, some studies dealt with a number of specific topics under risk monitoring, including the procedures of acceptance and continuity of the client, and the independence of the auditor, which dealt with the employment of former auditors, rotation of the partner and companies, and issues of compensation and quality for the partner, such as higher-quality partners appear to be often reconsider when the partner has more industry experts. However, the level of the audit company does not translate into a higher-quality audit in the lack of partner-level experience (Bedard, Deis, Curtis, &Jenkins, 2008).

3.3.4. Fourth period (2010s)

The experimental literature in the most recent period saw a clearer and special focus on some subjects; during the last decade the literature put a spotlight on the overall improvement of partnerships through the years. The aspect of partnership has been reported to be gaining popularity every year. A deeper analysis has been done by current researchers, who well explain the auditing process. There was a close examination of the relation between audit partner rotation and audit fees, for example, from 2007 to 2010. Brewster (2011) found a positive association between audit fees and partner rotation in the year of rotation. The association persists in the first year post rotation and to a lesser extent in the second year post rotation. The analysis suggested that higher audit fees are associated with both mandatory and voluntary partner rotation. The rewards system in a group is also very important in setting the right course of operations (Chen, Williamson, & Zhou, 2012). However, mandatory and voluntary rotation is associated with higher audit fees for large global clients, while only voluntary rotation is associated with higher audit fees for small local clients. There is no association between partner rotation and audit fees for mid-level clients. Research suggests that the extent to which firms can pass on the costs of partner rotation varies across different

segments of the audit market (DeFond, Zhang, & Lennox, 2016). Mandatory audit partner rotation is required in many jurisdictions, and there is typically a cooling-off period during which the partner who is rotated off cannot be assigned back to the engagement. This phenomenon can indicate a close relationship between the partner and client because it suggests that the client has a strong preference for the former partner. Firth, Mo, and Wong (2014) examined the rotating-back phenomenon. They found that a rotated-off partner is more likely to rotate back. These results suggest that client partner familiarity and the demand for a more lenient audit can explain the tendency for partners to be rotated back to former clients at the end of the cooling-off period. Furthermore, Firth et al. (2014) found that the rotating-back partners treat their former clients more leniently, and also examined whether professional and personal connections between partners and clients can impair audit quality. Moreover, some investigators have stated that partner rotations are associated with major audit effort (Bedard & Johnstone, 2010; Christensen, 2015; Laurion, Lawrence, & Ryans (2016), and a professional connection can exist when a client's executives were former partners of the incumbent audit firm. Such connections could compromise auditor independence due to misplaced trust of the former partner, who is now a client executive. Consistent with this, there is some evidence that clients employing former partners as executive officers report larger signed and unsigned abnormal accruals and are more likely to receive clean opinions from their auditors. Guan, Su, Wu, and Yang (2016) examined the effect of client partner school ties on audit quality. On the one hand, they argued that clients feel more comfortable when interacting with auditors who have similar social backgrounds and experiences to themselves. Therefore, school ties can facilitate information sharing between the client's management and the audit partner, which could improve audit quality. On the other hand, the study by Guan et al. (2016) was consistent with a study by Mowchan (2016) arguing that the mutual trust between connected partners and client executives could undermine independence. Another study by Cianci, Houston, Montague, and Vogel (2016) studied the impact on partner judgment, concluding that the identification of the partner

through name or signature had a negative effect on the partner's report. In conclusion**,** this study sought to draw out some of the implications and possible conclusions that emerged from the findings of the research. There is a great deal going on regarding partnership working across different sectors. In the 1982–2017 periods, researchers worked tirelessly to ensure they bring to the surface the understanding of partnership as well as promoting the partnership. Various experimental studies were carried out, for example, on topics related to partners with auditors; such as audit partner rotation, professional and personal relations between clients and audit partners, operations and partners switch between audit firms, engagements and partner compensation. With this in mind, the current literature review covered audit partners with a focus on how this body of literature provides insights beyond what is already known from studies conducted at the firm audit level and office level.We clarify partnership issues through the existing literature and highlight some possible trends for future research, which should focus on understanding the arrangements for compensation of partners and how these arrangements affect the quality of audit.

Table 7. Partnership studies over four decades

Partnership Studies	
1980s	DeAngelo (1981); Gilson & Mnookin (1985); Gilson & Mnookin (1985); Meyers-Levy (1986); Balachandran & Ramakrishnan (1987)
1990s	Hinings, & Brown(1990);Lenz & Mudrick (1990); Kandel & Lazear (1992); Miller (1992); Ricchiute (1999); Bazerman, Morgan, & Loewenstein (1997); Burrows & Black (1998)
2000s	Beattie, Brandt, & Fearnley (2000); Bertrand & Schoar (2003); Maine & Williams (2004); Linux (200 5); Levin &Tadelis (2005); Carey & Simnett (2006);Bedard, Deis, & Curtis (2008)
2010s	Bedard & Johnstone (2010);Brewster (2011); Chen, Williamson, & Zhou (2012); Firth, Mo, & Wong (2014);Christensen (2016); Laurion, Lawrence, & Ryans (2016); Guan, Su, Wu, & Yang (2016); Mowchan (2016); Cianci (2016)

3.4. Fraud

Detecting fraud is a complicated and challenging assignment. Perpetrators effectively participate in attempting to hide their conduct, auditors may have poor experience in fraud discovery, and fraudulent exercises are inherently unpredictable and hard to detect. Hence, firms would be ideally served by distinguishing and using those people who, because they seem to share certain exceptional identity attributes or qualities, might be most appropriate to the fraud detection assignment. Internal auditors play a vital duty in fraud detection, with most fraud recognized by the internal audit function. Due to the significance of appropriate fraud detection, any measures that can upgrade the adequacy of auditors ought to be of significant worth.The purpose of this literature is to highlight the evolution of fraud topics and their relevance to other topics in auditing over the last four decades.

3.4.1. First period (1980s)

This part of the literature review is the first explanation of early academic research done on dishonesty starting from the 1980s. Starting with Albrecht, Romney, Cherrington, Payne, Roe, and Romney (1986), fraud was found to be prevalent in most organizations having the right incentives and control mechanisms. It is a great problem that requires an effective approach determination and considerations. They suggested that fraud in auditing is inappropriate and every organization strives never to exhibit it. It is a process that should always be avoided at all costs. Dishonesty renders all forms of audits to be inappropriate, becoming unsuitable for all the sustained processes. There is a need to look for the different aspects that are necessary in ensuring that proper components have been completed in due course. According to Palmrose (1987) Dishonesty is something that auditing seeks to eliminate as much as possible, a number of studies have evolved trying to explain the way in which fraud issues have been addressed. Fraud has been a great and increasing concern, highlighted by many studies, but the most appropriate channel to address it has not been

found (Albrecht et al., 1986). Some topics that have preoccupied researchers in the 1980s include fraud in the processes being conducted during an audit. Among these topics is fraud risk assessment. Auditors are very worried about assessing fraud risk strictly because it may cost time and effort to show negative results (Palmrose, 1987). Also, theories of behavior, such as fraud risk factors, have also emerged; some papers have provided evidence of fraud detection by testing credibility in the form of questions (red flags). Another curve of studies has evolved, one of which is the related aspect of predicting fraud. Regarding the assessment of the probability of cheating, it has been stated that there is a high standard of judgment that must be made separately from assessments related to normal mistakes (Loebbecke, Eining,& Willingham, 1989). Albrechet al. (1986) conducted the first experimental research addressing the advantage of red flags to predict fraud. There also has been controversy about predictors of fraud. A study by Loebbecke, Eining, and Willingham (1889) suggested that assessment of the possibility of a fraud is considered a high-level judgment, and there must be a distinction between errors and fraud. Thus, the issues of fraud are too much a concern to the organizations in terms of how to deal with it. There are a number of key aspects that have been outlined in this decade as studies started to add value in terms of detecting fraud signals in the review process.

3.4.2. Second period (1990s)

It is also important to mention that for those studies conducted in the 1990s, fraud risk assessment was studied but was wider, and the performance factor was added as a unit of measurement. In light of the performance test, auditors have routinely estimated different risk during the audit process. Research by Ponemon and Gabhart (1994) studied the auditor's capacity to recognize an auditor's efficiency and probity and whether it is affected by a level of moral thinking. Auditors at a higher (lower) level on a moral thinking scale are more (less) likely to realize the fraud risk of auditing that is competent but unethical (Epstein & Geiger, 1994). Other studies have illustrated prediction accuracy. A study by Calderon and Green

(1994) examined the positive relationship between financial analysis with earnings and the possibility of fraud. They authors found a risk of error in that fraud can be seen as missing when it is actually present. Another study conducted by Beasley (1996) examined the relationship between likelihood of incidence of fraud and corporate government characteristics, which have many variables in terms of rate of growth, prior year results, CEO tenure, and title of the board chair. Moreover, a related topic is the auditor's unaided fraud risk assessments. A study by Hackenbrack (1992) manipulated conditions to include either all diagnostic cues or a mix of cues; the outcome clarified that auditors' fraud risk assessment was complicated by non-diagnostic cues. In line with this study, Zimbelman (1997) tested how fraud assessment affects auditors' attentions by manipulating red flags and risk assessment; the results showed that the level of attention increased either with cues or not. Another topic is the factor of experience. Hackenbrack (1993) examined how experience in various customer settings affects auditors' fraud risk assessment. Earlier literature had found that fraud goes undetected when auditors neglect to understand the conditions in which their customers work. For instance, Zimbelman (1997) utilized perceptions of relative aggressiveness amongst internal and external auditors to explore the identification of corporate irregularities. Some studies have gone into greater depth on the subject of decision making and change of views as the influence of individual difference factors (e.g. personality traits) on audit judgment and decisions (Hull & Umansky, 1997; Sweeney & Roberts, 1997). During this period some studies highlighted the issue of incentive and fraud, examining how auditors can respond. Moreover, the relationship between incentives and clients indicate the impact of the changes in the auditors' opinions (Schultz & Hooks, 1998). Another related topic has been investigated through the ambiguity of information or when there is intentional misstatements and how extent of its impact on the decision, the results show that there are positive reactions when there is clear information (Zimbelmanan & Waller, 1999).

3.4.3. Third period (2000s)

Another relevant study by Knapp & Knapp (2001) concluded that auditors such as managers are more accurate in their risk assessment when compared with juniors when they were assigned financial statements which contained fraud involving analytical transactions and fraud risk assessment, which is tied with the standard audit opinion, was another topic of investigation which may facilitate the opportunity of fraud (Butler, Ward, & Zimbleman, 2000). Meanwhile, another factor that plays a vital role is time pressure and the extent of its impact on the audit process, resulting in uncontrolled behaviors such as fraud (Braun, 2000). Since a review by Smith (2003) on Behavioral Accounting Research (BAR), the area of connected behavioral research and BAR specifically has prospered. The BAR literature has developed in breadth and quality. This change reflects an essential pattern in BAR: the reference disciplines and the objects of auditing and non-auditing behavioral analysts have expanded. The basic behavioral leadership and psychological literature, which stimulated a critical segment of the developing BAR research up to the late 1980s, kept on having a huge impact on BAR. Likewise, we give evidence proposing that fraud risk assessment models that consolidate financial data to non-financial measures (NFMs) can help avoid these disappointments. Accordingly, understanding the different NFMs for the industries in which an audit customer works and comparing the NFMs to reveal the financial results can be powerful fraud detection tool (Cain, Loewenstein, & Moore, 2005). Huge differences between financial data and NFMs should work as a notice to auditors and lead them to suggest a pointed conversation with client administration, to confirm and test the administration's responses, and, if necessary, to function as a tipping moment where forensic experts are assigned out to the engagement. The role of behavioral research has developed in other sociology disciplines. Experimental financial matters have moved into the standard realm. This literature has affected BAR. Evans, Hannon, Krishnan, &Moser (2001) have started to seek after behavioral issues effectively, as the study predict that promotion availability in organizations and will interact to affect employee fraud (stealing), the results

shows that there is an affect fraud in organizations. Another segment of literature is on brainstorming such as Carpenter (2007) looked at how individual differences in traits exert skepticism, which helps the group fraud risk. The reliable utilization of professional skepticism all through the audit process keeps on being of most concern to the public company accounting oversight boardPCAOB and audit firms. By providing knowledge about how individual differences in professional skepticism influences the results of group brainstorming, this research helps to address this issue. The purpose of fraud risk brainstorming as sketched out in PCAOB AS 2110 is to enable auditors to consider how and where the entity's financial statements may be helpless to the circumstance of material misquote due to fraud and to reinforce the significance of a proper mind set of expert skepticism. This requires auditors to finish a fraud brainstorming meeting as a major aspect of the planning phase of the audit. Besides sketching out the reason for the brainstorming session, the standard gives little direction concerning how to best conduct an effective and successful brainstorming session.

3.4.4. Fourth period (2010s)

Recently, a significant number of researchers have focused on investigating possible fraud risk factors to predict, assess, and detect fraud. For instance, Hammersley (2011) analyzed the usefulness of red flags in fraud detection. Afterward, by setting up SAS 53 (1988), many researchers have focused on assessing the risk of financial statements to discover the possible risk factors. Other researchers extended the model of Hammersley (2011) to take in a non-fraud test and furthermore find the best model for evaluating risk and fraud detection. The questionnaires were used by various studies to discover the significance of fraud risk factors examined through SAS 53 or SAS 82 in fraud aversion and detection. For instance, Stroebe, Nijstad, and Rietzschel (2010) used 47 variables to assess the likelihood of fraud occurring in financial statements. They also compared the auditors who used the variables determined in SAS 82 with auditors who did not utilize the checklist and found that the conclusions were

less viable among the main groups. They researched the most significant factors that were used by auditors to discover how auditors' statistical factors affect the significance of fraud risk factors for misrepresentation of financial statements. The researchers concluded that operations and money related to permanence factors have the most impact on fraud prevention, followed by administration attributions and lastly by industry qualities. The American Institute of Certified Public Accountants issued diverse guidelines to demonstrate the negative impression of fraud on the accounting and auditing functions and furthermore to improve the level of fraud detection by presenting several fraud risk factors (SAS 53, SAS 82 and SAS 99). Among various standards, SAS 99 is the main standard adopted from the fraud triangle model. A potential advantage of brainstorming is that it can empower auditors with lower levels of professional skepticism to more appropriately assess risk on a personal basis post-brainstorming. Since we found that group members presented the more skeptical individuals as the best individuals, and highly skeptical individuals had higher first risk assessments, we focus our investigation of post-brainstorming risk evaluation on low-PS members. The findings of this research show that individual differences in natural expert skepticism of group members can greatly affect the results of fraud risk brainstorming regarding the group's perceptions of fraud risk. In both low and high circumstances, groups that contain one or more members with high trait professional skepticism assess the general risk of misrepresentation in financial statements higher than groups that do not contain any people with high attribute professional skepticism. However, a great distinction in risk recognition for these groups across high- and low-risk conditions shows that the aimed incorporation of these high-PS members does not adversely affect the efficiency of the audit by making the group deliberately overestimate the risk of fraud (Chen, Trotman, & Zhou, 2015; Hammersley, 2011). These outcomes recommend that the synergistic properties of brainstorming make it workable for those with a high level of expert skepticism to positively affect the skeptical awareness of the group. Two researchers, Hurtt, Brown, Earley and Krishnamoorthy, (2013) and controllers, PCAOB have underlined the significance of

practicing a suitable level of professional skepticism when leading an audit. However, professional skepticism remains a hard idea to characterize and measure. Likewise, it is regularly hard to decide whether an absence of skepticism is the fundamental cause of audit insufficiency, and if so, what factors led to the absence of skepticism. The purpose of this literature is triple: expand the work of Moore, Tanlu, and Bazerman (2010) by incorporating research identified with auditors' expert skepticism to recognize antecedents to both skeptical judgment and skeptical activity; identify regions where studies are missing on specific dimensions and propose avenues for future research; and discuss the implications of research outcomes for controllers and auditor professionals. The researchers demonstrated that auditors approach audit with the goal of being professionally skeptical, and they regularly react to hazard by evolving behaviors, for example, by extending budget audits' time, identifying more inconsistencies, and negotiating all the more forcefully with clients. Additionally, auditors' behaviors are influenced by cultural differences, which show that culture affects values and these qualities affect proficient and audit judgment. Moreover, study by Kim and Trotman, (2015) has shown that at the point when professional skepticism is discovered lacking by the PCAOB and the SEC, researchers have noticed the following as conceivable clarifications: individual auditor qualities may affect the capacity of an auditor to recognize circumstances where extra work or investigation is required; oblivious bias may affect an auditor's judgments or activities; and absence of knowledge, experience, or professionalism may hinder skeptical judgments. Among the topics that have recently touched on financial incentive programs and its association with fraud, there are several incentive programs that include individual, team-based, and competitive schemes. Among those schemes that have been highlighted lately is the tournament incentives, an article by Sheremeta (2016) stated that with a specific end goal to spur workers, a supervisor or manager must decide how to design a reward structure that triggers the highest potential performance from the staff. The manager can compensate workers based on their relative performance. According to Dechenaux, Kovenock, and Sheremeta (2015), this can help in

reducing the cases of cheating and dishonesty in any organization. In their first paper, Dohmen and Falk (2011) showed that when monitoring is expensive or inconsistent, rank-order tournament can exceed other compensating plans, including piece-rate and fixed wage contracts. The researchers recognized many advantages of utilizing tournaments in the work environment. Not only do tournaments make capable focused motivators, spurring people to exert effort well above expectations from the standard basic model, but they likewise give non-monitory incentives in the form of acknowledgment and winning and of fraud. When compared with other compensation plans, tournament requires less data about individual performance. Therefore, one could be tempted to make a suggestion for utilizing tournament, like a fraud-reducing tool, in the work environment over different types of contracts. However, it is critical to perceive that using persuading powers is accompanied by a cost. Rank-order tournaments make a few winners to the detriment of various failures, prompting an imbalance of adjustment and demoralization of low-capacity workers. Tournaments additionally motivate workers to take part in more helpful behavior as well as supportive conduct and avoid practices such as cheating and dishonesty. Finally, before utilizing tournaments in the working environment, managers ought to survey the working environment conditions and attempt to adjust the conditions to be more favorable for utilizing tournaments (Connelly, Tihanyi, Crook, & Gangloff, 2014). Given the trade-off between tournaments' advantages and disadvantages, managers ought to assess whether the potential advantages of utilizing tournaments exceed the costs given their particular work contexts. To sum it all, in the above-discussed literature we have detailed the transformation of auditing techniques which have taken place over the past decades. Despite the evolution of auditing having a complicated history, the paper has also highlighted several desirable auditing principles. The auditors' roles became more complex and harder as the accounting principles changed and became easier with the utilization of internal controls. A significant number of researchers in the discussed literature have recommended further studies to better understand the impact of using internal controls in auditing. Also, further studies would allow a more detailed

evaluation of the literature, which frequently measures dishonesty and cheating by methods of untruthful self-reports, and it would capture one more critical dimension of staff behavior. Finally, all the authors have concluded that auditors' responsibilities for certifying and testing organizations' financial statements are the backbone of global businesses.

Table 8. Fraud studies over four decades

Fraud Studies	
1980s	Albrecht & Romney (1986); Kielman (1987); Palmrose (1987); Loebbecke, Eining, & Willingham (1889); Wining & Willingham (1989)
1990s	Hackenbrack (1993); Ponemon & Gabhart (1994); Epstien & Geiger (1994); Calderon & Green (1994); Beasley (1996); Hackenbrack (1992); Zimbelman, (1997); Hull & Umansky (1997); Sweeney & Roberts (1997); Zimbelmanan & Waller (1999); Schultz & Hooks (1998)
2000s	Butler, Ward, & Zimbleman (2000); Pram (2000); Knapp & Knapp (2001); Smith (2003); Evans, Krishnan, & Hannon (2001); Loewenstein (2005); Carpenter (2007)
2010s	Moore, Tanlu, & Bazerman (2010); Dohmen & Falk (2011); Hammersley (2011); Stroebe, Nijstad, & Rietzschel (2010); Chen, Hurtt &Brown (2013); Earley (2013); Connelly, Tihanyi, Crook, & Gangloff (2014); Kim & Trotman (2015); Trotman & Zhou (2015); Dechenaux, Kovenock, & Sheremeta (2015); Sheremeta (2016)

3.5. Regulations

Auditing is an essential function in a company. It helps the investors to understand the financial position and to assess the return that they will get from their investment. Many financial scandals have been experiences which portray failure. They have created doubts about the effectiveness of the financial statements. For this reason, policymakers have come up with a variety of regulations to help solve this problem. Since 1980, many laws have been created on auditing to help make the practice a successful one. Many related issues have been discussed by researchers over the years. These issues have translated into what is law and common practice in auditing. An example of this includes regulations to ensure the security

of transactions. The Security Exchange Act of 1934 is among such laws, which stipulate the guidelines to be followed for transacting companies to avoid fraud. Among other issues that researchers have discussed that influence the practice of auditing is the review process and the provision of incentives that affect the provision of auditing services. There are laws regarding how auditors are hired and compensated. This literature will be discussed together with the effect of the same on the practice of auditing. Many writers over the years have explored the issue of auditing regulation and related topics. They have tried to give their views about issues related to law. In the past, these rules were generally known as accounting principles which governed the profession of auditing. The paper will look at these rules, including those that concern the review of auditors. The literature review in this work will discuss regulation in auditing according to various writers and issues related to that from the 1980s. The literature review will also assess the various approaches used to investigate the conflicts of interest in auditing.

3.5.1. First period (1980s)

Among other issues that have emerged in auditing is the process of reviewing auditors. It is an essential process as it helps regulate the action of the auditors. As they conduct the process of auditing, they are fully aware that they are responsible for it. According to a study conducted by DeAngelo (1981), the review process has numerous implications for the daily activities of an auditor which are disciplined by regulations. To ensure that the auditor adapts an effective process, it is necessary to take time so that considerations and the expected framework are achieved. It is crucial to ensure that limiting factors that have a significant impact on the review process are avoided so that the general outlook of the review process is desirable. For instance, in a situation where a firm has incurred expenses regarding a project, it is vital that the auditor keeps track of the costs (Baron & Besanko, 1984). Another study, conducted by Cooke and Wallace (1989) and investigating corporate disclosure practices and audit firms revealed that it is important for an auditor to ensure that they complete the review

process according to the scheduled plan. Among other issues that have emerged in auditing is the process of reviewing auditors. It is an essential process as it helps regulate the action of the auditors. The process involves the audit team assessing the work of a fellow auditor (Courtemanche, 1986). It has a control function to ensure that auditors in the firm provide quality services to the clients, as the process follows a specific hierarchy. The process regulations seek to ensure that the decision made by the auditor is appropriate and to ensure the accuracy of the document provided. The work of the reviewers is to assess any potential inconsistencies that the auditor missed. They also want to understand whether there is enough evidence to support the auditor's final decision. In another issue related to good judgment and justification, the auditor is also responsible for justifying why he or she made the conclusions to the reviewer (Emby & Gibbins, 1988). In a topic related to decision making among groups, there have been some studies that suggest evaluating the positives of collective decision making in the review. Bamber (1983) discussed the importance of reviewers determining the reliability of references and the difference between audit and other group structures.

3.5.2. Second period (1990s)

One of the issues related to this topic is the matter of qualifications; though auditing was practiced by a few companies in this era, there were insufficient laws regarding the qualifications needed (Chandler & Edwards, 1996). In addition, there was no agreed-upon method of conducting auditing, and the people who led the process were viewed with skepticism. However, with time, the requirements for professional auditing have been laid out in the modern world (Jones, 1995; Power, 1997). Among the issues that have shaped the auditing profession are the process of conducting the audit process, standards of entering the profession, and quality control. According to Dye (1993), audit quality is the likelihood that the auditor will give the right information about the activities of a firm in case the performance is poor. Therefore, quality focuses on the auditors' ability to pinpoint breach in the accounting system of a firm and the ability to report it. The demand for regulation in

auditing is real due to the challenges that have been experienced in the process. Baldwin, Cave and Lodge (1999) cited anti-competitive conduct and predatory prices as some of the issues that have given rise to the demand for auditing. In addition to having a lack of competition, companies may act in a manner which does not encourage healthy competition. They may ask for predatory prices, leading to adverse effects. An example is when firms ask for prices which are below cost to eliminate competitors. Cave (1999) indicated that laws help to cover consumers from the impact of market domination. There are issues relating to the consideration of regulations in terms of the relationship between financial incentives and the opinion of the auditor where various researchers have come up with a number of approaches to assess how incentives influence the decisions made by the auditors. In recent years research has focused on incentives arising from audit fees and other services that are non-audit. Using an archival approach, Wright and Wright (1997) reviewed the elements that may affect the decision about whether or not the client should make adjustments. Their findings revealed that the incentive to keep large clients influences the adjustment decisions made by auditors. Apart from the incentives that can thwart the quality of auditing, various relationships may pressure the auditors and influence their decision-making process. Bazerman, Morgan, and Loewenstein (1997) indicated that often the auditors interact with the clients and may be pressured to comply with the clients' wishes. Regulations require them to be also responsible for professional identity by focusing on a quality audit, and the judgments that they make are subject to review. The review aims to assess how they make decisions and to correct any potential biases and errors (Libby & Trotman, 1993).

3.5.3. Third period (2000s)

In this decade, we start by mentioning another issue related to the regulations, which is the factor of independence of the auditor in issuing the judgments. Geiger and Raghunandan (2002) argue that independence is essential to the accuracy of auditors' reports, and that independent auditing is that which is free from bias. It is where the auditor gives an unbiased

view from the process and issuance of the audit report. Various regulations introduced by Congress, such as the Sarbanes-Oxley Act of 2002, as well as the PCAIOB and SEC, have laid out the elements that encourage independent auditing to avoid conflict of interest. Since 2002, there has been growth in the issue of audit regulation. Though there has been progress in audit quality, there are still issues arising from the same. Among these issues are over-auditing and the issue of quality in auditing. Mayhew and Wilkins (2003) discussed the effect of pricing or audit fees and its impact on the quality of services. Reduction in costs may affect the quality of services, while increasing fees may lead to higher prices unless there is a notable improvement in efficiency. While auditing regulators may not focus so much on cost, the main focus should be on value. Other researchers have also reviewed regulations regarding the quality of services provided by auditors. Research on the impact of standards of the quality of auditing services shows that when the wealth of the auditor is subject to litigation and when those involved are aware of the wealth of the auditors, they tend to adhere to set standards. They also prefer stricter standards in such cases. Willekens and Simunic (2007) conducted a similar study to evaluate the flexibility of auditing standards. Their results revealed that auditors increased their efforts to a certain level when the standards were vague. However, in cases where rules are overly ambiguous, the auditors put in minimal effort. Another study by Ye (2009) indicated that when auditors view the toughness of standards as less optimal, they are more likely to prefer vague rules. Another related topic is independence and such issues as client relations, audit fees and services, and auditor tenure. Regarding the relationship, one study declared that there is a negative effect of client importance on partner independence (Carcello, Hermanson, & Huss, 2000), the study related to the relationship by examining whether investor selection of auditors improves independence. Another study by Pike (2003) investigated fees, concluding that high audit fees threaten auditor independence. A study by King (2002) incorporated experimental precepts to look at the group affiliation impact on independence. Other topics were raised in this decade included tax issues and the impact of social priorities on the effectiveness of tax policy (Bird, Martinez-Vazquez,

&Torgler, 2004). Moreover, Kachelmeier and King (2002) investigated alternative methods of taxation, whether direct or indirect, and the extent of the impact for proposed policies before policy application. In terms of the impact of general regulations, a study by Libby and Kinney (2000) aimed to assess the relevance of auditing, financial reporting, and other corporate governance regulatory practices on the choices managers make. The results showed how corporate directors and auditors make decisions based on the nature of regulations bestowed upon different functions in an organization. Other researchers have claimed that regulatory changes may have relieved concerns about auditor independence (Chi, Huang, Liao, & Xie, 2009).

3.5.4. Fourth period (2010s)

Several topics were recently addressed with regard to regulations. Specifically, the impact of regulation on auditing is an issue that has been very widely studied. The essence of studies within this topic is to understand the degree of reliability of the information obtained (Ng & Shankar, 2010). Among other issues that have emerged is the use of the right standards and framing, which is notable in recent studies that the proper rules in place helps to eliminate any limitations in the auditing process. According to Cohen, Krishnamurthy, and Wighty (2010), corporate governance in auditing is essential to make sure that the right international standards in auditing are adhered to. An inappropriate framework hinders the reliability of the auditing process. Research shows that more than half of the audit process faces regulatory framework issues. In light of this, studies have indicated that internal reviews are crucial in coming up with a strong framework which will ensure that qualified audit candidates are selected (Schaefer, 2014; Nelson, Proell, & Randel, 2016), Moreover, a study by Hammersley (2011) indicated that auditors who lack the right regulatory papers conduct auditing without following the international regulatory standards. There are a number of issues that the study identified, including the different problems audits have been faced with trying to factor out the most appropriate approaches that have been sustainably working for the betterment of all

policies and situations (Financial Reporting Council, 2013). As such, behavioral research studies have been expanded by highlighting the main unintended consequences as well as the collective effectiveness of the proposed regulations. However, recently, Cohen, Hayes, Krishnamurthy, Monroe, and Wright (2013) concluded that the unique specialized roles of particular actors serving resolve financial-reporting and contentious accounting issue between the management and the auditor. Similarly, regulation leads to influencing the managers' choices for unique financial management methodologies, including entitlements and real issues. Thus, staff involvement may have affected the productivity as well as the quality. Studies in this last phase have also focused on the issue of reviewing auditors. In other words, researchers in this phase review whether the decisions made by the auditors are independent or are under the influence of some factors. It is essential to have a process that ensures the effectiveness of the audit process (Messier, Quick, & Vandervelde, 2014). Several studies have indicated the benefit of reviewing auditors to ensure quality services, and some studies have addressed the matter of brainstorming as part of decision-making quality, as rules that allow generating ideas to evaluate tasks and to increase the quality (Hammersley, Bamber, & Carpenter, 2010). One of the most recent issues that has affected the regulations in auditing is the technological development used by enterprises. Companies rely on technology to gather information and contribute to decision making. However, decision making is related to risk, and as the amount of information grows, the capacity to deal with it decreases (KPMG, 2013). Information technology (IT) areas within organizations are able to process and record large amounts of data and transactions; however, manually finding mistaken actions among these is costly and wouldn't ensure the needed emphasis. Additionally, data generation is increasing at an exponential rate (Singh, Best, Bojilov, & Blunt, 2014). This raises the risk of not observing a problem within the time to take corrective action. Thus, progress within IT also provides the potential of new auditing rules and internal control approaches. Moreover, the importance of this issue lies in the fact that when the technology evolves and the regulations are not updated, there will be a risk in the audit process due to fraudulent issues

that lead to financial losses. In 2011, the Association of Certified Fraud Examiners assessed that companies lose 5% of their revenue due to fraud (Association of Certified Fraud Examiners, 2018). So in the last decade, the issue of technology and its relationship with regulations has taken on a new curve that allows researchers to expand.

Table 9. Regulations studies over four decades

RegulationStudies	
80s	DeAngelo (1981); Bamber (1983); Baron & Besanko (1984); Courtemanche (1986); Emby & Gibbins (1988); Cooke & Wallace (1989)
90s	Libby & Trotman (1993); Dye (1993); Jones (1995); Chandler & Edwards (1996); Wright & Wright (1997); Power (1997); Bazerman, Morgan, & Loewenstein (1997); Baldwin & Cave (1999); Cave (1999)
2000s	Libby & Kinney (2000); Carcello, Hermanson, & Huss (2000); Geiger & Tan (2002); Kachelmeier & King (2002); King (2002); Mayhew & Wilkins (2003); Pike (2004); Ackert, Gillette, Martinz-Vazquez, & Rider (2005); Willekens & Simunic (2007); Ye, Simunic, & Winter (2007); Simunic & Winter (2009); Chi, Huang, Liao, & Xie (2009)
2010s	Ng & Shankar (2010); Cohen, Krishnamurthy, & Wighty (2010); Hammersley, Bamber, & Carpenter (2010); Hammersley (2011); Financial Reporting Council (2013); Cohen, Hayes, Krishnamurthy, Monroe, & Wright (2013); Singh, Best, Bojilov, & Blunt 2013; Nelson, Proell, & Randel (2014); Schaefer (2014); Messier, Quick, & Vandervelde (2014); Nelson, Proell, & Randel (2014); Association of Certified Fraud Examiners (2018)

In sum, our review of research on these prominent issues and their development over several decades has led us to realize that many of them are interrelated, and they have generated new topics that merit further study. These will help us to fill some gaps and widen the breadth of research in these issues through our empirical part.

One issue is financial tournament incentives and their relationship to behaviour. The trends of recent studies have focused on the financial incentive schemes and their impact on auditor's behaviour. Another matter that we discuss is group issues. Recently, this topic addressed

many issues with financial incentives, group formation in the work environment and its relation to the misbehaviour such as dishonesty and lying. This encouraged us to choose this issue in the same context as the previous one (financial incentives) because both are linked to influence on the behaviour of auditors. We decided to contribute to these lines of research as the current work of auditors is characterised by two factors that we have extracted from the theoretical analysis and the real audit environment: the huge amount of work that takes place under financial incentive schemes; and a remote audit team working on the same project.

Multitasking is one characteristic of auditors' work. Auditors are often asked to work on multiple engagements and implement multiple tasks to keep up with the requirements of their profession (Brown, Sidgman, & Brazel, 2019). The way in which this multitasking aspect of auditors' daily work affects audit quality is one of the main empirical objectives of this thesis (Chapter 1). Another characteristic of the current audit profession is working in teams. Given the global reach of large multinational businesses and regulator concerns, research 'is needed to promote understanding of the specific nature of factors contributing to difficulties in coordination and communication among firms. One way for audit teams to communicate is by using technology as virtual teams. The question is how these kinds of team affect auditor's behaviour (Chapter 2).

CHAPTER 1

Do multiple tasksenhance dishonesty in tournament incentives environment?

1. Specific framework and hypothesis

The financial crisis has brought renewed attention to the functions of financial reporting in periods of sharp financial decline, and it has driven the main debate involving regulators, processes and researchers across the world (Cooper, 2015; Cassell, Hunt, Narayanamoorthy & Rowe, 2019). Particularly, the last financial crisis has detected many audit issues and inadequacies related to auditors. Auditors considered 'guilty' to sign 'clean reports', even with high financially distressed firms (Sikka, 2009; de Jager, 2014). For example, auditors in companies, such as Ernst and Young and PriceWaterhouseCooper, were aware of certain misleading accounting transactions without disclosure (Wiggins, Bennett & Metrick, 2019). This indicated that there are question signs of ethical behaviour by auditors.

Thus, auditor behaviour issues have been under the attention and examination of scholars because it is correlating with audit failure and affecting audit quality and, consequently, firm stakeholders' decisions. Recently, a vast body of research assures that dishonest behaviour is a constant worry and a large number of auditors are engaging in it deliberately (Nehme, Mutawa & Jizi, 2016; Smith & Emerson, 2017). Scholars and researchers assure the need to find out predictors or mitigating factors for dishonest behaviour to avoid audit failure and financial problems (Herda & Martin, 2016; Nehme, 2017).

Therefore, given the importance of this issue, there is a need to explore the auditor's behaviours and the factors that may influence him or her when making a decision. Among those factors, financial incentives are common practice in many audit organisations (Omar & Stewart, 2015). Basically, the objective of these incentives is to induce employees to put more effort into their work. Specifically, tournament incentives could provide the opportunity for the competing parties to expand their efforts and to improve performance in regard to outputs (Armstrong, Larcker, Ormazabal & Taylor, 2013). However, competitive incentives may not always have positive impacts in terms of behaviours.

Prior literature investigates behaviour in tournaments over the last decade, highlighting that inenvironments with competitive incentives generally increase dishonesty (Harbring & Irlenbusch, 2005, 2011; Dechenaux, Kovenock & Sheremeta, 2015; Balafoutas, Czermak, Eulerich & Fornwagner, 2017). Moreover, tournament incentives have shown to increase lying when individuals are asked to report their own performance (Faravelli, Friesen & Gangadharan, 2015). Specifically, tournament incentives for auditors have the potential to lead to misbehaviour, such as dishonesty on their responsibilities (Kimbrough, Sheremeta & Shields, 2014).

One limitation of prior research is that most studies concentrate their experiments on simplified environments, in which people are assumed to work in a non-multiple task environment. In reality, however, people often work in multiple tasks environment (Mullis & Hatfield, 2018). Some experimental research studies, such as Al-Ubaydli, Andersen, Gneezy and List (2015) and Rubin, Samekand Sheremeta (2018), investigate how individuals work on multiple tasks while facing piece-rate and fixed-wage contracts. To the best of our knowledge, the issue of multiple tasks has not been addressed in tournaments. This limitation is a great opportunity to use the experimental methodology to establish the best practices of using multiple tasks in a tournament environment and to test dishonesty.

In light of this, multitasking has currently been considered as an imperative element of day-to-day life. As a result of the unlimited daily obligations, individuals plan and get involved in various tasks simultaneously. Multitasking has been regularly described as the process by which numerous tasks are performed at the same time (Breaugh & Cascio, 1978), as multitasking includes taking tasks in parallel or rotating between tasks (i.e. going back and forth among numerous responsibilities).

Precisely, multitasking is a shared face; noticeable in financial organisations. Particularly, within a business environment, multitasking becomes a pervasive piece and is increasingly shared, given the advancements in services delivery and information technology that up-surge the occurrence and simplicity of entrance to electronic information (Appelbaum, Marchionni&Fernandez, 2008). Multitasking implies a special high-stress level in auditing (Herda, Cannon & Young, 2019). This is due to most auditors being involved in the multitasking process, which eases the desires of the customers as well as the audit firm. According to Bhattacharjee, Maletta and Moreno (2013), the prevailing environment for auditors is that they often work on multiple tasks and multiple clients simultaneously in the same sessions. In this sense, multitasking has become important for auditors because it allows them to accomplish their various audit duties and help to meet the requirements of their clients (Mullis & Hatfield, 2018).

It is worth noting that the nature of multitasking has unique characteristics, which could show a positive relationship with behaviour. To some extent, multiple tasks might contribute to reducing dishonest behaviour. This is based on the fact that multitasking has a cognitive loadcharacter, which is achieved when people have to do different errands simultaneously (Lavie, 2010). In this sense, it may have a positive outcome by promoting the elimination of distractions where people have no the ability to think beyond this load (Dzubak, 2008). This is the opposite of dealing with non-multiple tasks, as it provides an opportunity to think beyond the content of the task. This is supported by other studies: that using more load have shown that irrelevant distraction is decreased unlike low load (Lavie, Hirst, de Fockert & Viding, 2004; Lavie & de Fockert, 2005; Forster & Lavie, 2008).

Another interesting character of multitasking's effects is concentration. Multitasking shows that individuals are able to perform their tasks and complete them effectively by focusing only on the execution of certain tasks. In multitasking, an individual participates in more than

one task and allocates attention to the content of those tasks, thereby reducing the attention that can be devoted to responding to irrelevant distraction. According to Lavie (2010), the main objective of the attention principle is to apply determinants of focus that allow people to disregard irrelevant distraction. Another study states that there is a positive correlation between tasks that require attention and disregard for unrelated motives (Fockert, Rees, Frith & Lavie, 2004).

Unlike working on a single task that facilitates attention to an irrelevant motive, for example, studies in psychology (Rubinstein, Meyer & Evans, 2001; Monsell, 2003) show that when you have to do more than one task in one-time frame, multitasking requires tasks changes, which is commonly associated with switching costs; thus, the response to any irrelative motive is slower after moving between tasks. This fact indicates that when the ability to concentrate on a task is examined during an influential factor, the one who performs one task can interact with that factor; however, the one who is multitasking cannot. Moreover, the failure of deep thinking is another character of multitasking, where a study – when comparing people who do multitask with only those who focus on one activity – indicates that some features of the brain are interrupted while performing multiple tasks. Indeed, deep thoughts and continuity are disrupted while multitasking (Dzubak, 2008).

Through the logical cognitive process of the results of these previous studies, individuals are only able to accomplish their tasks and complete them effectively by focusing on the content of the task. Thus, multitasking helps to eliminate distractions and does not allow concentration in other activities beyond the contents, due to the cognitive load and mental inability of deep and continuous thought. This may indicate that it can facilitate cognitive processing of behaviour and may limit dishonesty that can appear. According to this, we can hypothesise that multiple tasks may decrease dishonest behaviour in a tournament incentive environment.

Thus, the objective of this study is to analyse whether the possibility of multitasking environments affect dishonesty among workers when it is being applied under incentive-based tournaments. This study used experimental methodology in different environments that simulate the work – whether laboratory or online environments, or whether interactive or non-interactive – between the samples that were used as a proxy for the auditors. According to our knowledge, our experiments have analysed for the first time the dishonesty between performing one task and multiple tasks under tournament incentives. The main contribution of the present study is to address the effectiveness of multiple tasks in the audit environment as auditors perform more than one task at the same time. More importantly, this study provides evidence about how the usefulness of multitasking significantly decreases misbehaviour among auditors. Specifically, it is critical because it helps to shed light on the implications of incentives based on tournaments and how its reactions towards behaviour under multitasking environments.

This is an interesting field of research because the conclusions of the findings can have important implications. The study realises the importance of multiple tasks in organisations and the extent of its effectiveness in productivity. As the incentive-based tournament is a common practice in many organisations nowadays, the tendency of an organisation's employee is to engage in untruthful reporting is likely to depend on this kind of financial incentive that not only negatively reflects on overall company performance but also involve investment, society and financial crises as a whole. Therefore, the result of the study highlights the effectiveness of multitasking for several levels of administration and control as well as employee incentive program legislators in organisations. Moreover, it has provided significant evidence that multiple tasks assigned under tournament incentives is decreasing employee misconduct, such as lying and forgery in the review process, which ultimately affects overall performance.

2. Experiment 1

We conducted two different treatments to examine the relationship between multitasking and dishonesty in tournament-incentive environments. We compared among doing one task and multiple tasks through two real different tasks (i.e. discovering errors and voice recording a simulated conference call) to check the degree of dishonesty through the types of tasks and how the possibility of multitasking can mitigate dishonesty.

2.1. Methodology

2.1.1. Participants

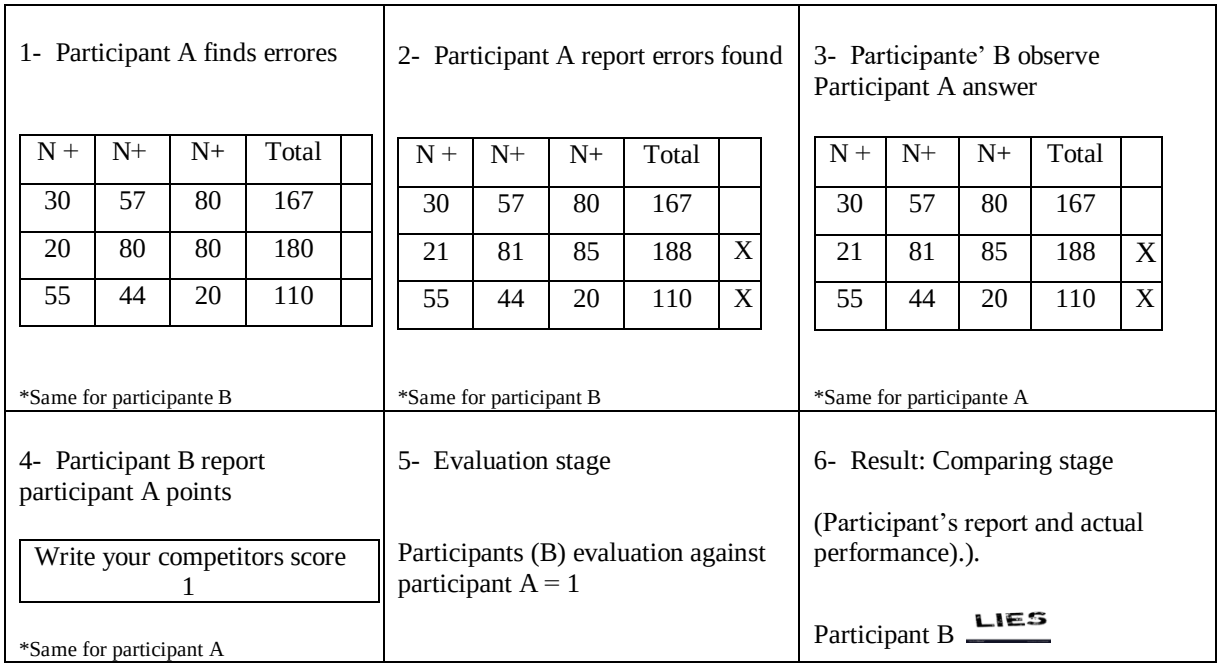
The participants included 117 students of accounting as a proxy of auditors because it is normal during this type of general analytical and review activity carried out by the auditors (Bonner & Walker, 1994). The educational level ranged from a general university bachelor's degree. Participants were divided randomly into two groups: (1) themultiple tasks group (56 participants, 59% women, the average age was 21) and (2) the non-multiple tasks group (61 participants, 40% men, the average age was 21).

2.1.2. Design and procedure

We manipulated multitasking among two conditions: (1) multiple tasks group and (2) non-multiple task group. Participants were randomly divided into two conditions: (1) a single task was given only one task to perform versus (2) multiple tasks were given two different tasks to do at the same time. The first group was given a task of a matrix that represented discovering errors. There was a list of 30 calculations, and 10 of them were incorrect. In this task, participants had to find as many mistakes as possible. They received one point (equal to one Euro) if they correctly found a mistake. They got a minus 0.5 points when they identified the right result as false. When finished, the participant's sheet was collected and then redistributed to a different participant. At that moment, participants were informed that they were in competition against others. In turn, they were asked to evaluate the opponent's sheet

and calculate the number of points earned. So, they freely reported about the performance of the other competitor (honestly or falsely) because they had to place the opponent's sheet in the shredder machine to be destroyed (but the shredder did not carry the cutting blades). Then they delivered the report (Figure 2).

Figure 2. Experiment 1 Single task (sample of stimuli)



The second group represented the multiple tasks condition. In addition to the first task, during the process of evaluating the opponent's sheet, they had to perform another task at the same time, which was voice recording a simulated conference call at the workplace or meeting. In that mission, participants were asked to listen carefully to the audio content in order to answer questions when the audio finished. The score was the same as in the previous activity in non-multitask condition. Then they had to place the opponent's sheet in the shredder machine as well as submit the report and the answer sheet of the audio. Definitely, we compared the number of points reported by the participant to achieve the main objective of this experiment, including the actual points to measure dishonesty in both conditions (the multiple tasks and non-multiple tasks) to test our hypothesis (Figure 3).

Figure 3. Experiment 1 multiple tasks (sample of stimuli)

<table>
<tr>
<td>1- Participant A find errores

<table>
<tr><td>N +</td><td>N+</td><td>N+</td><td>Total</td><td></td></tr>
<tr><td>30</td><td>57</td><td>80</td><td>167</td><td></td></tr>
<tr><td>21</td><td>81</td><td>85</td><td>188</td><td></td></tr>
<tr><td>55</td><td>44</td><td>20</td><td>110</td><td></td></tr>
</table>
*Same for participante B</td>
<td>2- Participant A report errors found.

<table>
<tr><td>N +</td><td>N+</td><td>N+</td><td>Total</td><td></td></tr>
<tr><td>30</td><td>57</td><td>80</td><td>167</td><td></td></tr>
<tr><td>21</td><td>81</td><td>85</td><td>188</td><td>X</td></tr>
<tr><td>55</td><td>44</td><td>20</td><td>110</td><td>X</td></tr>
</table>
*Same for participante B</td>
<td>3- Participant B observes Participant A answer.

<table>
<tr><td>N +</td><td>N+</td><td>N+</td><td>Total</td><td></td></tr>
<tr><td>30</td><td>57</td><td>80</td><td>167</td><td></td></tr>
<tr><td>21</td><td>81</td><td>85</td><td>188</td><td>X</td></tr>
<tr><td>55</td><td>44</td><td>20</td><td>110</td><td>X</td></tr>
</table>
*Same for participant A</td>
</tr>
<tr>
<td>4- Participant B report participant A points + Conducting task 2 (listening to the audio questions later)

Write your competitors score 1

*Same for participant A</td>
<td>5- Evaluation stage

Participants (B) evaluation against participant A = 1</td>
<td>6- Result: Comparing stage

(Participant’s report and actual performance).).

The participant B LIES</td>
</tr>
</table>

2.2. Result and discussion

The results show that the level of dishonesty was different between the multiple tasks group and the non-multiple task group. People who worked in non-multiple tasks group were highly likely to perform more lying than those who worked in multiple tasks condition. The dishonest percentage in the non-multiple tasks condition was 60.6%, while in the multiple tasks condition was only 41.1% (Table 10), as we identified the effect on the magnitude of dishonesty among samples for each conditions (Table 11). We found strong evidence that there is a statistically significant difference between the two conditions, as the chi-square test shows ($x^2(1, N = 117) = 4.482$; $p = 0.03$; $\eta = 0.196$), asthere is no difference respect the gender and age variations. Therefore, we conclude that multiple tasks mitigate dishonesty, while the non-multiple task may enhance dishonesty. So, without a doubt, the results show that the environment that employs multitasking reduces the chances of dishonesty, unlike the work environment that does not have multitasking.

Table 10. The rate of dishonesty in the multiple tasks and non-multiple task conditions

Conditions	Honest	Dishonest	Total sample	% Dishonesty
Non-multiple task	24 (42%)	37 (62%)	61	60.6%
Multiple tasks	33 (58%)	23 (38%)	56	41.1%
Total	57	60	117	*p*-value = 0.03

Table 11. The effect on the magnitude of dishonesty (Non mulitipl task and multiple tasks)

Conditions	Size of dishonesty	Number of participants	% of participants
Non-multiple task	1	20	54%
	2	8	21.6%
	3	3	8%
	4	2	5.4%
	5	2	5.4%
	6	2	5.4%
Multiple tasks	1	6	26%
	2	6	26%
	3	2	8,6%
	4	3	13%
	5	1	4,3%
	6	3	13%
	7	2	8,6%

Although the rate of dishonesty in a multitasking condition is low, this result may be due to influential factors in this laboratory experiment. In real life, many situations are affected by social mechanism, as dishonest behaviour is not conducted in isolation but within some sort

of connection to other people. When there are interactions with others, the social consequences of our behaviour will be affected. According to Gino, Ayal and Ariely (2009), the unethical behaviour of peers can influence the behaviour of an observer. Even the mere presence of peers can affect dishonest behaviours (Pascual-Ezama, Dunfield, Gil-Góme de Liaño & Prelec, 2015). As social norm has a key influence on the decision (Fosgaard Hansen & Piovesan, 2013), being together with another individual in a dishonest status not only increase the dishonesty but also leads people to see the status as less problematic. This is right not only for financial incentives but also because of social incentives (Pascual-Ezama, Prelec & Dunfield, 2013).Thus, we assume the results of the prior mentioned laboratory experiment were seen affected by a probable social interaction concept when the participants were in one place while experimenting.From this point of view; we conducted another experiment but in a way that social interaction is absent. The participants were anonymous and separated from each other. We propose to test the effectiveness of multitasking in reducing dishonesty in the absence of social interaction (see the second experiment).

3. Experiment 2

We conducted a second experiment in Amazon Mechanical Turk (MTurk), which is an online crowdsourcing platform that is designed to aid in recruiting people to complete various tasks, and it considered as being employed as a source of samples for experimental research (Eriksson & Simpson, 2010). Here, we replicated Buser and Peter's (2012) multitasking experiment design that used two different tasks (i.e Sudoku and Word Search) to examine how performance affects multiple tasks (as switching tasks) and a single task. In our experiment, we conducted three different treatments (i.e single tasks, switching tasks and multiple tasks) to examine the dishonesty in a single task and two different multitasking environments with tournament incentives and when social interaction is absent.

3.1. Methodology

3.1.1. Participants

The number of participants was 136 MTurk workers. Participants were divided randomly into three conditions: (1) single task condition (44 participants, 40% women, theaverage age was 24), (2) switching tasks condition (42 participants, 45 % men, the average age was 25), and (3) multiple tasks condition (50 participants, 44 % men, the average age was 24).

3.1.2. Design and procedure

Once MTurk participants were assigned to participate in the experiment, all instructions and rules were sent computerised to all participants.

Single task

In the beginning, participants in single-task condition were informed that they had to answer only one type of task (i.e. search words puzzles), which appeared on each page in sequence. In the word search task, the participants were requested to find specific words, for example, fruit names through big-letter boxes. In the last electronic page, which contained a word search puzzle,we asked the participants to find as many words as possible from a word list below the puzzle without writing the words (i.e. only writing a number of how many words that found). We informed participants that they were in a competition stage with the other two participants (fake participants) who had already answered this task. We showed the participants the other peer's performance (i.e. only the number of words found by the competitors in this word search puzzle). As they were informed that the task was under a financial tournament scheme, the participant who obtained the lowest number of words among the three competitors would not be rewarded. In the last stage, we had already made a limited number of words that could be found in the word search puzzle. Thus, in case the participant reported himself or herself more than four words, then he or she would be considered as dishonest.

Switching task

Participants in the switching tasks condition were informed that they had to do different puzzles (i.e. Word Search and Sudoku), where those tasks appeared on the screen alternately. The participants were required to answer each task during each round separately. They had to answer tasks by switching between the Sudoku task and Word Search tasks. In the task of Sudoku 5×5, the participant was requested to fill in the missing numbers according to the appropriate cell. In the Word Search task, the participant was requested to find specific words, for example, fruit names through big-letter boxes. Participants had to alternate between tasks when they finished each task and directly forwarded it to the next task. On the last page, they did the same as the participants did in the first condition.

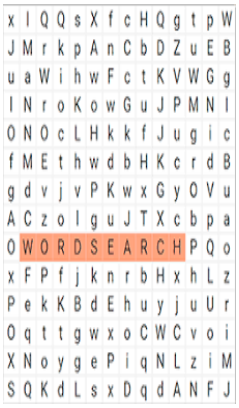
Multiple tasks

In the multiple tasks condition, participants had to perform two tasks at the same time in each round to find a word in the word search puzzles and to answer the pop-up-box questions that appeared on the same screen that asked participants to answer the questions by (Yes or No). For example, is the 5 odd numbers? Then, on the last page, they did the same as the participants did in the first and second conditions (Figure 4).

Figure 4. Single task, switching task and multiple task (sample of stimuli)

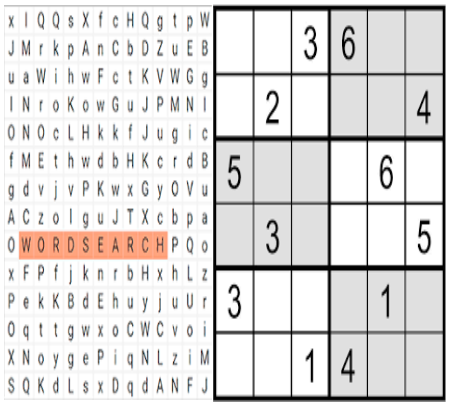
(Single task)

1- Several Word Search Puzzles (i.e. fruit name)



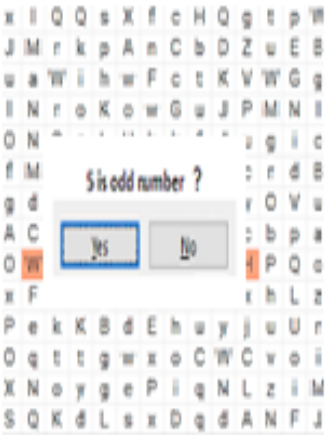
(Switching task)

1- Several Word Search + Sudoku Puzzles (Tasks appeared on the screen alternately).



(Multipletask)

1- Word search + the pop-up-box questionson the same screen (at the same time).



2- The last webpage (Competitive stage: tournament incentives).

R	V	J	O	R	T	S	B
A	E	J	M	P	E	E	C
R	P	N	W	Z	R	V	A
T	C	K	A	P	O	L	I
I	B	U	Q	T	R	E	T
Q	Z	S	J	S	C	B	C
W	P	I	L	P	T	A	E
G	F	C	J	P	V	I	T
W	Y	I	Y	U	J	R	E

(Pilot, Zero, Degree, Accounting, Algebra, Demand, Supply, Services)

3- Participants 'record (fake participants)

Competitors	words
participant 1	**5**
participant 2	**3**

4- Participant report his/her score

How many words you have found ?
Select from the drop list
1
2
3
4
5
6
7
8

5- Measurement (if N > 4 = LIES

3.2. Results and discussion

As expected, the results assure that multitasking can reduce dishonesty, even when social interaction is absent. We found strong evidence that there is a statistically significant difference between the three conditions as the chi-square test shows (x^2 (2, *N*= 136) = 14.358;

p-value = 0.001; η= 0.325), as there is no difference respect the gender and age variations Although in particular, we again applied the Pearson Chi-Square test between each pair of conditions to verify that the differences between conditions are statistically significant. We found that there was a statistically significant difference between the single task and switching task conditions **(**$x^2(1, N = 86) = 12.363$; *p*-value = 0.001; η= 0.379**).** We also found statistically significant differences between the single task and multiple task conditions ($x^2(1, N = 94) = 8.131$; *p*-value = 0.004; η = 0.294). These findings show that there are clear differences between multitasking, whether switching tasks or multiple task conditions, and non-multitasking as the single task condition. Contrary, we found no statistically significant differences between the multiple tasks and switching task conditions ($x^2(1, N = 92) = 0.755$; *p*-value = 0.385; η= 0.091).

In general, the results show that the level of dishonesty was different between multitasking conditions and non-multitasking conditions, where those who work in non-multiple conditions were highly likely to show more dishonesty than those who work in multiple tasks conditions. The dishonest percentage in non-multiple conditions (i.e. singletask) was 61.3%,while in multiple task conditions (i.e. multiple tasks) was only 32%, and the percentage of the other condition (i.e. switching tasks) was 23.8% (Table 12), as we identified the effect on the magnitude of dishonesty among samples for each conditions (Table 13).

Table 12.The rate of dishonesty among the three conditions (single tasks, switching tasks, multiple tasks) in MTurk

Conditions	Honest	Dishonest	Total sample	% Dishonesty
Non-multiple tasks	17 (20%)	27 (51%)	44	61.3%
Switching tasks	32 (39%)	10 (19%)	42	23.8%
Multiple tasks	34 (41%)	16 (30%)	50	32%
Total	83	53	136	*p*-value = 0.001

Table 13. The effect on the magnitude of dishonesty (Non mulitipl task, switching task and multiple tasks)

Conditions	Size of dishonesty	Number of participants	% of participants
Non-multiple task	1	14	51.8%
	2	8	29.6%
	3	4	14.8%
	4	1	3.7%
Switching task	1	6	60%
	2	2	20%
	3	2	20%
Multiple tasks	1	9	56.2%
	2	2	50%
	3	3	25%
	4	2	6.25%

It concludes that there is very strong evidence that multitasking conditions can mitigate dishonesty even if there is an opportunity. So, this result is inconsistent with some studies from two perspectives. First, from a general perspective, the competitive incentives generally

increase dishonesty (Harbring & Irlenbusch, 2005, 2011; Dechenaux, Kovenock & Sheremeta, 2015; Balafoutas, Czermak, Eulerich & Fornwagner, 2017). Second, from a special perspective, there is a positive relationship between dishonesty and opportunity as the studies of Schwerin and Weischelbaumir (2010) and Faravelli et al. (2015) indicate that competitive pressure increases the misbehaviour in the performance of the individual in a task, and it leads to a significant increase in the process of dishonesty in favour of the person when he or she finds an opportunity. Overall, the results of the first experiment (i.e. the laboratory experiment) indicated that participants were involving dishonest behaviour in the non-multitasking condition when social interaction was present. Moreover, the same positive result was found when social interaction was absent in the second experiment (i.e. in the MTurk experiment). Consequently, it is clear from the two experiments that multitasking helps to reduce dishonesty.

CHAPTER 2:

New Organisational Challenges: “Dishonesty” in Face-to-face and Virtual Teams

1. Specific framework and hypothesis

Many companies faced economic criminalization after the 2008 financial crisis, when a great number of cases of dishonesty and fraud were discovered in large firms such as Enron, Parmalat, and Maxwell. They revealed failures in audit quality and especially the capacity of the auditorsas a profession (Umar, Sitorus, Surya, Shauki, & Diyanti, 2017). The cases have helped to stoke controversyconcerningthe role of the audit profession in the economy (Hassink, Bollen, Meuwissen, & de Vries, 2009; Barrainkua&Espinosa-Pike, 2015). Financial auditors are seento be at the centre of these scandals, as it is their responsibility to give assessments of thefinancial current position of organisations (Sikka, 2009; de Jager, 2014; Coffee, 2019).

As a result, auditors'behaviour has been closely examined by researchers and legislators.One of the causes of the financial crisis was a defect in the behaviour of the auditors while they carried out company audits (Baldacchino, Tabone, Agius, & Bezzina, 2016; Smith & Emerson, 2017; Grace, 2017).Many studies have investigated the individual behaviour of auditors and their relationship to misconduct (Garcia, 2012; Judge, Rodell, Klinger, Simon, & Crawford, 2013; Baldacchino, Tabone, Agius,& Bezzina, 2016). However, individual auditors do not work in isolation.They are influenced by their interaction within the audit teams they work with (Cameran, Ditillo, & Pettinicchio, 2017).

Indeed, organisations establish various work teams, face-to-face and virtual, that help in achieving their specific objectives. Nowadays, administrators are challenged to promote strategically elastic organisations in reaction to an increasingly competitive market. The importance of teams, whether face-to-face or virtual, is determined by the organisation's needs. They enable the exchange of diverse levels of skills, knowledge, and experience (Gera, Aneeshkumar, Fernandez, Gireeshkumar, Nze, & Eze, 2013).

In practice, an audit team consists of senior managers, assistants, and one or more audit partners, and which applies a series of measures and decisions that are implemented sequentially to collect sufficient evidence relating to the reporting process and to confirm the financial statements of the clients (Robert-Knechel, Vanstraelen, & Zerni, 2015).Traditionally, the reviewer examines independently the work papers and record review notes are advanced for the preparer to follow up. At the next stage the reviewer meets with the preparer either face to face in a real-time interactive review, which is the common practice when discussing the notes (Gibbins & Trotman, 2002), or virtually, depending on working conditions such as the connectivity of audit team members in different geographicalareas(Payne, Ramsay, & Bamber, 2010).

A large number of studies have provided comprehensive overviews of human behaviour. They have includedcertain variables that are positively and negatively related to dishonesty (Rosenbaum, Billinger, Gino, & Stieglitz, 2014; Jacobsen, Fosgaard, & Pascual-Ezama, 2018). Additionally, there is a study that compares the phenomenon of dishonesty between an individual and a group regardless of the latter's form (Cohen, Gunia, Kim-Jun, & Murnighan, 2009). Su and Wu (2019) showed that bad audit behaviour may be transmitted through teamwork when bad behaviourexists amongstindividuals.The main contribution of this paper is its assertion that overall group climate influences group behaviour in terms of job satisfaction and organisationalbehaviours and commitments. Consequently, unfairness in the group results to poor outcomes, such as employees engaging in bad behaviours that no longer lead to desired outcomes. When group members perceive unfairness in the group, they tend to decrease their engagement with their colleagues, and begin to behave in a way that is more self-centred (Priesemuth, Arnaud, & Schminke, 2013). From this point of view, when groups are formed, the behaviours of their members correlate with the expectations and the desires of the group. Members obey the group even when they know what they are doing is not entirely appropriate. They obey the group because their attitude is one of identifying themselves with

it (Ascı, Cemberci, Civelek, & Gunel, 2015). Another study states that in groups, individuals who have a natural mindset of being obedient tend to obey and conform to the group even when they know what they are doing goes against their personal values (Ascı et al, 2015). Thus, individuals also help groups to make extreme decisions compared with their personal preferences, and this inhibits opposing independent thought and eliminates diverse opinions in the belief that groups cannot be wrong and are always morally sound, even when their decisions maybe faulty. Research that focuses on the audit team exhibits little understanding of the nature of process losses in the audit team environment, what conditions are likely to be present, or how they can be adjusted.However, according to our knowledge, one of the limitations of previous research is that most studies did not address directly the relationship between team formation and dishonest behaviour. Specifically, there is no study comparing the levels of dishonest behaviourbetween virtual and face-to-face groups. So, an opportunity has arisen for scholars to link audit studies and behaviour in respect of such issues. In this context, it is crucial to examine experimentally if group forms (face-to-face or virtual) affect the ability of the auditor to give (dis)honest opinions regarding the financial statements of a firm, as an auditor can be either neutral or presumptive in giving their views.

A wide range of studies have shown that group decision-making results are better than those by individuals, especially in face-to-face interactive sessions. This is because of group thinking (Mukherjee, Dicks, Shackelford, Vira, & Sutherland, 2016). However, one study states that information sharing and overall communication aregreater in face-to-face teams because of increased collaboration between the group members. While this can be seen as an advantage, it may also provide an incentive for team members to collaborate in giving the wrong information. In auditing, when the team members become too close, they might collude in overstating or understating the financial statements of organisations in a way that benefits them(Danilov, Biemann, Kring, & Sliwka, 2013). Moreover, another study indicates that face to face teams tend to mislead because they are able to communicate and familiar

with each other and this can justify morally dishonest behaviour (Kocher, Schudy, & Spantig, 2018).On the other hand, the development ofbusiness,for example through expansion or communication technologies, has brought fortha new form of teamwork in the form of virtual teams. This has become increasingly common in organisations (Gibson & Cohen, 2003). The particularity of this new form of teamwork is that its members do not occupy the same physical space or interact face-to-face (Martins, Gilson, & Maynard, 2004). The main virtue of organising work in teams, both face-to-face and virtual, is that positive synergies can be generated among members, and this leads to increased productivity (Robbins & Judge, 2009). Virtual teams find that their main advantage over face-to-face teams is their flexibility; members can work from different locations and at different times (Lipnack & Stamps, 1999). However, it is also true that even this type of work team can, under certain conditions, generate negative synergies (Robbins & Judge, 2009). In other words, under particular circumstances, the team may be less productive than its individual members would be where they working in isolation. Whenpeople work in virtual teams, it becomes easy for them to hinder and avoid work because managers cannot really have an impact on their performance, because managing people and establishing trust from a distance is difficult (Walther, Bunz, & Bazarova, 2005; Hoch & Kozlowski, 2014). Thus, one study has pointed to the widespread need for managers of virtual teams to be able to supervisethebehavioural environment especially when there is no face-to-face contact (Meyer, 2010).The fact that virtual teams are hard to manage may incentivise personal gains (Shwartz-Asher, & Ahituv, 2019). This is consistent with a study by Pascual-Ezama, Prelec and Dunfield (2013), which found that participants were more dishonest when they were not under supervision.

In the same context, studies by Couch and Jones (1997) and Furum and Michael (2007) concluded that perhaps the most substantial element of the effective virtual team is the essential notion that trust amongst members is assumed, but this is not, or is less, the case when the team is unsupervised. This allows negative synergies to be generated amongst

members; in fact, from a rational perspective; people perform dishonest acts by trading off the expected external interest and costs of the dishonest (Becker, 1968). The present study will simulate unsupervised situations so we expect to replicate previous results related to individuals and face to face teams in situations of low or no supervision. Thus, the characteristics that have been mentioned relating to the virtual team, such as lack of trust and difficulty of supervision, may lead to the assumption of possible misconduct amongst members.

On the other hand, dishonestydoes not only benefit the actor. In these cases, our cost-benefit analysis will also take into account the benefit to third parties (Loewenstein, Thompson, & Bazerman, 1989). Thus, the likelihood of dishonesty increases when the benefits of the action also affect other people (Gino & Pierce, 2009; Wiltermuth, 2011; Erat & Gneezy, 2012; Gino, Ayal, & Ariely, 2013).Thus, given the importance of the role that others in the group play in dishonesty, it would beilluminating to know how other members of group can affect behaviour. Mazar and Aggarwal (2011) manipulated the mindset of the participants in their study, so that one group of participants was induced to operate from a collectivist mindset and another from an individualistic one. They found that the collectivist mindset is a factor that positively encourages dishonest behaviour, that is, it would be increased under a collectivist mindset.Cohen et al. (2009) found that groups tend to make strategic use of honesty, and are more dishonest when benefits are guaranteed. This is partly reinforced by the theory of self-concept maintenance: people may engage in dishonest behaviour when given the opportunity to take advantage of external benefits, while paying attention to their positive perception of themselves as honest (Mazar, Amir, & Ariely, 2008).

Conrads, Irlenbusch, Rilke and Walkowitz (2013) contrasted the influence on dishonest behaviour in terms of setting individual or group objectives. They designed individual goals for one group of participants, and team goals for others. The task consisted of rolling a single

die and reporting the result to the experimenters. Participants received a number of points equal to the result of the die, except that if the result was 6, they would not receive any points. In the condition where an individual objective was set, participants would receive one euro for each point achieved. In the condition in which a group goal was set, the experimenters established random pairs, so nobody knew who was in their team. In this case, the gains for each participant derived from the average number of points obtained by each member of the couple. The authors found that when group goals were set, participants tended to report higher scores, i.e., they lied more. The authors explained this finding as representing the diffusion of responsibility, that is, under situations in which we found ourselves in a group, the feeling of responsibility for our own actions decreases (Wallach, Kogan, & Bem, 1964), and this may facilitate the appearance of dishonest behaviours. A recent study showed that auditors are more likely exposed to the misbehaviour of the intended auditor via their team and through the confidence that comes from familiarity between auditors (Su & Wu, 2018). This indicates, therefore, that members of the group are catalysts for negative behaviour such as dishonesty; this is not the case when they work as individuals. Consequently, it is imperative to realisewhich type of team, whether traditional face-to-face or virtual, commitsthe more dishonest behaviour.Although the presence of other people significantly encourages misbehaviour (Carrell, Malmstrom, & West, 2008; Gino, Ayal, & Ariely, 2009; Pascual-Ezama, Dunfield, Gil-Gómez de Liaño, & Prelec, 2015), some studies highlight important differences between face-to-face and virtual team methods in term of their impact on performance (Kiesler & Sproull, 1992; Rico, Bachrach, Sánchez-Manzanares, & Collins, 2011). A study by Conrads et al. (2013) discussed face-to-face teams. When all teammates must collectively make the decision to be dishonest, the person who proposes—or it could be a number of individuals—for the first time to transgress the norm would be exposed to probable social sanction resulting from a possible refusal of the group to go along with the misbehaviour, or of one of its components to act dishonestly. Group psychology, or social conformity, first defined by Asch (1951), explains how people, out of a fear of social

sanction, prefer to adhere behaviourally to the group. Pascual-Ezama et al. (2015) found that the presence of peers is a factor that inhibits dishonest behaviour; only when participants had the suspicion that more than one of their peers was dishonest would their own dishonest behaviour increase. This is the opposite of what occurs in virtual working. When teamswork virtually it becomes easy for them to inhibitor avoid productive work because managers cannot really have an impact on performance when there is a lack of supervision (Nydegger & Nydegger, 2010). Managing people from a distance is also difficult, as is establishing trust amongst group members (Walther et al., 2005).The fact that virtual teams are hard to manage can also be a motivating factor for personal gain. In one case, a team that had expressed an opinion that was shown to be mistaken blamed it on the failure of communications tools (Nydegger & Nydegger, 2010). Thus, the role of virtual team members may be affected bybehaviour in particular, since the team is self-managed, and therefore members' contributions are less likely to be closely monitored. They have a significant freehand in terms of their behaviour for example; in terms of the amount of effort they make (Chidambaram & Tung, 2005).

Another factor that may negatively affect members of the virtual team is the theory of social exchange. Authentic communication between peers encourages a commitment to reciprocity and more positive behaviour between members. Studies have indicated a positive relationship between members and performance in face-to-face teams because they are in physical contact (Avolio & Gardner, 2005; Liu & Perrewe, 2006). In contrast, we would suppose negative behaviour between virtual team members as a result of the absence of authentic communications.

In this context, factors that influence teams' and interpersonal dynamics will be a key determinant of team behaviour. Perhaps the most substantial factor in establishing the effectiveness of the effective virtual team is the essential notion that trust is assumed;

interaction and social sanction are not so applicable. As we have seen in the case where teams are working face-to-face, social penalties reduce the likelihood of a first person instigating dishonest behaviour (Asch, 1951; Blanco, Caballero, & De la Corte, 2005; Pascual-Ezama et al., 2015). Consequently, it seems that when the team is face-to-face, dishonest behaviour may decrease, while in virtual teams where members interact without physical contact with each other, and dishonest behaviour may increase. Therefore, we hypothesise that there is more dishonest behaviour in virtual teams than face-to-face teams.

Accordingly, the main objective of this work is to study and compare the role played by teamwork, face-to-face and virtual, with respect to work that inhibits or encourages dishonest behaviour. The main contribution of this study is to determine the level of dishonesty in the absence of oversight of audit teams in the work environment. Fundamentally, the study has important applications in business practice (specifically when decisions play a significant role in results or advice), because it is hoped to determine in which situations we should invest more resources to reduce dishonest behaviour. These resources can be economic or behavioural. Auditors' dishonesty could lead to losses for investors and shareholders. This study attempts to determine the extent to which certain types of teams are more associated with this misbehaviour, so that audit companies can reduce its incidence. This may assist in detecting warning signs and thus aid future organisational performance.

2. Experiment

We conducted an experimental study under three conditions: (1) individual; (2) virtual team (online) and (3) face-to-face team. As stated above, our objective was to study the modulation of dishonest behaviour in each case. We measured dishonest behaviour by comparing the reported execution and the actual execution in a word search task, so the absence of difference between those values would mean the absence of dishonesty (and it would mean that the actual execution would coincide with the reported execution).

2.1. Methodology

2.1.1. Participants

The participants in the study were 116 students from the Autonomous University of Madrid (UAM). The average age was 22. All received 30 minute credits for their participation. During the experiment they had the opportunity to win €5, as detailed in the description of the procedure (below). Before starting the experiment, they signed a consent form where they accepted their participation. The task they had been given was explained to them, but not what we were really going to study (i.e., dishonesty). Once the tests were finished, we called them again to explain what the experiment involved, and we asked them to sign another consent form confirming their participation.

2.1.2. Procedure

The participants' basic task was the same under all three conditions. They were placed into groups of eight and they received a booklet that contained twelvewords. They then had to search ten words to be found in each (Appendix 2). Depending on the condition to which they were randomly assigned, they entered the booths alone or accompanied, as we will explain later. Their job was to complete as many word searches as they considered appropriate, within a maximum time of 20 minutes and having completed a minimum of 4 word search puzzles. We gave them the instructions, and after they had finished the task they had towrite down the number of puzzles they had completed on a sheet of paper provided by us in the laboratory. Once this was done, they had to put their booklet in a pile arranged inside the booth and give the experimenter the sheet of paper with the result. They had previously received explicit instructions not to write their name on the booklet. This procedure was similar to those in previous studies that involved non-supervised situations (Pascual-Ezama et al., 2013).

We also explained to the participants that we would only reward the most efficient team or person (depending on the condition). Efficiency was measured by the number of completed

word searches reported/task completion time in minutes. When all participants finished the task, we publicly announced within each session and group of eight who or whom had been the most effective and we paid them. We collected the booklets from each group only when all participants had left the lab. We had previously marked the pile of booklets placed in each of the booths with invisible ink. We identified the participants' booklets with a ultra-violet light flashlight, which allowed us to compare the actual performance with the performance reported by each participant and therefore check whether it matched or not. We asked participants to indicate the number of completed word searches. Therefore, to calculate actual efficiency, we only took into account the word searches that contained all the words to be found.We randomly assigned participants to each of the experimental conditions.

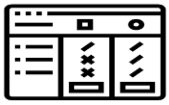
For the individual condition (N = 31), the participants each occupied a booth independently. We explained to them that we would reward €5to the person who had the highest performance within each group of eight people. For the virtual team condition (N = 32), we divided the participants randomly into pairs, or a trio when the number of participants was odd (a situation that occurred when a participant did not attend, or when an odd number of people was registered in a certain time frame). Each team members given a piece of paper randomly (they did not know who their teammate was until the end of the task). The participant was assigned individually within each booth. Similarly, the participants occupied one booth each as members of individual teams but with the opportunity to communicate online between team members. We explained to them that we would pay €5 to the team members who had the highest average performance between them).

Finally, in the third condition (N = 34), we divided the participants into pairs, or again into a trio when the number of participants was odd. The couples were randomly chosen and, as in the previous case, these were determined by picking a sheet of paper that indicated the group they belonged to. Each pairthen occupied the same booth and carried out the task jointly. The logic of the remuneration was the same as in the previous condition: we rewarded the members of the couple with the highest performance (Figure 5). To avoid the possible effect

of the size of the group, we balanced the number of pairs and trios in the virtual and face-to-face team conditions. Some data were rejected because some participants had left with the booklet in their hand to give it directly to the experimenter (19 participants).

Figure 5. Individual, Face to face team and virtual team (sample of stimuli)

<table>
<tr><td>Booklet of word search puzzles

- Individuals (A)
- Face to face teams (B)
- Virtual teams (C)</td><td>  </td></tr>
<tr><td>A: They randomly assigned into booths</td><td>  </td></tr>
<tr><td>B: Each pair of participants occupied the same booth</td><td>  </td></tr>
<tr><td>C: Team members assigned individually within each booth.</td><td>  </td></tr>
<tr><td>Highest performance among members (A, B, C) (Tournament incentives)</td><td>  </td></tr>
<tr><td>Pile of booklet - free of control (Anonymous)</td><td>  </td></tr>
<tr><td>Measurement (Invisible ink)</td><td>  </td></tr>
<tr><td>Comparing stage
(Participant’s report and actual performance)</td><td>  </td></tr>
</table>

2.2. Result and discussion

There was a statistically significant difference between the three conditions, as the chi-square test shows (x2 = 6.05; P = .049).We also applied the Pearson chi-square test between each pair of conditions to verify that the differences between conditions were statistically significant. We proposed that that there would be significant differences between the virtual and face-to-face teams. We found that for thevirtual team the level of dishonesty was significantly higher than for the face-to-face team (x2 = 6.01; P = .014). On the other hand, when we compared individual and virtual team conditions, we found no significant differences between them (x2 = 1.91; P = 0.17). We did the same for the conditions of the individual and the face-to-face team, and no statistically significant differences were found (x2 = 1.12; P = 0.29). The levels of dishonesty among the three conditions were as follows: individual (N = 31; M = .774; SD = 1.20304); face-to-face team (N = 34; M = 0.7941; SD = 2.12887); and virtual team (N = 32; M = 1.5313; SD = 1.96722). In Table 14, we can see the mean and the standard deviation of reported real word searches and dishonesty by condition (measured as the difference between the reported and real performancein the word search puzzle). That is, in general and regardless of the condition, people seemed to behave dishonestly. Therefore, and in line with our first hypothesis, we can conclude that in all (non-supervised) conditions the participants committed dishonesty.

Table 14. Mean and deviation of word search reported, real and dishonesty for each condition

Condition		Mean	Deviation
Individual	Reported	6.16	1.93
	Real	5.39	1.49
	Dishonesty	0.77 (12.54 %)	1.20
Virtual team	Reported	6.43	1.87
	Real	4.91	2.05
	Dishonesty	1.52 (23.64 %)	1.97
Face-to-face team	Reported	7.21	2.48
	Real	6.41	2.26
	Dishonesty	0.8 (11.09 %)	2.13

To understand better the dishonest behaviour in each of the experimental conditions, we decided to study the pattern of responses of the subjects in each condition through a frequency distribution (Figures 6, 7, 8). As can be seen, the pattern of results is at a glance different between the conditions. Specifically, the number of participants who did not lie is clearly different between the conditions. To eliminate possible masking from calculating the average values at the different levels of dishonesty, we decided to calculate a new, dichotomous, and variable: those who did not commit dishonesty and those who did (regardless of the amount of dishonesty, that is, the number of word searches in which they had tricked us). We thereby obtained the percentage of people who committed and who did not commit dishonesty for each of the conditions (Table 15).

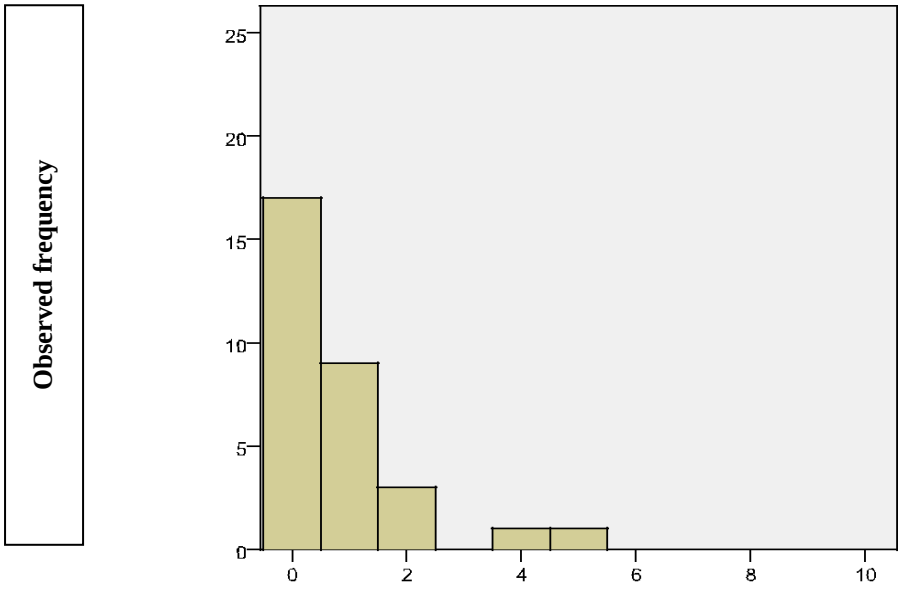


Figure **6.** *Amount of dishonesty: individual condition*

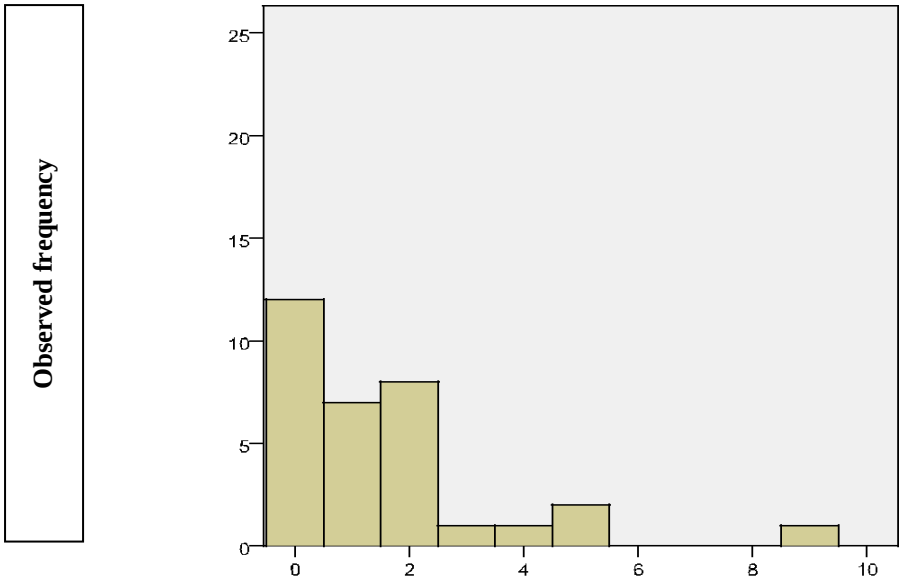


Figure **7.** *Amount of dishonesty: face-to-face condition*

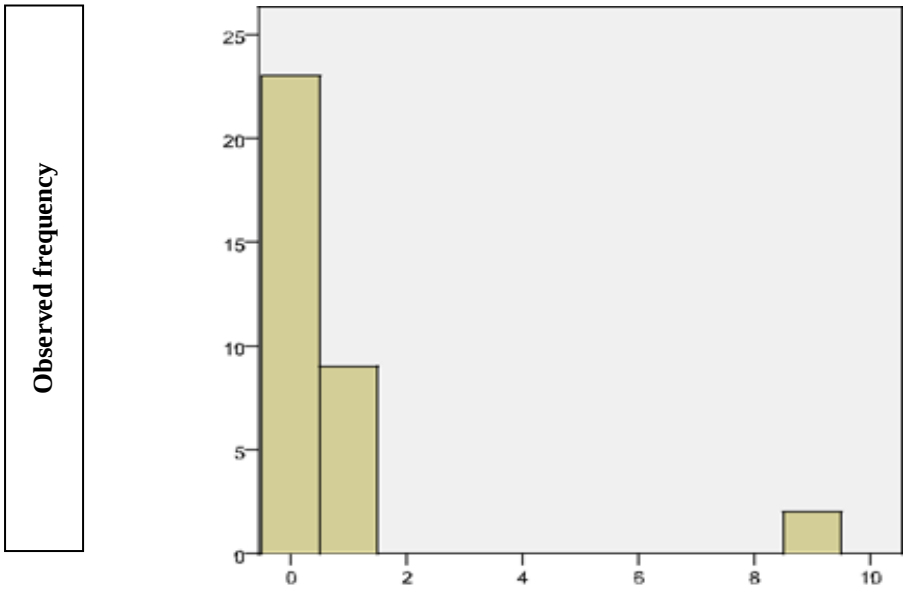


Figure 8. Amount of dishonesty: virtual condition

Table 15. The percentage of dishonesty among the three conditions

	Dishonesty	
Condition	No	Yes
Individual	54.8%	45.2%
Virtual team	37.5%	62.5%
Face-to-face team	67.6%	32.4%

In addition, we used a poisson regression analysis to observe the response variable (the amount of dishonesty) as the distribution in our case decreases slowly and increases significantly across all groups, which would indicate the continuous rate of dishonesty amongst the groups when they carry out more tasks. The likelihood ratio chi-square test result shows that there was a statistically significant difference amongst conditions (x^2 =7.864; *P* = .005). In particular, to determine which group hada significant effect, we again applied the test between each pair of conditions. It indicated that when we compared the virtual and face-to-face condition, the virtual team was a significant predictor of the number of dishonest acts (*B* = 0.657, *SD* = 0.2397, *P* = 0.006); the incident rate ratio (1.928) shows that for every extra

task carried out by virtual groups, the predicted count of dishonesty increased by 92.8%. Hence, the rate of dishonesty in the virtual team was more than the potential dishonesty in the face-to-face team. Moreover, when we compared the individual condition with the virtual group, we found a significant predictor of the number of dishonest acts (B = -0.682, SD = 0.2419, P = 0.006) but the incident rate ratio (0.506) indicates that for every one more task, the predicted count of the likelihood of dishonesty decreasedto 49.4%. Therefore, the expectation of dishonesty rate in the virtual condition was greater than potential dishonesty in the individual condition. In contrast, when we compared between face-to-face and individual conditions, there was no statistical significance (P = 0.927). It was concluded that the expectation of dishonesty rate would be likely higher for each more task carried out by the virtual team compared with other conditions.

In general, people practice misconduct to increase their probability of success. The results of the present investigation seem to support this idea, provided that the participants are in situations perceived by them as of a non-supervised nature, and therefore the probability of being found behaving dishonestlyonly existspotentially. This is in line with what we proposed in our hypothesis, since in all the conditions of our experiment the participants perceived there to be no supervision and they committed dishonesty, as we found statistically significant differences between reported efficiency and actual efficiency in all of them. This result actually is congruent with the results from Pascual-Ezama et al. (2013) which showed that the probability of dishonesty increased in situations where there was no supervision.Apart from the expected results that replicate previous studies, we can also state that under certain conditions dishonest behaviourmay vary depending on whether those involved are individuals, members of virtual teams (without direct interaction), or members of face-to-face teams. As we mentioned earlier, several studies explore how the presence of others (Baker & Mechtel, 2018; Carrell, Malmstrom, & West, 2008; Gino et al., 2009; Pascual-Ezama et al.,

2015), a collectivist mindset (Mazar & Aggarwal, 2011), and teamwork (Cohen et al., 2009; Conrads et al., 2013) influence behaviour. However, the different studies have not empirically considered whether working in a virtual or face-to-face team influenceslevels of dishonesty.

This is precisely what we have done in the present study. We hypothesised that we expected to find a greater probability of dishonest behaviour in virtual teams than in face-to-face teams. Indeed, our results indicate that teams whose members worked virtually committed more dishonesty. This can perhaps be explained by the phenomenon of normative influence (Asch, 1951): in face-to-face teams, anyone who suggests breaking the rules risk social punishment by the group. Asch demonstrated that this risk was too great and, consequently, the probability of transgressing the norm was reduced.

In the present study there was no significant difference in the level of dishonesty between individuals and virtual teams. This is not consistent with Conrads et al. (2013) although their teams resembled what we understand as virtual; because they did not interact face to face – they did not know each other at all. We did not find similar results in our comparisons between our individual and virtual conditions.

We found no statistically significant differences between the conditions of individuals and face-to-face groups. Therefore, in this context we could not prove that the group has a differential influence on dishonest behaviour, either by way of conformity or by way of delegation of responsibility. However, at a descriptive level, we can observe that the degree of dishonesty in the individual condition (54.2%) lay between the dishonest proportion of the conditions of face-to-face (32.4%) and virtual (62.5%) teams.

Our most significant finding concerns the virtual and face-to-face teams. It is important to point out that the configuration of a work group does influence the probability of dishonest

behaviour by its members. In particular, the probability that its members will commit dishonesty is less than if they were working virtually. On the other hand, with regard to the amount of dishonesty committed, we have not found significant differences between the different conditions. As the histograms (Figures 6, 7 and 8) illustrate, dishonest behaviour was not at a high level in any of the conditions.

Taking into account that the booklet contained 12 word searches, we can say that, in effect, the level of dishonesty was low in all conditions. This may be explained by the theory of self-concept maintenance, that is, people do not carry dishonest behaviour to its ultimate consequences, but instead impose limits on non-compliance that allow them to maintain a positive image (Mazar, Amir, & Ariely, 2008). It is probably for this reason that we did not find significant differences in the amount of dishonesty across the three conditions. However, we were able to establish the rate of possibility and expectation of dishonesty when participantsunder all conditions continued to perform tasks. Our results showed that the expectation of continuity in cases of dishonesty amongst virtual teams was higher than in individual and face-to-face conditions.

Therefore, the results of the present study allow us to conclude that dishonest behaviour is more likely when work teams are virtual. This conclusion can be appliedto business environments: it can help us to identify where more resources should be invested to prevent dishonest behaviour. For example, in an audit firm environment, managers use many types of teams (e.g., virtual teams) as a means of communication to enhance the audit process, as auditors have toaccess and assess economic information and convey it to those who subsequently apply it. They are prone to engage in dishonest activities in the course of their tasks, such as when they are conducting a checklist of audit duties and procedures in an attempt to confirm the accuracy of data and the efficiency and effectiveness of internal controls or business processes. Therefore, it was important to identify which types of groups

might be a motivator for negative behaviour (such as dishonesty), because such action might lead to losses for investors, shareholders, and others with an active interest in financial statements. The study results are therefore an important warning sign because they reveal a positive relationship between the virtual audit teams and dishonesty that could greatly affect the performance of the organisation. In practical terms, work team management and decision makers should try to find ways to reduce potential dishonest behaviour, for exampleby strengthening control over this type of team. More importantly, the results also show the significance of behavioural economics in increasing awareness of the strengths and weaknesses of the resources we use and how we might improve them, while at the same time controlling and reducing potential dishonest behaviour.

GENERAL CONCLUSION

The present study provides an analysis of audit-related issues that affect the quality of the audit process and, consequently, the correct use of accounting information in complex decisionmaking. We have examined the relationship between audit issues and their impact on the auditor's opinion from the perspective of behavioural economics and through the use of empirical methodologies.

Within a general framework, we reviewed "Thirty-five years of experimental studies on auditing: an overview of issues, prominent topics, and future research directions." The principal value of our literature review is that it compiled and summarised audit issues over the last four decades. It can also be considered as a new guide to studies that have taken the experimental approach in audit subjects, unlike previous literature studies that only summarised studies based on bounded topics, or mentioned multiple subjects that did not specialise in experimental methodology. Our major contributions are focused on identifying the audit topics that employed experimental methodology from 1982 to 2017, starting from an analysis of auditing themes over those 35 years, and then highlighting prominent audit topics that may affect the quality of audits. Our literature review addressed those important topics that suggest directions for future research. As a result of this analysis, a graph has been created to show the researchers' interest during the four decades of these factors that have influenced the quality of audits.

The study provides the opportunity to learn more about the most important issues in auditing and the possible direction of future empirical research. It is a source that provides a historical perspective and a guide for future studies in auditing topics.

Another specific part of our general framework that has been studied was"The evolution of the most prominent topics in auditing over the past four decades."In this research, the

development of the most prominent topics was analyzed in detail. Particular reference has been made to the five themes (financial incentives, group issues, partnership, fraud, and regulations) that were of particular interest to scholarswho undertook empirical research during that period. The aim of this investigation was firstly to provide researchers with an understanding of the evolution of current audit problems over four decades (from the 1980s to the 2010s), demonstrating the extent to which audit issues have changed over those years to meet changing needs and community expectations. Secondly, the study shows the current trend in the specialist topic of auditing issuesas a specialty. It should be noted that studies in each subject have developed and changed during each decade, and many have been repeated but with different results. Additionally, research over the years has contributed to the linking of issues. For example, in previous studies, it could be seen that there was a close correlation between the issue of financial incentives and fraud. Moreover, there was a connection with topics related to group issues, communication, and decision making.

The matter of financial incentives has encompassed many subtopics over the four-decade period under study. These include performance. Some research papers have shown that performance-based incentives can improve work performance, while others haveprovided evidence to the contrary. Moreover, among these subtopics of interest to scholars are financial incentive schemes. Papers have addressed thevarious types of financial incentive schemes and their relationship to performance and quality. Many studies show that incentive-based compensation schemes are a better way to encourage organisational commitment. Another matter of interest in this area are tournament schemes and their relation to misbehavior over the last decade.

It has been noted that in the 1980s studies investigating team issues (group) focused on effective approachesto the composition of working groups in terms of framework and procedures. The management of traditional, face-to-face teams was also discussed. At the end

of the first decade and at the beginning of the second decde studies highlighted the knowledge factor in teams; they demonstrated that a lack of clear knowledge of auditing could affect staff performance, noting that having proper audit procedures in place encouraged accurate and reliable audits. Studies on the topic of groups in the more recent decades have investigated issues such as negotiations between group members, geographical location, financial rewards, and team performance. Recently, there has been a focus on virtual versus traditional (face-to-face) communication amongst team members and the ambiguity of information when trying to achieve quality decision making.

Partnership is another issue reviewed in the study. Research over the four decades has identified that partnership is important in ensuring a successful audit process. On this subject,a central themehas beenthe increase in issues of governance arrangements within audit firms. Studies have also clarified the responsibility of partnership and its positive and negative contribution to the framework of the audit process and agency problems and human capital issues within audit firms, such as the experience of auditors and the impact this has on audit quality. A number of studies have investigated the issues of clients' size, tenure and workloads. Researchers have examined the personal and professional relationships between clients and audit partners, including the partners' characteristics. Studies have expanded on the issues of partner compensation and heterogeneities. At the beginning of the current decade, various papers investigated issues such as partners' promotions and profit-sharing schemes, disclosure, partner rotation, regulatory inspections and sanctions. However, a major issue identified by a majority of the studies in the current decade is the relationship between partners, client executives and the issues of independence that affect auditing judgements.

Studies have noted that fraud is prevalent in many organisations, and that this is due toa lack of effective incentives and control mechanisms. A relationship between financial analysis and the possibility of fraud has been observed; fraud appears a present risk whenrigorous

financial analysis is absent. The studies have noted that fraud is something that could be eliminated by following the correct procedures. In addition, they have noted the relationship between the likelihood of fraud and corporate governance characteristics. Authors have further noted that audit fraud risk assessments were complicated by non-diagnostic cues. Another factor investigated by these studies is the standard audit opinion, which has been shown to facilitate opportunities for fraud. Those studies have also noted issues with corporate disclosure practices, observing that auditors are required to ensure that the audit process is completed according to a scheduled plan. Other issues identified in the present review are the role of vague rules and independence regarding audit fees and services and client relations. Individual differences in trait experts' scepticism can affect group fraud risk brainstorming. Studies from 2010 showed that auditors are somewhat scepticalof audits that are accidentally demonstrated to involve behaviours such as extending audit time, identifying inconsistencies, and involving forceful client negotiations. Behaviours that may also be influenced by cultural differences and values affect proficient audit judgements and may help increase cases of cheating and dishonesty in an organisation. Concerns about auditors' independence have also been addressed; this can be promoted through regulatory changes. Many studies have emphasised the significance of following the right regulatory framework and auditor independence to reduce risks associated with fraudulent issues that contribute to financial loss. The relationship between fraud and financial incentives has been widely discussed during the past decade, and is has been concluded that the absence of proper supervision encourages fraud.

The effect of auditing regulations was one another prominent issue. Studies have acknowledged that significant changes are required in the auditing process to ensure quality control. Regulations have numerous implications that affect day-to-day auditor activities. The studies have further noted the importance of auditors completing the review process followinga scheduled plan regarding corporate disclosure practices. Other issues identified in

studies include the process of reviewing auditors, which is an essential step towards helpingto regulate auditors' actions. Another important issue identified with regard to regulations is that auditors are likely to view tough standards as less than optimal; they prefer rules that are vague. High audit fees threaten the independence of auditors. Tax issues and the effectiveness of tax policy, as well as alternative methods of taxation for direct and indirect approaches were also identified. Studies investigating the impact of regulations on auditing, financial reporting, and corporate governance regulatory practices have shown that managers and auditors make decisions based on the nature of these regulations according to the different functions of their organisations. Others have suggested that regulatory changes might address concerns regarding auditor independence. Their conclusions indicate a new relationship between auditing regulations and improving auditing quality and value, despite the fact that they increase costs. Another issue has emergedin relation to regulation is the reliance on technology by companies to gather information and to make decisions. Dealing with big data increases the risk of fraud. Technology has also had an impact on auditing rules and internal controls, and developments in the field have increased the opportunity for fraud. Therefore, it is important for auditors to ensure that the right international standards in auditing are adhered to, so that the instances of fraud may be reduced.

Our review of research on these issues and their development over several decades has led us to realise that many of them are interrelated, and they have generated new topics that merit further study. These will help scholars to fill some gaps and widen the breadth of research in these issues. For example, recently there has been a close correlation between financial incentives and dishonesty in the form of the rank order tournament scheme and its relationship to misbehaviour.Dishonesty in a multitasking environment should be considered as a new area for investigation. Moreover, there is also a relationship between team members' mode of communication and dishonesty. Here is another path that needs further exploration: the financial incentive schemes applied to traditional and virtual team communication issues

and their impact on decision making.

The graph in our study provided evidence of the need for this research. Firstly, it makes clear that financial incentives are of great importance in our review of the literature. Incentives have been used over several decades, and they have affected individuals and the relationship between effort and performance. The graphical representation of the data analysis of incentives shows that these steadily rose from the first decade until the middle of the second decade, when recession struck. They again rose slightly during the third decade and were followed by a sharp rise in the most recent one. Compared with the other subjects, the steady rise across the given time frame is highly visible. Thus, incentives have been very important in research carried out during the period in question. Secondly, group issues in the workplace, in terms of both face-to-face and virtual methods, were also of great significance. They have been researched since the first decade, and have been well covered in recent literature reviews (Trotman, Bauer, & Humphreys, 2015). A small number of articles investigated the topic during the first decade and the number of studies decreased during the second, but from the mid-2000s onwards they rose continually until the current one.

In particular, the quality of decision making through the brainstorming stage, the stages of cooperation between teams during the audit process, and comparisons of individuals and face-to-face and virtual methods of team formation were all widely investigated.These subjects were central to Chapters 1 and 2 of the present study.

Previous extensive research led us to a question that was discussed in the first chapter: “Do multiple tasks enhance dishonesty in tournament incentives environment?” Based on the notion that empirical evidence may help to eliminate the negative impact of financial incentives on the auditor’s decision making, two separate experiments in two different environments were conducted. Both experiments simulated the work environment and

examined whether social interaction at work was present or absent; the possibility of fraud was tested under the tournament financial incentive scheme.The main result of this study shows that multiple tasks in the work environment reduce the dishonesty when tournament incentives are present, and the opposite is the case when there are no multiple tasks. To our knowledge, this is the first study that examines the relationship between multitasking and dishonesty in the tournament incentive environment.

The results of the present study serve to inform audit firms of the potentially positive impact of multitasking on audit quality in the tournament incentive environment, while non-multitasking is likely to present the opportunity for misbehaviour (such as dishonesty). Our results may make an important contribution to the audit profession. They complement the previous literature by showing that financial incentives and personal interests directly affect auditors' performance and their decisions, as previously discussed by Omar and Stewart (2015) and Schneider (2003). Most firms use performance-based financial incentive schemes where there is a relationship between incentives in a tournament environment, with the possibility of subversive effects on task content. This finding is consistent with previous studies that have examined peer evaluation (Harbring & Irlenbush, 2005, 2011). The results of the present study are of undoubted interest to many parties; these would include standard-setters, regulators, researchers, and audit firms.

Chapter 2 discussed "New organisationalchallenges: 'dishonesty' in face-to-face and virtual teams." It focused on the composition of work teams in audit companies. It compared face-to-face teamswith virtual teams to discover the prevalence of dishonesty amongst team members in the absence of supervision. The results of the experiment allowed us to conclude that dishonest behaviour is more likely when teams work in a virtual environment than in face-to-face teams in non-supervised environments. This conclusion has important implications for business practice; it can be used to determine in which situations we should invest more

resources to prevent or reduce dishonestbehaviour.Supervision (Pascual-Ezama et al., 2013) requires a large investment of resources both human and economic, but itis essential given that the opinions of auditors can lead to losses by investors, shareholders, and decision makers; important warning signs about the organisation's future performance may also be missed. This is why trying to find other factors that help us reduce the potential for dishonesty that do not require as much investment. A dependence on behavioural economics(examining social and intellectual factors) was essential in the analysis of the economic and financial decisions taken by both individuals and institutions (such as auditors, consumers, and investors).As a result, the present study proposes that regulatory authorities in audit firms shouldimplement particular human resource management methods, for example by establishing certain kinds of work teams and using tested communication tools amongsttheir members, and to guide these resources properly and to know how much investment in these resources is needed. This will hopefully encourage researchers or regulators to improve resources to reduce or control dishonest behaviour.

In general, the presentstudyhas dealt with issues affecting the quality of auditing in terms of influences on the auditor's opinion from the perspective of behavioural economics. It has used the experimental methodology ofprevious research over the past four decades to uncover, analyse, and categorise the prominent issues. Once the development of these was examined within a general framework, newavenues of research opened up. The study then addressed issues that have arisen during recent financial crises as a consequence of economic decisions taken by organisations and individuals in the audit environment. Dishonesty was further established as the main reasonfor the 2008 economic collapse. The study arrived at its results byinvestigating factors such as multitasking in the presence of financial tournament incentives and the types of communication - virtual or traditional - that were employed bythe teams of auditor, and by examining the most effective form in reducing dishonesty.

Our findings have several implications for those stakeholders who may be interested in them.The factors that have influenced auditors' decisions and the quality of auditing over several consecutive decades have been presented, and the prominent issues indicated. These may contribute to the education and awareness of stakeholders. More importantly, from a behavioural perspective, our research findings are consistent with a greater trend amongst professional authorities to reduce misconduct (such as dishonesty) and thereby to protect all stakeholders in the company. Many scholars have suggested that a consideration of behavioursand human psychology could be jointly applied in different areas of society; andthat behavioural research could help to rescue economies (Mesoudi, 2011; Castilla, 2014; Sarnikar, 2015; O'Donoghue, 2015). In particular, these authors have found that behavioural research permit business organisations to measure the characteristics and preferences of their workers which make them either vulnerable or resistant to regulatory policies. The results of this behavioural research may encourage company stakeholders to become actively involved in approving administrative regulations and legislation within the organisation to preventmisbehaviour. This gives stakeholders more authority, confidence and a tangible means of measuring the economic situation from a behavioural perspective. Indeed, our findings show that effective policies in dealing with tasks should be applied in any competitive environment that relies on financial incentives and targets productivity in tasks undertaken. Multitasking under a tournament environment strongly mitigatesmisbehaviour in the workplace, unlike single tasks. The second study suggested applying stricter measures such as control over members of virtual work teams to avoid misbehaviour that would affect the quality of the audit. Therefore, better procedures will result when stakeholders and corporate management are united in attempts to improve internal management policies and the working environment.

It should be noted that there are some theoretical and practical limitations to the present study.In the first case, despite our best efforts; the empirical literature review could not be

entirely comprehensive. The study was limited to the most prominent issues (a maximum of five) in each decade. Although these were examined in detail, others could be investigated in future experimental studies, so that a comprehensive view of the factors that affect the quality of the audit might be established.

The experimental part of the present study suffered from limitations related to the nature of the tasks and the sample employed.The tasks used in the research were not complex, unlike those faced constantly by auditors in the work environment. Consequently, our investigation into the effects of tournament incentives and our comparison between face-to-face and virtual team members has to be considered in light of this. Complex tasks could be consideredin future research. Limitations should also be acknowledged in our empirical approach. One of these concerns our sample. We employed students as proxy auditors (as many researchershave used this strategy), but we do not view this as a strength.Unquestionably,the ideal goal would beto obtain a comprehensive view of the current status of the audit profession from auditors themselves. Thus, another line of research would be to investigate employees of organisationsto discover whether there is a similarity between the results that would be thus obtained and those of the present study.

Future research might also involve an analysis of gender and competition in the auditing profession, and a comparison of reactions to multitaskingand face-to-face and virtual communication. These issues have already been discussedby some scholars (Dohmen & Falk, 2011; Dechenaux, Kovenock, & Sheremeta, 2015). Some studies have found variations in levels of insecure misbehaviour based on gender, while others have found no such differences (Jacobsen, Fosgaard, & Pascual-Ezama, 2018).

Therefore, it is suggested that the present study be repeatedfrom a gendered perspective.
In sum, we believe that issues of misconduct such as dishonesty would be of interest to future

researchers in behavioural economics, especially when decisionmaking is based on opinions or judgements (as is the case in auditing). A lack of commitment to standards of ethics and rules of professional conduct has had negative effects on domestic and international economies and it has contributed to global financial crises. Consequently, more research on audit issues from abehavioural economicsviewpoint may help to improve the audit environment and in particular the quality of outcome, and thus contribute to the successful anticipation or avoidance of any financial crises that threaten to arise in the future.

CONCLUSIÓN GENERAL

Dentro de un marco general, el valor principal de nuestra revisión bibliográfica es que se recopilaron y resumieron problemas de auditoría de las últimas cuatro décadas. También puede considerarse como una nueva guía de estudios que ha adquirido el enfoque experimental en temas de auditoría, a diferencia de estudios anteriores que solo resumieron estudios basados en temas limitados, o que mencionaron múltiples temas que no se especializan en metodología experimental. Nuestras principales contribuciones se centran en identificar los temas de auditoría que emplearon metodología experimental desde 1982 hasta 2017, a partir de un análisis de los temas de auditoría durante esos 35 años, y a continuación, destacar los principales temas de auditoría que pueden afectar la calidad de las auditorías. Nuestra revisión bibliográfica abordó esos temas importantes que indican instrucciones para las investigaciones futuras. Como resultado de este análisis, se ha creado un gráfico para mostrar los intereses de los investigadores durante estas cuatro décadas de estos factores que han influido en la calidad de las auditorías. El estudio proporciona la oportunidad de aprender más acerca de los problemas más importantes de la auditoría y la posible orientación de la futura investigación empírica. Es un recurso que proporciona una perspectiva histórica y una guía para estudios futuros sobre temas de auditoría.

Otra parte específica de nuestro marco general que ha sido estudiada es la evolución de los temas más destacados de la auditoría a lo largo de las últimas cuatro décadas. En esta investigación, se analizó detalladamente el desarrollo de los temas más destacados. Hace referencia a los cinco temas principales (incentivos financieros, aspectos grupales, asociación, fraude y reglamentos) que eran de especial interés para los estudiosos que realizaron investigaciones empíricas durante ese período.

El objetivo de esta investigación era, en primer lugar, proporcionar a los investigadores conocimiento de la evolución de los problemas de auditoría actuales durante cuatro décadas

(desde la década de 1980 hasta 2010), demostrando en qué medida han cambiado los aspectos de auditoría a lo largo de esos años para satisfacer las necesidades cambiantes y las expectativas de la comunidad. En segundo lugar, el estudio muestra la tendencia actual en el tema especializado de los aspectos de la auditoría como especialidad. Cabe señalar que los estudios en cada materia se han desarrollado y cambiado durante cada década y muchos se han repetido pero con resultados diferentes. Adicionalmente, la investigación a lo largo de los años ha contribuido a vincular estos temas. Por ejemplo, en estudios anteriores, se pudo ver que había una estrecha correlación entre los incentivos financieros y el fraude. Además, había una relación entre los temas relacionados con aspectos grupales, comunicación y toma de decisiones.

El asunto de los incentivos financieros ha abarcado muchos subtemas durante el período de cuatro décadas que está siendo estudiado. Estos incluyen el rendimiento. Algunos trabajos de investigación han demostrado que los incentivos pueden mejorar el rendimiento laboral, mientras que otros han demostrado lo contrario. Además, junto a estos subtemas de interés para los estudiosos, están los planes de incentivos financieros. Las investigaciones académicas han abordado los diversos tipos de sistemas de incentivos financieros y su relación con el rendimiento y la calidad. Muchos estudios muestran que los sistemas de compensación basados en incentivos son la mejor manera de fomentar el compromiso organizacional. Otro punto de interés en esta área son los esquemas de competencias y su relación con el mal comportamiento en la última década.

Se ha observado que en la década de los 80’s los estudios de investigación de aspectos de equipo (grupo) se centraron en enfoques eficaces para la composición de grupos de trabajo en términos de contexto y procedimientos. También se estudió la gestión de los equipos presenciales tradicionales. Al final de la primera década y al inicio de la segunda, algunos estudios destacaron el conocimiento en equipos; demostraron que la falta de un conocimiento

claro de la auditoría podría afectar al rendimiento del personal, notando que la existencia de procedimientos de auditoría adecuados favorece la precisión y confiabilidad de las auditorías. En las últimas décadas se han estudiado los aspectos grupales, como las negociaciones entre los miembros, ubicación geográfica, recompensas financieras y rendimiento del equipo. Recientemente, se ha hecho énfasis en la comunicación entre los miembros del equipo de forma virtual frente a la tradicional (presencial), y la ambigüedad de la información al intentar lograr una toma decisiones de calidad.

La asociación es otro tema estudiado. La investigación realizada durante las cuatro décadas ha identificado que la asociación es importante para garantizar el éxito del proceso de auditoría. Sobre este asunto, un tema central ha sido el aumento de lo relativo a los arreglos de gobernanza en las empresas de auditoría. Los estudios han aclarado también la responsabilidad de la asociación y su contribución positiva y negativa al marco del proceso de auditoría y problema de agencia, así como los asuntos de recursos humanos en las empresas de auditoría, como la experiencia de los auditores y su impacto en la calidad de las auditorías. En varios estudios se han investigado los aspectos relacionados con los clientes tales como tamaño, antigüedad y la carga de trabajo. Los investigadores han examinado las relaciones personales y profesionales entre clientes y socios de auditoría, incluyendo las características de los socios.

Se han ampliado los estudios en torno a la remuneración de los asociados y las heterogeneidades. Al comienzo de la década actual, diversos trabajos investigaron temas como los ascensos de los socios y los sistemas de participación en los beneficios, declaraciones, rotación de socios, inspecciones reglamentarias y sanciones. Sin embargo, uno de los temas principales identificados por la mayoría de los estudios de la década actual es la relación entre asociados, clientes ejecutivos y los factores de independencia que afectan los juicios de auditoría.

Los estudios han señalado que el fraude es frecuente en muchas organizaciones, y que esto se debe a la falta de incentivos y mecanismos de control eficaces. Se ha observado una relación entre el análisis financiero y la posibilidad de fraude; el fraude aparece como un riesgo cuando no existe un análisis financiero riguroso. Los estudios han indicado que el fraude puede ser eliminado si se siguen los procedimientos correctos. Además, han observado la relación entre la probabilidad de fraude y las características de gobernanza empresarial. Los autores han observado además que las evaluaciones del riesgo de fraude en las auditorías se complicaron por indicios no diagnosticados. Otro factor investigado en estos estudios es la opinión estándar de auditoría, que ha demostrado facilitar las oportunidades de fraude. En esos estudios también se han observado problemas relacionados con las prácticas de divulgación de información empresarial, observando que los auditores están obligados a garantizar que el proceso de auditoría se complete según un plan programado. Otros problemas identificados en el presente análisis son el papel de las normas imprecisas y la independencia en materia de tarifas y servicios de auditoría y relaciones con los clientes. Las diferencias individuales en el escepticismo de los expertos pueden afectar las ideas sobre el riesgo de fraude grupal. Los estudios de 2010 han demostrado que los auditores son algo escéptico con las auditorías en las que accidentalmente se demuestra que implican comportamientos tales como la ampliación del tiempo de auditoría, identificación de inconsistencias y realización de negociaciones de manera forzada con los clientes. También se han abordado las preocupaciones sobre la independencia de los auditores; esto puede promoverse mediante cambios reglamentarios. Muchos estudios han enfatizado la importancia de seguir el marco reglamentario adecuado y la independencia del auditor para reducir los riesgos asociados a fraudes que pudieran contribuir a una pérdida financiera. La relación entre fraude e incentivos financieros ha sido ampliamente discutida durante la última década y se ha llegado a la conclusión de que la falta de una supervisión adecuada fomenta el fraude.

El efecto de los reglamentos de auditoría fue otro problema notorio. Las investigaciones han demostrado que se requieren cambios significativos en el proceso de auditoría para asegurar el control de calidad. Los reglamentos tienen numerosas implicaciones que afectan las actividades cotidianas de los auditores. En los estudios se ha señalado también la importancia de que los auditores completen el proceso de revisión siguiendo un plan programado relativo a las prácticas de divulgación de información empresarial. Otros factores identificados en los estudios incluyen el proceso de revisión a los auditores, que es un paso esencial para ayudar a regular las acciones de los auditores. También es probable que los auditores consideren que las normas estrictas son menos óptimas; prefieren reglas imprecisas. Las elevadas comisiones de auditoría amenazan la independencia de los auditores. Los aspectos fiscales y la eficacia de la política fiscal, así como los métodos fiscales alternativos para los enfoques directos e indirectos fueron identificados también. Estudios sobre el impacto de la reglamentación en la auditoría, presentación de informes financieros y prácticas reglamentarias en materia de gobernanza empresarial han demostrado que los directivos y auditores toman decisiones basadas en la naturaleza de esos reglamentos según las diferentes funciones de sus organizaciones. Otros han sugerido que los cambios en los reglamentos podrían abordar las preocupaciones relativas a la independencia del auditor. Sus conclusiones indican una nueva relación entre los reglamentos de auditoría y la mejora de la calidad y el valor de las auditorías, a pesar del aumento de los costes. Otro problema ha surgido en relación con la reglamentación y es la dependencia de la tecnología por parte de las empresas para recopilar información y toma de decisiones. El manejo de los macro-datos aumenta el riesgo de fraude. La tecnología ha repercutido en los reglamentos de auditoría, los controles internos y su evolución ha aumentado las oportunidades de fraude. Por esto, es importante para los auditores garantizar que las normas internacionales de auditoría se cumplan para reducir los casos de fraude.

Nuestra revisión de la investigación sobre estos temas y su desarrollo a lo largo de varias décadas nos ha llevado a darnos cuenta de que muchos de ellos están interrelacionados y que han generado nuevos temas que merecen más estudio. Esto ayudará a los estudiosos a despejar algunas dudas y ampliar el alcance de la investigación en estos aspectos. Por ejemplo, recientemente ha habido una estrecha correlación entre los incentivos financieros y la deshonestidad en la forma del esquema de competencias de clasificación y su relación con el mal comportamiento. La deshonestidad en un entorno de multitareas debe ser considerada como un nuevo tema de investigación. Además, también existe una relación entre la forma de comunicación de los miembros del equipo y la deshonestidad. Hay otro tema que debe ser explorado: los sistemas de incentivos financieros aplicados a los aspectos de comunicación de equipos tradicionales y virtuales, así como su impacto en la toma de decisiones.

El gráfico de nuestro estudio proporcionó evidencias de la necesidad de esta investigación. En primer lugar, queda claro en nuestra revisión bibliográfica que los incentivos financieros son de gran importancia. Los incentivos han sido utilizados a lo largo de varias décadas y han afectado a las personas y la relación entre el esfuerzo y el rendimiento. La representación gráfica del análisis de datos de incentivos muestra que aumentaron continuamente desde la primera hasta la mitad de la segunda década, cuando la crisis azotó. Nuevamente aumentaron ligeramente durante la tercera década y fueron seguidos por un fuerte aumento en la más reciente. En comparación con los otros temas, el aumento constante a través del marco temporal establecido es muy visible. Así, los incentivos han sido muy importantes en la investigación llevada a cabo durante el período en cuestión.

En segundo lugar, los aspectos grupales en el lugar de trabajo, tanto en métodos presenciales como virtuales, fueron también muy significativos. Han sido investigados desde la primera década, y han sido bien cubiertos en las revisiones bibliográficas recientes (Trotman, Bauer, & Humphreys, 2015). Un pequeño número de artículos investigaron el tema durante la

primera década y el número disminuyó durante la segunda, pero desde mediados de la década del 2000 hacia adelante continuaron en aumento hasta la actualidad.

Particularmente, la calidad de la toma de decisiones durante la fase de lluvia de ideas, las fases de cooperación entre equipos durante el proceso de auditoría y comparaciones de personas y métodos presenciales y virtuales de formación de equipos fueron ampliamente investigados. Estos temas fueron centrales en los capítulos 1 y 2 del presente estudio.

Una extensa investigación previa nos llevó a una pregunta que fue discutida en el primer capítulo: "¿Las multitareas fomentan la deshonestidad en entornos competitivos?" Basado en la noción de que la evidencia empírica puede ayudar a eliminar el impacto negativo de los incentivos financieros en la toma de decisiones del auditor, se realizaron dos experimentos separados en dos entornos diferentes. Ambos experimentos simularon el ambiente de trabajo y examinaron si la interacción social en el trabajo estaba presente o ausente. El resultado principal de este estudio muestra que las multitareas en el entorno de trabajo disminuyen la deshonestidad y caso contrario cuando no hay multitareas. Por lo que sabemos, este es el primer estudio que analiza la relación entre las multitareas y la deshonestidad en un entorno competitivo con incentivos.

Los resultados del presente estudio sirven para informar a las empresas de auditoría del impacto potencialmente positivo de las multitareas sobre la calidad de la auditoría en un entorno competitivo, mientras que con las tareas no múltiples incrementa la probabilidad de deshonestidad. Nuestros resultados pueden hacer una importante contribución a la profesión de auditoría. Complementan la bibliografía anterior mostrando que los incentivos financieros y los intereses personales afectan directamente el rendimiento de las auditorías y la toma de decisiones, como se ha discutido anteriormente por Omar y Stewart (2015) y Schneider (2003). La mayoría de las empresas utilizan sistemas de incentivos financieros basados en el

rendimiento donde existe una relación entre la competencia como incentivo con la posibilidad de efectos subversivos sobre el contenido de la tarea. Este hallazgo es coherente con estudios anteriores que han examinado la evaluación entre pares (Harbring & Irlenbush, 2005, 2011). Los resultados del presente estudio son de indudable interés para muchas partes; incluyendo organismos de normalización, reguladores, investigadores y empresas de auditoría.

El capítulo 2 discute se centra en la composición de equipos de trabajo en compañías auditoras. Compara los equipos presenciales con los virtuales para descubrir la prevalencia de la deshonestidad entre los miembros del equipo en ausencia de supervisión. Los resultados del experimento nos permitieron concluir que el comportamiento deshonesto es más probable cuando los equipos trabajan de forma virtual que cuando los equipos son presenciales en entornos no supervisados. Esta conclusión tiene implicaciones importantes para la práctica empresarial; puede ser utilizada para determinar en qué situaciones debemos invertir más recursos para prevenir o reducir el comportamiento deshonesto. La supervisión requiere de una gran inversión de recursos tanto humanos como económicos, pero es esencial dado que las opiniones de los auditores pueden dar lugar a pérdidas por parte de los inversores, accionistas y responsables de la toma de decisiones; también se pueden pasar por alto señales de advertencia importantes sobre el rendimiento futuro de la organización. Ahí radica la importancia de tratar de encontrar otros factores que nos ayuden a reducir en gran medida la deshonestidad que no requieran tanta inversión. Una dependencia del comportamiento de la economía (examinar factores sociales e intelectuales) fue esencial en el análisis de las tomas de decisiones económicas y financieras tanto por personas como instituciones (auditores, consumidores e inversores). Como resultado, el presente estudio propone que las autoridades reguladoras de las empresas de auditoría deben implementar métodos particulares de gestión de recursos humanos, por ejemplo, estableciendo determinados tipos de equipos de trabajos y utilizando herramientas de comunicación probadas entre sus miembros, así como orientar adecuadamente estos recursos y saber cuánto es necesario invertir en los mismos. Se espera

que esto anime a los investigadores o reguladores a mejorar los recursos para reducir o controlar el comportamiento deshonesto.

En general el presente estudio trata sobre los problemas que afectan la calidad de las auditorias en términos de influencia sobre la opinión del auditor desde la perspectiva de la economía del comportamiento. Se ha utilizado la metodología experimental de investigaciones anteriores de las últimas cuatro décadas para descubrir, analizar y categorizar los problemas destacados. Una vez examinados en un marco general, se abrieron nuevas vías de investigación. El estudio abordó problemas que han surgido durante las recientes crisis financieras como consecuencia de decisiones económicas tomadas por organizaciones y particulares en el entorno de auditoría. La deshonestidad quedó establecida como la razón principal del colapso económico de 2008. El estudio llegó a estos resultados al investigar factores como las multitareas en presencia de competencias como incentivo y los tipos de comunicación - virtual o tradicional - que fueron empleados por los equipos de auditoría, así como examinando la forma más eficaz de reducir la deshonestidad.

Nuestros hallazgos tienen varias consecuencias para los interesados en las mismas. Los factores que han influido en las decisiones de los auditores y en la calidad de la auditoría se han presentado durante varias décadas consecutivas y se han indicado los problemas destacados. Estos pueden contribuir a la educación y sensibilización de las partes interesadas. Más importante aun, desde una perspectiva de comportamiento, los resultados de nuestra investigación son consistentes con que existe una mayor tendencia por parte de las autoridades profesionales en disminuir las malas conductas (como la deshonestidad) y de este modo proteger a todas las partes interesadas en el mundo empresarial. Muchos estudiosos han sugerido considerar los comportamientos y la psicología humana para aplicarlos conjuntamente en diferentes áreas de la sociedad y que la investigación del comportamiento podría ayudar a rescatar economías (Mesoudi, 2011; Castilla, 2014; Sarnikar, 2015;

O'Donoghue, 2015). En particular, estos autores han encontrado que la investigación conductual permite a las organizaciones empresariales medir las características y preferencias de sus trabajadores que los hacen vulnerables o resistentes a las políticas regulatorias. Los resultados de esta investigación conductual pueden animar a las partes interesadas de la empresa a participar activamente en la aprobación de reglamentos administrativos y la legislación dentro de la organización para prevenir el mal comportamiento. Esto da a las partes interesadas más autoridad, confianza y un medio tangible para medir la situación económica desde una perspectiva de comportamiento. De hecho, nuestros resultados demuestran que las políticas eficaces para hacer frente a las tareas deben ser aplicadas en cualquier entorno competitivo que se base en incentivos financieros y se centre en la productividad de las tareas realizadas. Las multitareas bajo un entorno competitivo reducen en gran medida el mal comportamiento en el lugar de trabajo, a diferencia de las tareas únicas. El segundo estudio sugiere aplicar medidas estrictas como un control sobre los miembros de los equipos de trabajo virtuales para evitar malos comportamientos que puedan afectar la calidad de la auditoría. Además, se obtendrán mejores procedimientos cuando las partes interesadas y la directiva empresarial estén unidas para mejorar las políticas de gestión internas y el entorno laboral.

Se debe mencionar que este estudio presenta algunas limitaciones teóricas y prácticas. En el primer caso, a pesar de todos nuestros esfuerzos, la visión general de la bibliografía empírica no es fácil de comprender. El estudio estuvo limitado a los aspectos más destacados (un máximo de cinco) en cada década. Aunque estos fueron examinados al detalle, otros podrían investigarse en futuros estudios experimentales, para que pueda establecerse una visión integral de los factores que pudieran afectar la calidad de la auditoría.

La parte experimental del presente estudio presentó carencias motivadas a las limitaciones relacionadas con la naturaleza de las tareas y la muestra empleada. Las tareas utilizadas en la

investigación no fueron complejas, a diferencia de aquellas enfrentadas constantemente por los auditores en el entorno laboral. En consecuencia, nuestra investigación sobre los efectos de las competencias como incentivo y nuestra comparación entre los miembros de los equipos presenciales y virtuales debe ser considerada bajo esa premisa. Las tareas complejas podrían considerarse en futuras investigaciones. Las limitaciones también deben ser reconocidas en nuestro enfoque empírico. Una de estas se refiere a nuestra muestra. Empleamos estudiantes como auditores delegados (al igual que muchos investigadores que también han utilizado esta estrategia), pero no apreciamos esto como una fortaleza. Indudablemente, el objetivo ideal sería obtener una visión global de la situación actual de la profesión de auditoría directamente de los propios auditores. Así, otra línea de investigación sería analizar a los empleados de las organizaciones para descubrir si existe una similitud en cuanto a los resultados que se obtendrían de este modo y los del presente estudio.

Futuras investigaciones podrían también incluir un análisis del género y la competencia en la profesión de auditoría y una comparación de las reacciones a la multitarea y la comunicación presencial y virtual. Estos problemas han sido discutidos por algunos estudiosos (Dohmen & Falk, 2011; Dechenaux, Kovenock, & Sheremeta, 2015). Se han encontrado variaciones en algunos estudios en los niveles de mal comportamiento en función del género, mientras que otros no han encontrado tales diferencias (Jacobsen, Fosgaard, & Pascual-Ezama, 2018). Por lo tanto, se sugiere que el presente estudio se repita desde una perspectiva de género.

En resumen, creemos que los problemas de mal comportamiento como la deshonestidad serían de interés para los futuros investigadores de la economía del comportamiento, especialmente cuando la toma de decisiones está basada en opiniones o juicios (como ocurre en la auditoría). La falta de compromiso con las normas éticas y de conducta profesional ha tenido efectos negativos en las economías nacionales e internacionales y ha contribuido con las crisis financieras mundiales. En consecuencia, más investigaciones sobre aspectos de

auditoria desde el punto de vista de la economía del comportamiento puede contribuir a mejorar el entorno de auditoría y, en particular, la calidad de los resultados y contribuir de este modo a anticipar o evitar con éxito cualquier crisis financiera que amenace con surgir en el futuro.

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General Framework

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Appendices: Chapter 1

Experiment 1 (single task)

Instruccion

1- Rellena los datos demográficos en las tablas.

Género H/M	Edad

2- Encuentra solo los 10 errores de suma de números que están en la tabla haciendo una cruz en el espacio blanco.

Por Ejemplo;

Numero +	Numero +	Numero +	Total resultas	(x)
20	10	30	60	No hay necesidad de colocar la cruz
20	20	30	80	**X**

*** Cada respuesta correcta es equivalente a un punto**

3- Solo tienes 3 minutos para encontrar errores. Cuando se acabe el tiempo, dale la vuelta a la hoja y no escribas nada más.

4- El organizador recogerá tu hoja de respuestas.

Serial No	Number 1	Number 2	Number 3	Total results	(x)
1	80	10	30	120	
2	30	57	80	167	
3	20	80	80	180	
4	55	44	20	110	
5	70	69	21	160	
6	11	37	57	116	
7	59	20	60	139	
8	20	15	71	120	
9	11	60	90	161	
10	21	59	40	123	
11	40	47	30	117	
12	79	10	40	130	
13	13	47	60	120	
14	80	44	55	186	
15	90	20	82	192	
16	60	44	69	181	
17	38	86	54	178	
18	48	68	51	166	
19	84	27	73	184	
20	59	42	55	157	
21	37	29	68	134	
22	90	76	30	208	
23	20	47	30	97	
24	40	33	15	88	
25	59	20	41	120	
26	20	88	39	147	
27	45	73	97	215	
28	24	66	95	185	
29	70	64	16	150	
30	15	35	24	74	

Experiment 1 (Single task)

Quién ganará ¿Usted o su competidor?

Instrucciones

1- Esta página muestra la solución correcta de la primera tarea que has hecho.
2- Recibirás (La tarea de sumar) de otra persona.
3- Actualmente estás en una etapa **competitiva con la otra persona**. (¿quién ganará?).
4- En esta etapa va a evaluar la tarea de sumar de otra persona (para contar cuántos puntos tiene su competidor en esta tarea y registrar sus puntos abajo).
5- Cuando se acabe el tiempo, **primero** levántate de tu asiento y ve a la máquina trituradora y destruye la tarea de sumar de tu competidor dentro de la máquina trituradora (ahora nadie sabrá el contenido de la hoja de tu competidor).
6- Ahora vuelve a tu asiento e informa de cuántos puntos tenía tu competidor (escríbelo abajo).
7- Recibirá un pago fijo por la participación de **1 euros**.
8- Uno de ustedes ganará y otro perderá; el **ganador** recibirá incentivos económicos adicionales basados en la cantidad de puntos que ha obtenido en la tarea (cada punto = 50 céntimos) basado en la cantidad de puntos que le ha otorgado su competidor.

Tus puntos = **Evaluación de tu competidor sobre tu tarea**

Puntos de tu competidor = **Tu evaluación sobre su trabajo en la tarea**

SÓLO GANARÁ UNO, O TÚ O TU COMPETIDOR, ¡¡¡ EL QUE MÁS PUNTOS TENGA!!!

Experiment 1 (Single task)

- Las respuestas correctas están en **Negrita**

Serial No
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27

Escribe la puntuación de tu competidor ----------

Experiment 1 (Multipletask)

Instrucciones

1- Rellena los datos demográficos en las tablas.

Género H/M	Edad

2- Encuentra solo los 10 errores de suma de números que están en la tabla haciendo una cruz en el espacio blanco.

Por Ejemplo;

Numero +	Numero +	Numero +	Total resultas	(x)
20	10	30	60	No hay necesidad de colocar la cruz
20	20	30	80	**X**

*** Cada respuesta correcta es equivalente a un punto**

3- Sólo tienes 3 minutos para encontrar errores. Cuando se acabe el tiempo, dale la vuelta a la hoja y no escribas nada más.

4- El organizador recogerá tu hoja de respuestas.

Serial No	Number 1	Number 2	Number 3	Total results	(x)
1	80	10	30	120	
2	30	57	80	167	
3	20	80	80	180	
4	55	44	20	110	
5	70	69	21	160	
6	11	37	57	116	
7	59	20	60	139	
8	20	15	71	120	
9	11	60	90	161	
10	21	59	40	123	
11	40	47	30	117	
12	79	10	40	130	
13	13	47	60	120	
14	80	44	55	186	
15	90	20	82	192	
16	60	44	69	181	
17	38	86	54	178	
18	48	68	51	166	
19	84	27	73	184	
20	59	42	55	157	
21	37	29	68	134	
22	90	76	30	208	
23	20	47	30	97	
24	40	33	15	88	
25	59	20	41	120	
26	20	88	39	147	
27	45	73	97	215	
28	24	66	95	185	
29	70	64	16	150	
30	15	35	24	74	

Experiment 1 (Multiple tasks)

Quién ganará ¿Ústed o su competidor?

Instrucciones

1- Esta página muestra la solución correcta de la primera tarea que has hecho.
2- Recibirás (La tarea de sumar) de otra persona.
3- Actualmente estás en una etapa **competitiva con la otra persona**. (¿quién ganará?)
4- En esta etapa harás dos trabajos al mismo tiempo:
   - El primer trabajo es evaluar la tarea de sumar de otra persona (para contar cuántos puntos tiene su competidor en esta tarea y registrar sus puntos abajo).
   - El Segundo trabajo es escuchar una audición.
5- Cuando la grabación de audio se detenga, **primero** levántate de tu asiento y ve a la máquina trituradora y destruye la tarea de sumar de tu competidor dentro de la máquina trituradora (ahora nadie sabrá el contenido de la hoja de tu competidor).
6- Ahora vuelve a tu asiento e informa de cuántos puntos tenía tu competidor (escríbelo abajo), responde a las preguntas sobre el audio y cuando termines, entrega el documento completo con la respuesta de la tarea 3 y el número de errores encontrado por tu competidor al organizador.
7- Recibirás un pago fijo por la participación de **1 euros**.
8- Uno de ustedes ganará y otro perderá; el **ganador** recibirá incentivos económicos adicionales basados en la cantidad de puntos que has obtenido en base a ambas tareas (cada punto = 50 céntimos).
   Basado en las respuestas de la segunda tarea (tarea de audio) y en la cantidad de puntos que le ha otorgado su competidor (tarea de resumen).

Tus puntos = **Evaluación de tu competidor sobre tu tarea 1 + Tus aciertos en tarea 3**

Puntos de tu competidor = **Tu evaluación sobre su trabajo en la tarea 1 + Sus aciertos en la tarea 3**

SÓLO GANARÁ UNO, O TÚ O TU COMPETIDOR, ¡¡¡ EL QUE MÁS PUNTOS TENGA!!!

Tu evaluación debe ser secreta

- Las respuestas correctas están en **Negrita**

Serial No
1
2
3
4
5
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27

Escribe la puntuación de tu competidor----------

(Multiple tasks, audio question**)**

Instrucciones

1- Marca cuáles son los cinco números que se mencionan en la pista de audio (tabla a continuación).

46	30	85	52	35	71	75	98	50	97
22	28	10	18	88	90	60	07	08	09

Experiment 2 (Single task)

Instructions

- You are required to solve some tasks: Word Search Puzzles.
- There are several pages, each page has a task and when you solve a task press the button (Next) to move to another task and so on.
- Word search puzzle task requests you to find one name of fruit names and write it in the answer box.

* The task on the last page includes a special financial incentive where the task is competitive with some unknown participants who have already posted their answers.
In the task you need to find as many words as possible from the list below of the puzzle without typing the words, just choose from the drop list how many words that you found, the person who found fewer words than other competitors will not receive the special financial incentive.

Experiment 2 (Switching task)

Instructions

- You are required to solve two kinds of tasks: Word Search Puzzles and Sudoku Puzzles.
- There are several pages, each page has a task and when you solve a task press the button (Next) to move to another task and so on.
- Word search puzzle task requests you to find one name of fruit names and write it in the answer box.
- Sudoku puzzle requests you to find a missing number in tables and write it in the answer box.

* The task on the last page includes a special financial incentive where the task is competitive with some unknown participants who have already posted their answers.
In the task you need to find as many words as possible from the list below of the puzzle without typing the words, just choose from the drop list how many words that you found, the person who found fewer words than other competitors will not receive the special financial incentive.

Experiment 2 (Multiple task)

Instructions

- You are required to solve some tasks: Word Search Puzzles and Pop up boxes questions.
- There are several pages, each page has a task of word search and pop up question when you solve the tasks press the button (Next) to move to another task and so on:
- Word search puzzle task requests you to find one name of fruit names and write it in the answer box.
- Pop up boxes task requests you to answer by Yes or No:

For example: Is number 5 odd number? (Yes or No).

* The task on the last page includes a special financial incentive where the task is competitive with some unknown participants who have already posted their answers. In the task you need to find as many words as possible from the list below of the puzzle without typing the words, just choose from the drop list how many words that you found, the person who found fewer words than other competitors will not receive the special financial incentive.

Experiment 2 (Word Search Puzzles)

A	E	G	N	A	R	O	N	O
R	Y	R	R	E	H	C	G	A
A	N	L	A	A	T	N	L	P
E	N	E	A	N	A	N	A	B
P	Z	I	L	M	R	E	M	E
L	U	S	W	P	O	E	E	R
S	A	N	D	I	P	A	L	R
P	N	V	A	U	K	A	O	Y
D	E	P	A	R	G	T	N	W

Find one name of fruit names and write it in the box answer below.

Experiment 2 (Sudoku Puzzles)

- Find the missing number in Green cell of the Sudoku 5*5 box and write the answer in the box below.

2		3		
				1
		4	1	
1			5	
3		1		

Experiment 2 (Last task for all conditions)

Instruction

- Find as many words as possible from the list below word search puzzle without typing the words; just choose from the drop list below how many words you found in the puzzle. There is a chance to get rewarded in this competitive task, where you compete with two participants who have found a number of words as shown in the table below. Whoever finds the least number of words will not get rewarded.

R	V	J	O	R	T	S	B	X	J	F	F	B	Y	T
A	E	J	M	P	E	E	C	T	B	D	H	Q	V	S
R	P	N	W	Z	R	V	A	I	O	G	Q	O	E	I
T	C	K	A	P	O	L	I	C	E	M	A	N	T	T
I	R	O	D	E	E	Q	T	R	H	N	K	P	N	N
S	E	T	O	R	L	O	E	E	D	E	T	Z	X	E
T	K	R	T	K	R	C	V	L	C	S	R	I	R	D
N	A	M	O	W	E	C	I	L	O	P	U	E	S	E
I	B	U	Q	T	R	E	T	I	A	W	P	B	S	T
Q	Z	S	J	S	C	B	C	Y	Y	O	X	R	H	I
W	P	I	L	P	T	A	E	B	R	X	U	M	W	W
G	F	C	J	P	V	I	T	T	T	N	L	L	K	C
W	Y	I	Y	U	J	R	E	D	L	I	U	B	C	Q
L	M	A	U	Y	L	R	D	F	I	R	E	M	A	N
U	I	N	C	D	R	C	W	W	S	N	C	V	W	C

(Pilot, Zero, Degree, Accounting, Algebra, Demand, Supply, Services)

Participant's record

Competitors	words
participant 1	**5**
participant 2	**3**

How many words you have found?

Select from the drop list

1
2
3
4
5
6
7
8

Appendix: Chapter 2

Word search puzzle

Several word search puzzles are presented in which you will have to find the indicated words. Do not start a new puzzle until completing the previous one. If you want to receive the economic incentive you will have to complete at least the first four word searches puzzles.

Instructions

1- Do not write your name or your last name on the sheet.

2- When you finish put your sheets among the rest of your teammates' answers that are on the table.

3- Go out and tell the investigator how many word searches you have finished to collect your money.

Word Search 1

T	A	M	A	O	F	E	D	D	N	L
O	A	P	B	N	A	N	S	E	O	E
C	S	H	A	M	P	O	O	O	S	G
N	N	J	L	S	O	A	P	D	N	R
C	O	T	S	A	O	L	N	O	O	I
A	T	O	A	P	L	M	L	R	A	A
E	R	A	M	O	A	P	N	A	O	H
B	C	O	L	O	G	N	E	N	A	P
M	S	N	T	E	S	P	O	T	J	A
O	S	E	A	T	S	P	O	N	G	E
C	H	A	I	R	B	R	U	S	H	C

COLOGNE **BALSAM** **SOAP**

DEODORANT **SPONGE** **SHAMPOO**

HAIRBRUSH **COMB** **FOAM**

HAIRGEL

Word Search 2

V	E	H	O	S	E	T	S	O	P
E	S	O	S	O	R	A	C	G	S
O	B	U	I	L	D	I	N	G	S
P	S	S	A	I	O	S	R	E	C
A	U	E	O	R	T	O	L	A	E
T	B	S	T	R	A	F	F	I	C
H	S	D	S	A	P	A	O	I	V
D	S	J	S	T	R	E	E	T	A
A	V	E	N	U	E	A	S	P	D
S	S	D	R	S	J	F	P	D	S

HOUSE **PATH** **BUILDING**

CAR **TAP** **STREET**

POST **AVENUE** **TRAFFIC**

BUS

Word Search 3

C	B	E	M	U	I	N	A	R	C
E	U	A	S	T	C	P	I	M	A
S	A	L	L	A	E	V	B	U	S
C	O	X	A	L	C	S	I	R	W
A	A	H	V	P	U	R	T	C	O
P	M	I	U	R	U	T	O	A	B
U	S	R	E	M	I	E	B	S	L
L	C	M	E	O	E	B	R	I	E
A	U	F	A	L	U	B	I	F	R
H	O	S	H	I	N	B	O	N	E

HUMERUS **COXAL** **SCAPULA**

SHINBONE **ELBOW** **SACRUM**

FIBULA **CRANIUM** **FEMUR**

RIB

Word Search 4

E	F	T	G	V	S	U	R	F
S	O	N	N	N	F	C	G	I
Y	O	E	I	S	I	I	N	L
E	T	O	M	A	S	V	I	S
L	B	N	M	I	H	E	I	I
L	A	A	I	L	I	A	K	D
O	L	C	W	I	N	I	S	Q
V	L	P	S	N	G	C	N	S
G	N	O	P	G	N	I	P	E

DIVING **PINGPONG** **SAILING**

SKIING **SWIMMING** **FISHING**

VOLLEY **FOOTBALL** **SURF**

CANOE

Word Search 5

V	P	A	R	T	Y	R	R	R	I
O	O	M	O	I	A	O	O	E	I
L	O	S	A	E	I	M	C	G	C
S	O	N	S	G	D	U	V	A	W
K	R	V	F	A	P	T	R	G	A
I	S	E	E	I	T	D	N	I	V
S	S	D	D	R	E	S	I	F	E
S	T	I	R	R	A	S	U	T	A
M	D	R	A	A	O	M	T	R	A
S	I	B	S	M	O	E	I	P	O

CUPID **WAVE** **CARD**

MARRIAGE **LOVE** **GIFT**

BRIDE **PIE** **PARTY**

KISS

Word Search 6

C	E	L	L	O	C	I	E	E	E
C	P	T	R	O	M	B	O	N	E
R	A	I	A	R	U	N	G	C	G
B	T	I	A	R	V	U	N	G	I
A	E	T	E	N	I	R	A	L	C
S	P	T	I	T	O	O	R	A	I
S	M	P	A	B	L	C	A	A	I
O	U	R	M	T	I	A	H	A	L
A	R	A	L	M	N	I	C	L	M
E	T	U	L	F	D	R	U	M	R

VIOLIN **CLARINET** **TRUMPET**

PIANO **GUITAR** **BASS**

CELLO **DRUM** **FLUTE**

TROMBONE

Word Search 7

C	S	P	O	K	E	S	M	A	N	O
C	R	T	O	G	C	E	T	M	D	T
O	O	N	A	O	L	N	I	I	E	O
U	T	A	C	V	L	C	S	N	P	C
N	A	N	T	E	A	D	E	I	U	E
C	N	C	C	R	H	N	N	S	T	D
I	E	N	N	N	Y	A	E	T	Y	R
L	S	P	A	O	T	D	L	E	O	O
O	T	N	E	D	I	S	E	R	P	Y
R	O	C	N	O	C	I	N	R	E	A
V	I	C	E	R	S	R	N	E	A	M

SENATOR **MAYOR** **COUNCILOR**

PRESIDENT **DEPUTY** **GOVERN**

MINISTER **SPOKESMAN** **VICE**

CITYHALL

Word Search 8

B	U	S	N	K	I	D	S	A	S
D	I	E	D	T	O	S	A	U	0
A	I	M	W	A	S	W	E	E	T
V	S	U	I	K	U	E	R	Z	H
S	A	T	C	N	E	V	E	R	G
A	N	S	H	A	T	B	P	A	I
Z	I	O	T	R	A	N	S	J	R
D	G	C	C	P	C	L	A	A	F
B	H	D	A	A	U	C	C	I	A
S	T	P	U	M	P	K	I	N	F

WICHT **PUMPKIN** **PRANK**

KIDS **COSTUME** **SWEET**

NIGHT **DIED** **CASPER**

FRIGHT

Word Search 9

A	E	G	N	A	R	O	N	O
R	Y	R	R	E	H	C	G	A
A	N	L	A	A	T	N	L	P
E	N	E	A	N	A	N	A	B
P	Z	I	L	M	R	E	M	E
L	U	S	W	P	O	E	E	R
S	A	N	D	I	P	A	L	R
P	N	V	A	U	K	A	O	Y
D	E	P	A	R	G	T	N	W

MANGO **MELON** **PEAR**

ORANGE **KIWI** **BANANA**

APPLE **GRAPE** **BERRY**

CHERRY

Word Search 10

T	E	M	L	E	H	C	D	R	A
D	N	A	S	N	E	F	I	N	L
A	L	E	A	F	F	F	L	T	O
R	S	G	I	D	L	E	A	F	T
M	G	N	R	E	A	N	I	C	N
O	K	T	O	E	K	G	G	A	U
R	D	O	T	U	N	Ñ	G	L	G
E	S	E	N	I	R	A	M	E	I
D	I	A	L	G	D	C	D	N	R
O	O	A	N	B	U	L	L	E	T

KNIFE **TANK** **MARINES**

RIFLE **HELMET** **ARMORED**

GRENADE **BULLET** **DAGGER**

GUN

Word Search 11

R	E	R	E	E	L	N	A	C	Z	O	L	R	I
H	L	O	I	I	I	D	R	N	L	I	L	A	A
A	D	Y	R	V	O	A	S	A	W	E	A	L	T
N	A	M	E	I	V	L	A	I	R	U	S	M	O
D	I	A	L	K	L	A	O	A	L	I	L	N	O
D	L	E	I	L	O	L	O	T	E	V	O	L	R
R	O	L	R	E	V	I	R	D	W	E	R	C	S
I	R	I	E	H	O	C	R	O	A	S	H	L	N
L	E	F	T	S	A	A	R	C	S	I	R	E	O
L	I	R	O	U	L	T	R	E	D	C	O	S	A
R	A	A	D	R	N	E	L	L	N	M	C	I	O
M	R	L	L	B	C	A	I	E	A	E	O	H	R
H	A	M	M	E	R	C	Z	O	H	E	C	C	L
R	A	P	I	E	O	P	L	I	E	R	S	A	I

HAMMER **FILE** **SAW**

PLIERS **KEY** **HANDDRILL**

BRUSH **HANDSAW**

CHISEL

Word Search 12

F	C	G	I	R	A	F	F	E	S	R
E	N	E	T	I	G	E	R	I	O	F
L	E	A	O	N	A	E	E	B	R	E
L	C	O	C	O	D	R	I	L	E	J
E	R	I	D	C	C	P	E	N	C	A
Z	E	L	E	P	H	A	N	T	O	G
A	Z	E	B	R	A	N	O	L	N	U
G	C	P	O	O	U	T	U	E	I	A
A	G	O	O	N	O	H	O	I	H	R
L	I	O	N	T	A	E	O	U	R	L
R	H	I	N	O	L	R	C	E	A	F

GIRAFFE **GAZELLE** **PANTHER**

ZEBRA **TIGER** **JAGUAR**

LION **RHINOCEROS** **ELEPHANT**

COCODRILE