

The Impact of COVID-19 on Accountants: Evidence from Saudi Arabia

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Received: 1 Sep. 2022, Revised: 22 Sep. 2022, Accepted: 5 Oct. 2022.

Published online: 1 May 2023.

Abstract: The current research aimed to investigate the impact of COVID-19 quarantine periods on accountants' performance and remote work environment in Saudi Arabia. Additionally, it aimed to examine government and professional bodies support and its implications on accountants' adaptability to the changing work environment. Following a descriptive analytical research design, the research utilized a structured questionnaire survey to collect data. The participants were (1,086) accountants responded to the questionnaire. The research was conducted during the years 2020/2021. Results indicated COVID-19 had a large positive impact on accountants' performance, whereas it had a negative impact on reducing the scope of work and reducing liquidity. Additionally, there were negative and positive impacts on accountants' work environments in Saudi Arabia. Meanwhile, there was a large positive impact of Government and accounting professional bodies' support on accountants' adaptability during COVID-19. The impact of Government and accounting professional bodies' support on accountants' adaptability during COVID-19 can be predicted by the impact of the remote work environment on the performance of accountants, also the accounting profession has a positive role in times of pandemics and crisis. The research recommendations included providing accountants with ongoing training courses to improve their performance and technological skills during pandemics.

Keywords: COVID-19, Accountants, Accountants Performance, Remote Work, Saudi Arabia.

1 Introduction

Since the World Health Organization (WHO) declared COVID-19 a pandemic on 11th March 2020 [1], all fields have forced to follow remote work (online) either in education or in managerial work. The rapid spread of the (COVID-19) has fundamentally affected companies and business institutions and all fields related to them. One of the most important fields related to it is the processes of preparing and reviewing financial statements, as it has become necessary to provide decision makers with useful information to in light of the uncertain conditions that accompanied this crisis regarding the future of companies and business institutions. This presents unprecedented challenges, and by the end of this crisis, it will become clear that there are many negative impacts of this crisis on financial reports. This rapid spread also has led to give the crisis management the utmost importance to a large number of professions especially in accounting organizations. It gave the organizations the opportunity to provide assistance to their members in times of emergency.

COVID-19 pandemic has caused major repercussions on the health and economic stability of many countries [2, 3]. The impact of the pandemic varies in each country, depending on the strength of the economy and the country's ability to withstand and recover from the pandemic [4]. Many Studies have reflected the negative impact on stock markets, sectors and businesses [5-9]. Correspondingly, governments and authoritative bodies around the world responded to the pandemic in different ways in an attempt to minimize the negative impacts of the pandemic on their economies. Some of the precautionary measures included country quarantine, self-quarantine, the closure of schools, universities and national borders, outlawing public gatherings, and citywide lockdowns [10]. Importantly, such measures had substantial implications for accountants and the accounting profession [11].

COVID-19 has caused several challenges for the accounting profession as well as chances for reinvention. This epidemic has an impact on accountants' job and mental health. Covid-19 has impacted the accounting profession as a whole, putting

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more pressure on professional and ethical behavior. Communication with the client and the team without interruption has become a difficulty [12]. The COVID-19 epidemic has put significant strain on accountants. Daily roles have changed, as they have in other professions, and they have had to adapt to keep firms alive and the economy solvent [13]. According to JABIN [14], the pandemic has decreased the accountants' productivity and highly affects the accounting profession. Many accountants struggle with using new technology.

Several studies have emphasized the impact of COVID-19 on financial reporting such as [15, 16], audit quality such as [17], the use of artificial intelligence by the accounting and auditing profession [18]; and the accounting profession's work environment [19, 20]. Despite this and due to the novelty of the pandemic, there is limited research within the accounting literature about the impact of COVID-19 on accountants' performance and the accounting profession. As such, the current research seeks to fill this gap by exploring the impact of COVID-19 on the professional activities of accountants and the remote work environment in Saudi Arabia (SA). Governments were able to keep the epidemic under control thanks to accounting and calculative techniques [21]. Professional bodies must also retain engagement in other areas that impact the profession, such as law, corporate governance, and taxation. As a result, the professional body should attempt to assist other parties in drafting any standards or laws that may affect the profession. [22].

Furthermore, the research aims to shed light on accountants' adaptability and the importance of the Saudi government and accounting professional bodies' support during times of crisis.

In addition, Leoni et al. [21] stressed the need for more research in accounting and management examining the impact of global crisis such as COVID-19 as it has different implications for society, individuals and organizations. They emphasized that there is limited research examining accounting and management role following the global crisis whereby human activities and health are under risk around the world. Similarly, Rinaldi et al. [23] emphasized that among the important avenues for future accounting research is understanding the social impact of COVID-19 on the accounting profession. Further, Papadopoulou and Papadopoulou [20] encouraged future research to examine the challenges associated with COVID-19 and its impact on the accounting profession which would provide comparative results that contribute to the growing body of international literature. Consequently, the research responds to such calls and extends the empirical literature related to understanding the impact of crises on accountants and accounting [19-21].

The research contributes to the literature on disasters [24], taking into account both short- and long-term impacts on accountants [25]. This recent growing body of literature focuses, however, on the impact of COVID-19 pandemic on economy and neglects other aspects such as accountants. A limited number of researchers have explored the impact of COVID-19 on accountants. Resultantly, such consideration of current work challenges due to COVID-19 pandemic significantly affected the accountants' performance. Therefore, it is imperative to understand the impacts of COVID-19 pandemic on accounting profession, particularly on accountants as they make a significant contribution to the economy in general and accounting profession in particular.

There is a big need for further research addressing the impacts of pandemics on individuals, organizations and society, which had still needed to be investigated in accounting [21]. Unless we understand the implications of COVID-19 pandemic on accountability and its related issues concerning accountants, we will not be able to suggest effective ways and scenarios of enhancing accountants' role not only in the current challenges times but also in the coming future pandemics. Moreover, the research provides evidence from Saudi Arabia where there has been very limited research on the topic and, therefore, the findings have implications for policymakers, accounting regulatory bodies, accounting firms and accountants in the country. Hence, this research investigates the impact of COVID-19 quarantine periods on accountants' performance and remote work environment in Saudi Arabia. Additionally, it explores government and professional bodies support and its implications on accountants' adaptability to the changing work environment.

By giving insights into the impact of the pandemic from a Saudi Arabian perspective, this research contributes to the existing body of literature related to accounting during pandemic. Furthermore, it is the first research in Saudi Arabia that provides evidence regarding to the impact of COVID-19 on accountants' work environment, activities and adaptability. It also sheds light into the government support and highlights the importance of the accounting profession in times of crises and pandemics.

The remainder of this research paper is organized as follows. The second section provides the literature review and hypotheses development followed by the third section that highlights the research methodology. Further, the fourth section presents the research findings and discussion and the final section includes the conclusion, contributions and limitations of the research as well as presents recommendations and suggestions for future research.

2. Literature review and hypotheses development

2.1 Accountants and COVID-19:

One of the most crucial elements of a company is the accountant, who processes business activity data into management and financial strategic information. The COVID-19 pandemic negatively affects all life aspects, including accounting [26]. Accounting has the ability to help the government understand the scope of a pandemic and produce calculations to support response efforts [27].

The literature related to accounting has illustrated accounting's role in different global conditions such as the financial crisis that began in 2008 [28], natural disasters [29], certain crises [30], extreme events [31]; and how it affected organizations, industries and individuals. Following COVID-19's outbreak, El-Mousawi and Kanso [15] conducted research to examine the likely impact of COVID 19 on financial reporting in Lebanon. A descriptive analytical approach has been used to analyze the likely impact of COVID 19 on 25 items through distributing a questionnaire survey to a number of Certified Public Accountants. The research indicated that COVID 19 will likely impact highly or very highly the 25 items surveyed and hence financial reporting will significantly be impacted based on the perception of Lebanese CPAs. For example, COVID 19 will highly reduce future cash inflows in the company, and will very highly increase the level of uncertainty. Furthermore, a study by Rashwan and Alhelou [18] examined the influence of using artificial intelligence on the accounting and auditing profession during the COVID-19 period in Gaza. The research concluded that using artificial intelligence improved the accountants and auditor's quality of performance and efficiency, facilitated conducting complex work, and improved accounting and auditing systems.

The COVID-19 pandemic, according to Keats & Verhelst [32], ushered in a new era of employment. Many companies are quickly adapting to a remote work environment, relying on cloud technology, Zoom, and other tools (not as usual). Accounting professionals across the world have been praising the current notion of "workplace" in this massive home experiment for several months. Kaka [33] confirmed that accountants aware of the danger of compliance and the consequences of COVID-19 in the manner they provide services. Digital technology is a must-have for professional accountants who want to be relevant and in business during this epidemic and in the future.

Moreover, Papadopoulou and Papadopoulou [20] conducted a structured questionnaire to examine the impact of COVID 19 on the accounting profession in Greece, The researchers focused on the adaptation of accounting professionals towards the vast changes that was implemented as a response to COVID 19 and the problems that surfaced within the accounting professional environment, the findings reflect that the pandemic has greatly affected the activities of accounting professionals as they had to change their routines and work process to adapt to the changes that emerges following COVID 19. For example, Greek accountants working hours and work pressure has increased, however, their income has decreased. Further, the communication with customers has been impacted negatively during the pandemic period. The adaptation with the changes brought by COVID 19 was perceived to be difficult by the accountants and that working remotely impacted negatively the communication and professional relationship with the customers, income, and duration to finish the tasks. Further, their research emphasized that accounting profession plays a significant role in Greece especially during periods of uncertainty and emergency whereby the economy faces high risk.

Elmarzouky, Albitar & Hussainey [17] conducted a study to see if COVID-19-related information is linked to more performance disclosure in annual reports. Furthermore, it uses three governance mechanisms to explore the moderating influence of corporate governance on the link between Covid-19 and performance disclosure. Results indicated a substantial positive correlation between the Covid-19 disclosure and the annual report company performance disclosure. JABIN [14] conducted a study to assess the impact of COVID-19 on Bangladesh's accounting profession. The participants were 190 from Bangladesh. A five-point Likert scale was employed. Results showed that COVID-19 has a significant impact on the accounting profession in Bangladesh. The accounting profession will advance as a result of the changes brought on by pandemics. These momentous shifts will become the new normal in the globe.

According to Heltzer & Mindak [34], COVID-19's physical and budgetary limits have hampered accountants' productivity, ability to do their job, ability to retain relationships with clients and coworkers, and capacity to provide future services to potential customers. Auditors expect that client internal controls will become less efficient, and that identifying the efficacy of internal controls will become more challenging. Auditors also believe that their clients' status in COVID-19 will make it more difficult to determine. In this regard, we may hypothesize that-

1. *H1. There is a positive impact of COVID-19 on accountants' performance.*

2.2. Remote work

According to Almutairi [35], COVID-19 has raised the load on the accounting profession since organizations do not have the full ability to disclose information in accordance with the requirements, and because of decline and failure to get clear and correct data. The study also showed that the accounting sector benefits from learning from this experience, which necessitates management creativity and solutions.

Al-Okaily [36] conducted a study to assess the impacts of system quality, information quality, process quality, collaboration quality, service quality, individual performance, and workgroup performance on organizational performance during the COVID-19 pandemic. Data was collected from 104 accounting managers via a self-administered survey (ASE). Results showed that individual performance is strongly impacted by information quality, process quality, and service quality. Furthermore, individual performance has a considerable impact on workgroup performance. Additionally, individual and workgroup performance have an influence on organizational performance.

Accountants are currently facing certain challenges and changes due to the pandemic. One of these changes is related to the actual way accountants work as they have to apply remote work [20]. With regard to remote work environment, Delfino and van der Kolk [37] focused on investigating remote work within professional service companies in Italy. They examined management control practices during the early stages of the pandemic shedding light into the changes that occurred as a result of working remotely. Their findings indicated that managers increased the number of online meetings and used software technologies to monitor the employees' activities. The organizational hierarchies became more flattened and the social relationships among managers and employees decreased. The remote work environment resulted in applying more constraining control systems over employees, which impacted the employees' motivation and behavior. It increased employees' stress and led them to voluntarily try making their practices more visible to their managers. Further, Kondratowicz et al., [38] concluded that remote work is highly linked with high job satisfaction and decreased levels of stress. Therefore, the second hypothesis has been formulated as follows:

1. *H.2. There are positive and negative impacts of remote work environment on accountants' performance during COVID-19.*

2.3 Saudi Arabia and COVID-19:

The first identified COVID-19 case in Saudi Arabia was on 3rd March 2020 [10]. Since then, Saudi Arabia has been significantly adversely affected by the pandemic, not least of all because of the fall in oil prices [2, 39]. In response, the Saudi government took numerous measures in a bid to minimise the impact and limit the potential for the virus to spread, such as imposing travel restrictions, closing borders and shopping malls, introducing remote working, online teaching, issuing curfews, suspending prayers at mosques and restricting Hajj and Umrah. It was only during May 2020 that the Saudi authorities announced a plan to gradually reopen the economy by lifting some of the previously imposed restrictions.

A number of initiatives were launched such as providing a support package of SAR70 billion to the private sector and suspending tax, fees and other payments to boost the liquidity in the private sector. Furthermore, the National Development Fund increased its financing; budgetary reallocations were made to enhance the available resources for the Ministry of Health and to ensure that private sector employees would not be made redundant due to the financial restraints experienced by their establishments; and using the unemployment insurance fund (SAR9 billion) to support private sector employee wages [2, 39].

Meanwhile, during 2020 the Saudi Central Bank (SAMA) lowered its policy rates on two occasions, announced a SAR50 billion package to support SMEs and the private sector, and a further SAR50 billion package to supplement the liquidity of the banking sector to help facilitate the provision of credit. Also, in order to overcome the decline in oil prices, during May 2020 the Ministry of Finance announced a plan to rationalise government spending and increase revenues from non-oil sectors [2]. Furthermore, the Zakat, Tax and Customs Authority increased the rate of VAT from June 2020 to 15% instead of 5% and also increased the fees on certain customs duties for a number of goods [40, 41]. Consequently, accounting firms and accountants in Saudi Arabia have been affected by COVID-19, as has the business environment. This was especially apparent during periods of remote working and curfews, whereby accountants' daily work routines were impacted [42, 43]. Correspondingly, the Saudi Organisation for Certified Public Accountants (SOCPA) launched several initiatives to mitigate the economic and financial impact as well as to support its members and establishments who were licenced to practice accounting and auditing in SA during the pandemic. This support took the form of permitting the use of electronic signatures by certified public accountants; extending the deadline for submitting annual data to accounting and auditing offices and companies until the curfew period had ended; postponing the payment of annual subscriptions for accounting and auditing offices and companies until the end of 2020; not having to claim continuing professional education hours for the year 2020; and suspending membership related to the cancellation and suspension of membership with regard to non-compliance with payment and continuing professional education points until the end of 2020 [43].

Moreover, the Zakat, Tax and Customs Authority announced several initiatives to facilitate zakat and tax procedures which were in accordance with the IMF's global recommendations for tax authorities. Most notably, this included postponing the submission and payment of declarations, suspending the imposition of fines and procedures for stopping services, procedures for the voluntary disclosure of any undisclosed tax liabilities and exemption from fines resulting from this disclosure for all taxpayers [41].

Since the outbreak of COVID-19, the Saudi government has launched numerous initiatives to support individuals and companies in the private and public sectors. The value of these initiatives has exceeded SAR214 billion [44]. This action helped to reduce unemployment levels and support the public and private sectors during the pandemic [44, 45]. However, despite the various initiatives and measures taken by the Saudi government and accounting authoritative bodies, there is limited knowledge about the impact of COVID-19 on accountants' performance and adaptability in Saudi Arabia and this emphasizes the importance of the contribution of the current research. Further, Carungu et al., [19] examined COVID-19's influence on shaping accountants' work approaches. Their research revealed that there are nine contingent phases that reflected accountants' reactions and actions towards the pandemic with short- and long-term implications. Despite the accountant's initial shock towards the pandemic, they become more adaptive to the new changing environment and to the new work routines.

2.4. Government and accounting professional bodies

Accounting professional bodies and accountants are an accounting firm's main valuable assets [14]. The consequences of COVID-19 pandemic may differ in its degree from one economy to another [46, 47]. This difference may be due to the governments' efficiency to strike a balance between public health and economic cost [48]. Following many acts, the government intervened to sustain and balance the economy during COVID-19 [49, 50]. Accounting professional bodies are ideally positioned to encourage ethical behavior in the workplace through membership and continuing education for members. As a result, if professional bodies can make a significant contribution to improving members' performance through continuing professional development [51]. Governments and accounting professional bodies both want to help the economy flourish. When a professional body aims to meet the needs of accountants, auditors, budget staff, and others involved in public financial management in the public sector while also attracting members from the private sector, the government will have a vested interest in the organization's formation and development [22]. Professional bodies respond by acting as a conduit for the new government ideas, informing members about the proposals, offering realistic implementation recommendations, and ensuring that members received any necessary assistance. Professional bodies also collaborate with the government to develop measures for assisting businesses throughout the epidemic. Professional bodies are able to lobby for beneficial outcomes thanks to their particular understanding of accountants' needs and experiences [13]. Therefore, the third and fourth hypotheses have been formulated as follows:

3. H.3. *Government and accounting professional bodies' support have a positive impact on accountants' adaptability.*

4. H.4. *The impact of Government and accounting professional bodies' support on accountants' adaptability during COVID-19 can be predicted by the impact of the remote work environment on the performance of accountants, and the importance of the accounting profession in times of crisis.*

2.5. Accounting profession

Papadopoulou & Papadopoulou [20] refer to the significance of the accounting profession, especially during the time of COVID-19 pandemic. Accounting professionals work in a wide range of sectors and hold a number of responsibilities. They had to assist them all in order to guarantee that they have the necessary skills and resources to do their tasks. Accounting and financial oversight agencies that are strong and efficient will become more important. They will appreciate in value in the near future. They will play a key role in reviewing programs and expenditures, as well as devising plans for preventing and responding to future epidemics and disasters [14]. Accounting profession plays an important role in finance and business. [52]. Carungu et al., [19] concluded that accounting is a fundamental facilitator and a supportive system for accountants during times of financial emergencies. In addition, Dumay et al., [53] indicated that governments can use accounting systems to facilitate better adaptation and quick response during unexpected events [53, 54]. Huber et al. [55] state that accounting plays a valuable role in crisis literature. In this regard, we may hypothesize that-

5. H.5. *The accounting profession has a positive role during pandemics and crises.*

Overall, our research is different from studies that focus on the impact of COVID-19 pandemic on economy and stock returns without shedding light on accountants. Only little is known on the impact of the pandemic on the accountants' performance. This research aimed to uncover the combination of issues that dealt with COVID-19 pandemic and accountants, remote work and accountants' performance, Government and accounting professional bodies' support and accountants' adaptability, and significance of accounting profession during crises and pandemics. Doing so, this research provides an analysis of the hypotheses and findings. Then, we offer recommendations and suggestions.

3. Research Methodology

3.1. Research Design

The research followed the analytical descriptive design to suit its subject and objectives. It aimed at collecting data about the impact of the quarantine period on accountants' performance and remote work environment in Saudi Arabia, and to examine the level of support provided by government and professional bodies and its impact on accountants' adaptability during the pandemic. Using a questionnaire, the obtained data was analysed using SPSS. The descriptive design describes the studied phenomenon and also detects the relationship between the studied phenomenon and the variables that affect it.

3.2 Participants

The participants were (1,086) accountants derived from the population of accountants working in the private and public sectors in Saudi Arabia. They were randomly selected and the Saudi Organization for Chartered and Professional Accountants (SOCPA) helped the author distribute the questionnaire via emails and social media channels. Regarding ethical consent prior to administering the questionnaire. The participants were approached to participate in the research by informing them the significance of this research and that their personal information and identity would be confidential as well as all the obtained information would only be restricted to scientific research purposes. They were adjusted and distributed according to the following variables as shown in table (1).

Table 1: Participants' distribution according to the research variables

Research Sample Variables		Frequencies	Percentage
Gender	Male	970	89.3%
	Female	116	10.7%
	Total	1086	100
Age	18-25	29	2.7%
	26-34	287	26.4%
	35-44	429	39.5%
	> 45	341	31.4%
	Total	1086	100
Marital status	Single	156	14.4%
	Married	930	85.6%
	Total	1086	100
Education	Secondary School or below	4	0.4%
	Diploma in accounting	61	5.6%
	Bachelor in accounting	836	77%
	Master or high diploma	159	14.6%
	PhD	26	2.4%
	Total	1086	100
Position	Accountant	198	18.2%
	Certified Internal Auditor (CIA)	156	14.4%
	Certified Management Accountant (CMA)	211	19.4%
	Certified Public Accountant (CPA)	305	28.1%
	Value-added tax specialist	103	9.5%
	Other	113	10.4%
	Total	1086	100
Sector	Public	83	7.6%
	Private	1003	92.4%
	Total	1086	100
Organization size	Giant with 3000 or more employees	164	15.1%
	Large, the number of its employees ranges between (500-2999) employees	192	17.7%
	Medium, the number of its employees ranges between (50- 499) employees	398	36.6%
	Small, with less than 50 employees	332	30.6%
	Total	1086	100
Work experience	Below 5 years	94	8.7%
	5-10 years	281	25.9%
	11-15 years	246	22.7%
	More than 15 years	465	42.8%
	Total	1086	100

Region/residency	Middle	500	46%
	South	39	3.6%
	North	12	1.1%
	East	192	17.7%
	West	343	31.6%
	Total	1086	100

Table (1) shows that the participants are distributed according to the variables of gender, age, marital status, education, position, sector, organization size, work experience, and region- residency.

3.3 Instrumentation

To achieve the objectives of the research, a questionnaire survey approach was adopted. The questionnaire was distributed online to various accountants in the private and public sector. Also, the Saudi Organization for Chartered and Professional Accountants (SOCPA) facilitated the distribution of the questionnaire via emails and social media channels to all registered accountants and accounting firms. Primary data was collected via a structured online questionnaire. A pilot test of the questionnaire was conducted in may/June 2020 in which it was sent to a number of professional accountants, academics and researchers and based on their feedback the questionnaire was modified. The questionnaire included a cover page in which it clarified the research purpose, significance and emphasized that the identity of participants is anonymous and their participation in the questionnaire is voluntary in which they can withdraw at any time.

The questionnaire consists of two main sections. The first concerns primary information about the participants and the second concerns the research topic that includes 56 statements divided into four subsections. The first subsection focuses on exploring the impact of COVID-19 on the professional activities of accountants; the second subsection explores the impact of COVID-19 on the work environment and remote working; the third subsection assesses the adaptability of accountants to the new work environment during the COVID-19 outbreak and the level of support provided to them; and the final subsection investigates the role and importance of the accounting profession during times of pandemics and crises. The questionnaire was adjusted in terms of validity and reliability.

Validity and reliability of the questionnaire

The correlation coefficient was used to calculate the *validity* of the internal consistency between the score of each domain and the total score of the questionnaire, by applying to a survey sample consisting of (60) respondents, and the results were as shown in table (2).

Table 2: The validity of the internal consistency between the score of each domain and the total score of the questionnaire N = 60

Correlation coefficients between the score of each domain and the total score of the questionnaire	
The professional activity of accountants has been affected with COVID-19 in the Kingdom of Saudi Arabia	
Correlation coefficient	0.73**
The impact of the work environment and remote work on accountants during the COVID-19 pandemic in the Kingdom of Saudi Arabia	
Correlation coefficient	0.78**
Verifying the level of ease of adaptation to the new work requirements of accountants during the Corona virus pandemic in the Kingdom of Saudi Arabia and the extent of support provided to them	
Correlation coefficient	0.74**
Verifying the role and importance of the accounting profession. on the scale below	
Correlation coefficient	0.69**

(**) significant at level of 0.01.

Table (2) shows that the value of correlation between the score of the first domain and the total score of the questionnaire is (0.73). The value of correlation between the score of the second domain and the total score of the questionnaire is (0.78). The value of correlation between the score of the third domain and the total score of the questionnaire is (0.74). The value of correlation between the score of the fourth domain and the total score of the questionnaire is (0.69). Further, all of them

are statistically significant at (0.01) level. This indicates the high and adequate validity of the questionnaire and its domains.

To verify the *reliability* of the questionnaire, Cronbach's Alpha formula was computed as shown in Table (3).

Table 3: reliability value of the questionnaire and its domains

Cronbach's Alpha	Instrument
.80**	The first domain
.77**	The second domain
.93**	The third domain
.91**	The fourth domain
.91**	The instrument as a whole

(**) significant at level of 0.01.

Table (3) shows that all values of Cronbach's Alpha coefficient are statistically significant at 0.01 level which indicates the high reliability of the questionnaire

4 Findings and Discussion

The questionnaire has been designed to provide a holistic view of the impact of COVID-19 on accountants and the accounting profession in Saudi Arabia. It was distributed to accountants working in the private and public sectors and a total of 1,086 questionnaires were returned. A five-point Likert scale was used, offering the following choices: strongly agree, agree, neutral, disagree and strongly disagree. Data were collected using the Google Forms service, coded and processed using Microsoft Excel, and the Software Statistical Package for the Social Science (SPSS).

Descriptive statistics method including mean, standard deviation and impact degree were calculated to identify dependent and control variables. Mean and standard deviation for independent variables statements score. Multiple regression methods used to analyse and interpret the questionnaire data to describe the items and the study variables. A five-point Likert scale was used as the scoring system in this research (strongly agree = 5, strongly disagree = 1). The obtained data were analysed and results were as follows.

4.1. The impact of COVID-19 on accountants' performance

Hypothesis 1 predicted that "There is a positive impact of COVID-19 on accountants' performance". Mean and standard deviation of the sample's responses o the first domain items were calculated, as shown in table (4).

Table 4: Mean and standard deviation of the sample's responses of the first domain items "The impact of COVID-19 on accountants' performance"

No.	Item	Mean	St. Deviation	impact Degree
1	The impact of COVID-19 on your professional activity.	3.844	1.046	High
2	The impact of the COVID-19 on the preparation and review of financial statements.	3.622	1.095	High
3	The assumptions that the entity makes about the future (continuity or uncertainty) are disclosed.	3.713	0.895	High
4	The necessary disclosures are provided to assist the users of the financial statements to make high quality decisions.	4.021	0.844	High
5	COVID-19 reduced the scope of business and affected liquidity.	4.424	0.832	very high
6	COVID-19's impact on the 4th budget for the year 2019 before the issuance of the report for the first quarter of the year 2020.	3.701	1.133	High
7	After issuing the report for the first quarter of .2020 (during the pandemic), has the 2019 budget been revised?	3.528	1.029	High

8	The effects of COVID-19 pandemic are disclosed after the date of the financial statements and before they are approved for publication.	3.813	0.922	High
9	Having a high level of difficulty in meeting professional deadlines prior to the COVID-19 pandemic	3.455	1.139	High
10	Having a high level of difficulty in meeting professional deadlines during the COVID-19 pandemic.	3.963	0.974	High
11	Expected credit losses are determined.	3.669	0.869	High
12	The impact of COVID-19 on attendance for the actual inventory coun.	3.748	1.144	high
13	Alternative audit procedures have been implemented during the COVID-19 pandemic that provide sufficient appropriate evidence regarding the existence and condition of the stock.	3.651	0.961	High
14	COVID-19 impact on the group auditor's ability to participate in the component review	3.677	1.016	High
The first domain as a whole.		3.773	0.533	High

Table (4) shows that the mean of the sample responses on most items of the first domain and the first domain as a whole indicated a large positive impact of COVID-19 on accountants' performance, while the mean of the sample responses on the item no. (5) indicates that the virus had a negative impact on reducing the scope of work and reducing liquidity.

This result indicated that the pandemic has substantially affected the scope of the business and the liquidity. Moreover, it has created difficulties in meeting professional deadlines, created challenges for auditors in terms of conducting their work, resulted in negative impacts on budgets, and complicated efforts to prepare financial statements. As such, this confirms the findings of El-Mousawi and Kanso [15] who surveyed the expectations of Lebanese CPAs regarding COVID-19's potential impact on financial reporting and future cash inflows. Furthermore, the respondents indicated that additional disclosures were reported to facilitate effective decision-making such as disclosures regarding the going concern assumption, disclosures regarding the impact of COVID-19, and disclosures regarding expected losses. This is in accordance with the guidelines indicated by accounting firms and professional bodies that COVID-19 will result in additional disclosures [42, 43, 56-58] and research studies [15]. The findings somewhat agree with Shallal [59] who indicated that the accounting profession appears to be influenced by COVID 19 in various aspects. The reduction in economic and financial activities appears to be one of the most obvious challenges faced by accountants during the spread of COVID19. The use of digital technology revealed to be the least important variable. Nevertheless, the findings contradicted with Heltzer & Mindak [34] who concluded that the physical and financial constraints of COVID-19 have hindered the accountants' productivity and negatively affected their performance.

4.2. Remote work environment has impacts on accountants' performance during COVID-19.

Hypothesis 2 predicted that "Remote work environment has impacts on accountants' performance during COVID-19". Mean and standard deviation of the responses of the sample to the second domain items were calculated, as shown in table (5).

Table 5: Mean and standard deviation of the responses of the sample to the second domain items "The impacts of remote work environment on accountants' performance during COVID-19"

No.	Item	Mean	St. Deviation	Impact Degree
1	Daily working hours during COVID-19 pandemic are less compared to before the pandemic.	3.67035	1.29941	High
2	Daily working hours during COVID-19 pandemic are equal to before the pandemic.	2.45488	1.096828	Low
3	Daily working hours during COVID-19 pandemic are more than before the pandemic.	2.780847	1.335734	Medium
4	The impact of remote work on the flexibility of	3.546041	1.174694	High

No.	Item	Mean	St. Deviation	Impact Degree
	working hours negatively.			
5	Monthly income during COVID-19 pandemic is lower compared to before the pandemic.	4.044199	1.142347	High
6	The monthly income has not changed during the COVID-19 pandemic.	2.356354	1.235829	Low
7	Monthly income during the COVID-19 pandemic is more than before the pandemic	1.970534	1.027303	Low
8	The impact of remote work on increasing work-related costs (in terms of providing a mobile device, internet, etc.	3.383057	1.223671	Medium
9	The impact of remote work on reducing wastage of time and expenses spent on commuting to work.	3.578269	1.106681	High
10	Lack of privacy at work during the COVID-19 pandemic in terms of the lack of a suitable place at home to work remotely.	3.438306	1.138099	High
11	The level of work-related stress increases during the COVID-19 pandemic.	3.86372	1.038357	High
12	The level of psychological stress associated with fear of isolation and illness increases during the COVID-19 pandemic.	4.131676	0.951434	High
13	Job insecurity before the COVID-19 pandemic.	2.770718	1.146386	Medium
14	Job insecurity during the COVID-19 pandemic.	4.026703	1.045608	High
15	Good communication with colleagues before the COVID-19 pandemic.	4.142726	0.769749	High
16	Good communication with colleagues during the COVID-19 pandemic.	3.276243	1.091706	Medium
17	Good communication with customers before the COVID-19 pandemic.	4.08011	0.812364	High
18	Good communication with customers during the COVID-19 pandemic.	2.983425	1.121101	Medium
19	I worked remotely before the outbreak of the COVID-19 pandemic.	2.705341	1.241268	Medium
20	Working remotely during the COVID-19 pandemic.	4.02302	0.99604	High
21	I have experience using modern technology.	4.346225	0.711861	Very high
22	Provides appropriate accounting software for remote work.	3.941989	1.019327	High
23	Provides educational and rehabilitation programs to work during the COVID-19 pandemic.	3.560773	1.140575	High
24	The impact of remote work on the quality of reports negatively.	3.255985	1.118276	Medium
25	The use of visual display technology that allows the auditor to verify the presence and condition of the stock (to select at the moment some stock items and ask the other party to highlight them for verification).	3.129834	1.047575	Medium
26	Do you think that working remotely during the COVID-19 pandemic will be the beginning of a qualitative shift for the profession?	3.760589	1.122765	High
The second domain as a whole.		3.431612	0.422781	High

Table (5) demonstrates that the mean of the sample responses on the items no. (1,4,5,9,10,11,12,14,15,17,20,22,23,26) of the second domain indicated a large positive impact of remote work environment on accountants' performance during COVID-19, the mean of the sample responses on item no. (21) indicated that the remote work environment had a very large positive impact on accountants' performance especially when it comes to technology.

While the mean of the sample responses on the items no. (3, 8, 13, 16, 18, 19, 24, 25) of the second domain indicated a large positive impact of remote work environment on accountants' performance during COVID-19. Also, the mean of the

sample responses on the items no. (2, 6, 7) indicated that the remote work environment had low impact on accountants' performance.

While the mean of sample responses on the second domain as a whole indicated a large positive impact of remote work environment on accountants' performance during COVID-19.

The result confirmed that COVID-19 significantly affected their work and the remote working environment. Psychological pressure relating to the fear of infection and isolation was high, increased work pressure and decreased salaries. Furthermore, among the negative impacts of working remotely was the lack of privacy, low quality reports and less flexibility in terms of working hours. Interestingly, the accountants indicated that their working hours reduced during COVID-19. These findings supplement the conclusions of Papadopoulou and Papadopoulou [20] whereby accountants in Greece indicated that working hours and work pressure increased, whilst their income decreased during the COVID-19 pandemic.

On the other hand, the respondents indicated a positive impact regarding the availability of relevant accounting software whilst working remotely, the use of virtual live applications for auditors to conduct their work, the availability of training programmes, less time spent on transport and lower transportation expenses. In addition, a high percentage of accountants indicated that they have experience of using modern technologies and accountants perceived that the pandemic will reshape the accounting profession. In this regard, Albitar et al.'s [60] desk research of auditing indicated the importance of investing in digital systems such as network security, artificial intelligence, and blockchain to facilitate the adoption of new work environments following the COVID-19 pandemic. Similarly, Rashwan and Alhelou [18] determined that artificial intelligence will improve accountants' and auditors' quality, performance and efficiency whilst also improving accounting and auditing systems. Consequently, the findings indicated that there were negative and positive impacts on accountants' work environments in Saudi Arabia. Furthermore, the findings stressed the importance of improving accountants' skills and the role COVID-19 played in emphasizing the importance of using and investing in technologies. IFAC [61] highlighted that COVID-19 contributed greatly in accelerating the transformation of the accounting profession in terms of adopting digital processes and technologies and these will be incorporated to a greater extent in businesses in the future [61].

4.3. Government and accounting professional bodies' support has a positive impact on accountants' adaptability

Hypothesis 3 predicted that "Government and accounting professional bodies' support have a positive impact on accountants' adaptability". Mean and standard deviation of the sample's responses to the third domain items were calculated, as shown in table (6).

Table 6: Mean and standard deviation of the responses of the sample to the third domain items "The impact of Government and accounting professional bodies' support on accountants' adaptability during COVID-19"

No.	Item	Mean	St. Deviation	Impact Degree
1	Existence of clear mechanisms and policies to work during the COVID-19 pandemic.	3.448	1.061	High
2	The presence of continuous support and monitoring of work during the COVID-19 pandemic.	3.443	1.022	High
3	Having an effective governance system to work during the COVID-19 pandemic.	3.483	1.006	High
4	Provide a reasonable time frame for properly understanding and implementing emergency measures.	3.532	1.018	High
5	Existence of an alternative plan in the event of illness/dismissal of an accountant.	3.588	1.069	High
6	Ease of understanding and implementing emergency measures related to the COVID-19 pandemic.	3.767	0.940	High
7	Ease of understanding and implementing what is issued by international boards (International Accounting Standards Board, International Auditing Standards Board) related to the COVID-19 pandemic.	3.708	0.903	High
8	Ease of understanding and implementing the	3.883	0.840	High

No.	Item	Mean	St. Deviation	Impact Degree
	practical guidelines issued by the Saudi Arabian Monetary Agency related to the COVID-19 pandemic.			
9	There is satisfactory cooperation with the relevant government agencies and related services.	3.948	0.876	High
10	The state provides facilities and support for businesses to reduce the effects of the COVID-19 pandemic.	4.122	0.839	High
11	Social security policies are in place to limit the effects during the COVID-19 pandemic.	3.786	0.957	High
12	The Saudi Organization for Certified Public Accountants has provided the necessary support to help during the COVID-19 pandemic	3.570	1.024	High
13	The Zakat and Income Organization has provided the necessary support to help during the COVID-19 pandemic.	4.001	0.887	High
The third domain as a whole.		3.714	0.694	High

Table (6) clarifies that the mean of the sample responses on all of the items of the third domain and the third domain as a whole indicated a large positive impact of Government and accounting professional bodies' support on accountants' adaptability during COVID-19.

This result also suggested that accountants had relatively high levels of adaptability in the changing work environment during the COVID-19 pandemic compared to the findings of Papadopoulou and Papadopoulou [20] which indicated that accountants in Greece experienced challenges when attempting to adapt to the COVID-19 work environment.

This research examined the government support provided and found that a high degree of support had been made available to businesses with social security services provided to reduce the impact of COVID-19. Furthermore, the respondents also revealed that there was good cooperation with the related government authorities and their services, and strong support provided by the Zakat, Tax and Customs Authority and SOCPA. In this regard, as mentioned in earlier sections, the Saudi authorities provided monetary support packages and launched many initiatives, tax exemptions and extension periods to minimise the negative effects of the COVID-19 pandemic on companies. Albitar et al. [60] emphasised the significance of providing organisations with temporary relaxations regarding compliance requirements in order to survive. Thus, Saudi Arabia was among the countries that provided a high level of support to the private and public sectors as well as individuals to help overcome the economic repercussions following the lockdown and curfews. Furthermore, the respondents emphasized that during the pandemic there were clear work policies and procedures, good understanding Saudi central bank guidelines, good understanding of what international professional bodies produce, effective governance systems, and good availability of alternative plans in case accountants became infected or needed to isolate. This reflects the level of organisation and clarity of the messages issued by Saudi government authorities. In this regard, KPMG's "Economic Implications of COVID-19, Focus on Saudi Arabia" [39] showcased the substantial efforts made by the Saudi government such as initiating a number of healthcare, economic and social initiatives and commending the level of coordination and cooperation within Saudi government entities to limit the repercussions of the pandemic.

4.4. The impact of Government and accounting professional bodies' support on accountants' adaptability during COVID-19 can be predicted by the impact of the remote work environment on the performance of accountants, and the importance of the accounting profession in times of crisis".

To answer the fourth question "Does the impact of Government and accounting professional bodies' support on accountants' adaptability during COVID-19 can be predicted by the impact of the remote work environment on the performance of accountants, and the importance of the accounting profession in times of crisis?", multiple linear regression analysis of responses of the sample was calculated, a significant regression equation was found ($F(2, 1083) = 161.233, p < .000.$), with an $R^2=0.229$.

The predicted impact of Government and accounting professional bodies' support on accountants' adaptability during COVID-19 is equal to $0.519+(0.609)(RWE)+(0.249)(IAP)$, where (RWE) shorts for the impact of the remote work environment on the performance of accountants, (IAP) shorts for the importance of the accounting profession in times of crisis. Both the impact of the remote work environment on the performance of accountants and the importance of the

accounting profession in times of crisis were significant of the impact of Government and accounting professional bodies' support on accountants' adaptability during COVID-19.

4.5. Verifying the role of the accounting profession during pandemics and crises

Hypothesis 4: predicted that "The accounting profession has a positive role during pandemics and crises". Mean and standard deviation of the sample's responses of the fourth domain items were calculated, as shown in table (7).

Table 7: Mean and standard deviation of the responses of the sample to the fourth domain items "the role and importance of the accounting profession"

No.	Item	Mean	St. Deviation	Impact Degree
1	The accounting profession was of critical importance before COVID-19 pandemic.	4.51	0.68	High
2	The accounting profession is crucial in times of emergency.	4.49	0.68	High
3	The accounting profession plays an important role in contributing to limiting the repercussions of the pandemic in terms of managing risks and crises.	4.32	0.80	High
The first fourth as a whole.		4.44	0.62	High

Table (7) shows that the mean of the sample responses on all of the items of the fourth domain and the fourth domain as a whole indicated a large positive role of the accounting profession during pandemics and crises.

Concerning the role and importance of the accounting profession during times of pandemics and crises, the respondents emphasized that the accounting profession plays an integral role during times of pandemics and crises and contributed to limiting the negative impacts of COVID-19 in terms of managing risks crises. The findings align with those of Papadopoulou and Papadopoulou [20] which indicated the significant role that the accounting profession plays during times of uncertainty and crises. The findings of the study matched those of He et al [62], who argued that the accounting profession, in all of its functions, contributed significantly to the success of some business sectors during the pandemic period by preparing scenarios to confront the virus.

Furthermore, announcements and guidelines were continuously provided in Saudi Arabia by accounting bodies such as the Zakat, Tax and Customs Authority, SOCPA, GCA and SAMA [40]. For example, the General Court of Audit conducted a virtual forum to discuss the potential impact of COVID-19 on internal audit addressing aspects such as the role of internal audit in facing risks and crises and monitoring organisations' commitment to following the mandated precautionary measures that were set to limit the impact of the pandemic and provide guidelines to companies and accountants [63]. Therefore, the various initiatives launched by the Saudi government and professional accounting authorities to some extent reduced the impact of the COVID-19 pandemic on accountants and the accounting profession in Saudi Arabia.

5 Recommendations and suggestions for further research

The importance of preserving the quality of the financial reporting and maintaining effective corporate governance systems should be emphasized during crises periods. Policymakers, practitioners, government authorities and accounting professional bodies in Saudi Arabia regarding the setting of policies and regulations that contribute in making an effective and efficient work environment for accountants, should take into consideration the challenges and obstacles they experienced during the pandemic. Furthermore, holding meetings by accounting stakeholders is highly recommended in order to broaden awareness about accountants' role during pandemics. Accountants should be provided with training courses to improve their performance and technological skills. Senior risk management should place a greater emphasis on the relevance of accounting data quality and its role in decision-making for overcoming future mishandling of similar circumstances. Meanwhile, managers and course designers should upgrade and build accounting system programs using available resources to boost the accountant's productivity. Since the accounting profession needs ongoing assessment, future research on the accountant's profession should be conducted. Researchers can investigate the impact of COVID-19 on other variables related to the accounting profession. The present research can be replicated on another sample of accountants in another country to seek further verification of the findings. Furthermore, comparative study to compare men and women's job satisfactory during COVID-19 pandemic is highly recommended.

6 Limitations of the Research

This research has two limitations. First, the research adopted a questionnaire survey approach to achieve the research

objectives; therefore, an in-depth examination of the social impact of COVID-19 on accountants could not be achieved. Consequently, future research should investigate in detail the social and economic effects of COVID-19 on accountants and the accounting field. Second, the research is a context bound as it provided evidence from Saudi Arabia. However, future studies could extend this research by examining the topic in different contexts.

7 Conclusion and implications

COVID-19 pandemic had a substantial impact on the economic environment in Saudi Arabia and on accountants and the accounting profession in particular, as this research has shown. This research focused on exploring the impacts of the quarantine period of COVID-19 and remote working on accountants' work environment in Saudi Arabia. The analysis of the results and findings verified the research hypotheses as COVID-19 has a large positive impact on accountants' performance, whereas it had a negative impact on reducing the scope of work and reducing liquidity. Additionally, there were negative and positive impacts on accountants' work environments in Saudi Arabia. Meanwhile, there was a large positive impact of Government and accounting professional bodies' support on accountants' adaptability during COVID-19. The impact of Government and accounting professional bodies' support on accountants' adaptability during COVID-19 can be predicted by the impact of the remote work environment on the performance of accountants. Meanwhile, the accounting profession had a large positive role during pandemics and crises. Furthermore, the findings emphasized the importance of government support and the critical role that professional accounting bodies play in issuing guidelines and offering support to companies in periods of crisis. The speed with which the Saudi government and accounting professional bodies responded to issue regulatory policies and guidelines proved instrumental in managing the crisis and mitigating its impact in terms of healthcare, economic and social perspectives. The current research provided several implications for researchers, practitioners in accounting, policymakers, regulative authorities, accounting firms, and accountants regarding the importance of cooperation, collaboration, and support in times of crises. Further, it highlights insights into providing practitioners with better awareness of the factors that may contribute to enhance accountants' role during the COVID-19 pandemic. The obtained results of the research can be beneficial to enhance organizational performance. They also provide decision-makers with relevant and trustworthy theoretical background, that promotes decision-making and, as a result, the performance of the companies and related institution.

Conflict of interest

The authors declare that there is no conflict regarding the publication of this paper.

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