

COVID 19 Pushes Us to New Normal and 4th Industrial Revolution: How Much Prepared Are the Bangladeshi Accounting Graduates?

Umma Hania & Mst. Arjina Khatun

Abstract

The purpose of the study is to show to what extent our accounting graduates are being prepared for the upcoming changes in their profession due to the 4th Industrial Revolution. Bangladesh, with many other challenges, is also experiencing the changes brought about by the 4th industrial. Though we haven't adopted it fully, in the future we have to adopt it in full swing. There is no doubt that COVID 19 and said New Normal accelerates the 4th industrial revolution. No sector or employment class will be exempt from the effects of the fourth industrial revolution due to smart technologies like artificial intelligence, big data, augmented reality, block chain, internet of things, etc. Accounting graduates who hold middle-skilled jobs are going to be the worst sufferer. So, we are worried about our accounting graduates and want to know their readiness for these changes. We have conducted the study on the basis of 3 research questions as what are the impacts of the 4th industrial revolution on the accounting profession, what are the required skills to face the changes, to what extent Bangladesh graduates are prepared to take challenges. For the study, we have conducted an online survey using a standard questionnaire among recent accounting graduates of Bangladesh from several institutions. Then we have analyzed the data, explained it with theory, and drawn conclusions. We found that our Accounting graduates are not ready for the 4th industrial revolution especially a huge amount of national university students are lagging behind. The study will contribute to accounting education literature in BD and make the students ready with the required skills to combat their future changing workplace.



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1. Introduction

The human group is going through such a period right now: the covid-19 pandemic. The intense pressures that individuals, organizations, and societies face in this crisis are accelerating the fourth Industrial Revolution (4IR). The pandemic is forcing all of us to realize how much we rely on 21st-century technologies—artificial intelligence, the internet of things, social media, digital learning platforms, augmented and virtual reality, drones, 3D printing and so much more—to keep us healthy and to change economies. There is no doubt that COVID 19 and said New Normal accelerates the 4th industrial revolution (Bonilla-Molina, 2020; The Economist). Prime Minister Sheikh Hasina recently said, "It is not only Bangladesh, but the whole world will also need skilled manpower and for that we have reformed our education system, giving priority to vocational training." She was speaking at the international conference on "Skills Readiness for Achieving SDG and Adopting Industrial Revolution 4.0" on February 2, 2020. According to Chui et al. (2016), no sector or employment class will be exempt from the effects of the fourth industrial revolution due to smart technologies like artificial intelligence, big data, augmented reality, block chain, internet of things, etc. This study explores how the determined rise of advanced automation in accounting is changing the profession, globally as well as in Bangladesh and the essential skills of accountants to survive in the future. At present, human-being and software are working together. Advancements in machine learning, artificial intelligence (AI), and robotics are also contributing to the overall improvement of the accounting profession. Brown and Martin (2017) said Accounting graduates who hold middle-skilled jobs are going to be the worst sufferer. So, accountants need to be improving their skills to keep swiftness with machines. Artificial intelligence, robotics, and machine learning are free from human error and have higher processing power; which causes corrosion in traditional accounting jobs. Though, technological platforms are replacing accounting jobs; demand for skilled and high-quality accountants is on the rise (Gilbert. N., 2022). Artificial intelligence helps professionals to learn, think and perform better. The future role of an accountant is going to be an analyst, trusted mentor, and vision of good financial sense rather than simply keeping. But there is a shortage of research regarding how prepared our accounting graduates are for the upcoming changes in their profession. To fill up the gap is the motivation of our study. A global and practical view of Bangladesh, through this paper, will help to analyze the condition in a better way.

1.1 4th Industrial Revolution

Technology is part of the culture, in fact, every culture. The first industrial revolution emerged in the 1780s with steam power, making humans more productive. Its effects had consequences on textile manufacturing, which was first to adopt such changes as well as iron industry, agriculture, and mining although it also had societal effects with an even stronger middle class. It also had an effect on British industry at that time. Then in 1870, the second industrial revolution emerged with the mass production of electrical energy. It was a period of great economic growth with an increase in productivity which also caused a surge in unemployment since many factory workers were replaced by machines. The third industrial revolution emerged with the development of IT and Electronics, which enabled more efficient production. It is also known as the Digital Revolution, which occurred in the late 20th century, after the end of the two world wars. Resulting from a slowdown of industrialization and technological advancement compared to previous periods. Till now the world experienced three industrials revolutions that seem to change the whole picture of the world. The country which accepted these revolutions are leading the world. We are now in a new phase where the fusion of several technologies is not only automating production but also knowledge. There are many working to classify and name the phenomenon we are all experiencing. Talk of "Industry 4.0" emerged from Germany's manufacturing industry in the early 2000s. The changes that are occurring are

happening now because humans have finally developed the computing capacity to store massive amounts of data which in turn can enable machine learning. The outcome of this is the development of what are called cyber-physical systems. In the 21st century, the world is experiencing the 4th industrial revolution. This revolution seems to blur the line between physical, digital, and biological spheres. Emerging technologies like artificial intelligence, robotics, the internet of things, autonomous, ethical, 3D printing, nanotechnology, biotechnology, material science, energy storage, and quantum computing will accelerate the digitalization of the world and will change our lifestyle substantially. The 4th industrial revolution trends to not just increase the production capacities or feeling economic growth but it has the potential to change the biological potential of humans by increasing life expectancy, creating modern machines, and diagnosis methods to fight diseases. 4th industrial revolution can't be said as an enemy of development and making the rich richer. It is wholly up to us how we use this revolution for the betterment of greater humanity.

1.2 New Normal

New Normal a term that has been very well-known nowadays is related to the change or transition period towards something new. A New Normal can be referred to as the state or situation in which the economy, society, and lifestyle of a country settles following a crisis happened which differs from the state or situation that remained before the outbreak of the crisis. Generally speaking, new normal is a new way of living and going about our lives, works, and interaction with other persons. This term has been used in World War-I, the financial crisis of 2007-2008, and the 2008-2012 global recessions' post-period, and so on. This term is also noticed to use in the most recent COVAID-19 pandemic times. The New Normal term has been widely using during the COVAID-19 Pandemic event and afterward because of the changes in human behavior, lifestyle & daily habits which are triggering the new behaviors with which people have to cope with their lifestyle. University of Kansas Health System's physicians anticipate that the COVAID-19 pandemic will bring a change in most people's daily life; People will reduce the physical communication and greetings such as Handshakes, Hugs, and the overall person-to-person contact until unanimous vaccination. The new normal situation will supersede the old. However, there are some criticisms regarding this term when the media misuses this term while describing the situation or behaviors that are atypical, making it a cliché. This paper attempts to determine the impacts of the 4th industrial revolution on the accounting profession, find out the required skills to face the changes and explore the extent to which our accounting graduates are being prepared for the upcoming changes in their profession due to the 4th Industrial Revolution. For achieving the mentioned objectives this paper is structured in the following manner: the introduction part is followed by a comprehensive literature review. These are carefully followed by research methodology and the research findings.

2. Literature review

According to Hart (2017), Industry 4.0 can introduce a revolutionary change in accounting practices as accountants will be able to obtain data with greater accuracy and timely which was not previously attainable. Thus, with improved data accuracy and obtainability, more accurate decisions can be made. Also, Industry 4.0 will increase the trustworthiness and relevance of the accounting reporting as accountants will be provided with the opportunity of focusing on the big-picture strategies rather than getting more involved with automated operations (Burritt and Christ, 2016). But, in order to avail of these opportunities, accountants must need to be well informed about the new technologies. Among the impacts of Industry 4.0, one of the most important aspects is that this revolution will increase human productivity to a great extent as people will be able to make faster choices and decisions with the help of digital technologies such as automation or Artificial Intelligence (AI) (Gabriel and Pessl, 2016). Brown

and Martin (2017) arose a serious concern whether, upon the implementation of Industry 4.0, accounting graduates will be able to secure their jobs. Because Industry 4.0 will affect the people with middle-skill jobs most, and unfortunately, the level of knowledge that most accounting graduates hold is supposed to be employed in those middle-skill jobs. So, what accounting graduates should do now? Mohd et al., (2009), Bonekamp and Sure, (2015) asserted that to ensure the job security of the accounting graduates in the era of Industry 4.0, the teaching and learning activities of the accounting students should be tailored in such a way that it can meet the employers' expectations. In 2016, Cann added that accountants can get themselves prepared for this Industry 4.0 era by enhancing their awareness, improving their knowledge through continuous professional development (CPD), and collaborating with other professionals. According to Hasanudin et al. (2019), the 4th industrial revolution will significantly alter the demand for employees in the job market. The demand for high-skilled with highly paid employees and low-skilled with low paid employees will remain but the demand for middle-skilled employees will decline and the middle-class laborers will be forced to get out of the job market. But in the present situation, these middle-class employees hold the major portion of the job market and their dismissals will lead to many problems in society. Unfortunately, a major portion of these middle-class jobs is held by accounting graduates. The roles of the accountants are changing in the presence of industry 4.0. One of the most significant advantages of technological advancements is the elimination of the need for tedious, manual operations, allowing accountants to devote more time to delivering value to the company. In addition, cloud technology has reduced the expenses of infrastructure support for businesses. New technology enables a more thorough examination of business drivers, as well as the application of insight and actionable analytics in gaining a competitive advantage in the business market. As a consequence, accountants are now diverting from the jobs such as bookkeeping or stewardship and are trying to become strategic partners of business organizations. Again, technology is to a certain degree disrupting the functions of accounting sectors. Improvements in data processing and the ability to store more data have resulted from key advancements in the field of technology. Accountants may work faster while simultaneously looking at more information, which has a significant impact on their working styles. Cloud technology and big data are two specific advancements that are influencing all businesses, not just accountants. Data and technology have also given clients more power. Accounting job is evolving as a result of factors such as Blockchain, Making Tax Digital, and Open Banking and accountants must stay ahead of the curve to avoid being left behind (Olaru, 2021). AI and machine learning will undoubtedly play a role in the future of accounting, which is a positive thing. There's no need to be concerned about precision. Any figures generated by automation will always be checked by trained accountants. Qualified accountants will always double-check and confirm the accuracy of any figures generated by automation. Accountants should take a step back and consider their technology goals carefully. Move swiftly, adapt to the changes, and remain flexible. This revolution must not be overlooked. The nature of the impact of cloud computing on specific aspects in the economic concentration system in organizations is clearly stated by author Al-Zoub (2017): Financial operations; Document; Physical equipment; Accounting books; Procedure; Software; Financial report; Setting up an accounting company. According to the findings, when cloud computing is used in accounting, it helps businesses to restructure their accounting apparatus compactly because it is unaffected by geographical location or equipment. Timeliness and accuracy are improved in economic analysis, and real-time processing and reporting are supported. When comparing firms with and without cloud computing technology in the process of data recovery due to technical faults, according to Zerban's study (2015), organizations with technology save and recover (takes 2.1 hours) 4 times faster than underutilized firms (takes 8 hours). Artificial intelligence, according to Daniel E. OLeary's (1991) research, can have a substantial impact on accounting databases

that have established models to help decision-makers and focus on information needs. Furthermore, current advancements in AI have highlighted the importance of integrating contextual and symbolic data in order to have a better knowledge of accounting. Currently, when accounting software allows for automated data entry and modification, the use of automation technology and artificial intelligence to record books is becoming a reality (Deloitte, 2016). A system like this may generate clear reports and offer guidance on implementation alternatives while automating all repetitive operations, particularly in accounting. The use of new technologies, particularly cloud computing, artificial intelligence, and Blockchain, has changed and will continue to revolutionize the financial accounting industry. When technology is used to improve the quality of the information in the economic system, it will become more diverse and accurate, with more integrated financial and non-financial data (Olaru, 2021). Therefore, the accounting graduates of Bangladesh need to grasp a good understanding and proficiency in the key forces of industry 4.0 such as cloud computing, Blockchain, AI, etc.

Theoretical framework

Cognitive dissonance theory is a renowned theory given by Leon Festinger. Cognitive dissonance occurs when a person has two contradictory beliefs or when they participate in an action that goes against their belief. Individuals try to reduce dissonance either by changing their beliefs or action. This research finding indicates that actual job responsibility (action) is quite different from what is taught in the classroom (belief) especially regarding technological skills. So, there is cognitive dissonance and students should try to change their beliefs by learning various software skills.

3. Methodology

In order to find the result of this study, we have collected data through the questionnaire survey method. We conducted an online questionnaire survey in Google form due to the COVID-19 situation. We conducted our survey on the accounting students of MBA and BBA 4th year from major public universities (DU, JU, JNU, RU, BUP & CU) major private universities (BRAC, North-south, and AIUB), and the National University of Bangladesh. A total of 250 questionnaires have been distributed among various university students, out of which, 146 completed questionnaires were returned. Through preliminary scanning, 16 samples of six universities have been excluded due to low response rate and non-representative of population. We have surveyed these students because they have already finished the latest graduation program from their respective universities and ready for going to a competitive job market. After conducting the survey, we analyzed the collected data using statistical software and showed it with various charts and graphs.

Sample of our study

The study has been conducted based on a random sampling method. We have taken 130 samples from various accounting students of BBA 4th year and MBA of various universities of Bangladesh. We categorized our sample based on year (BBA 4th year and MBA) and gender (male and female).

Public, private, or national?	number	Public, private, or national?	number
National university	20	National university	20
BBA 4 th	14	Female	11
MBA	6	Male	9
private university	17	private university	17
BBA 4 th	13	Female	5
MBA	4	Male	12
public university	93	public university	93
BBA 4 th	24	Female	50
MBA	69	Male	43
Grand Total	130	Grand Total	130

4. Research Findings

The research has been conducted lead by some research questions. The findings have been shown question-wise. In terms of familiarity with the term 4th industrial revolution, 75% of national university students, 24% private university students, and 6.45% of public university students said no.

“Do you have needed skills?” in an answer to this question, 60% of national university students, 29% private university students, and 34% of public university students said no. In terms of awareness about the changes due to the 4th industrial revolution, 75% of national university students, 12% private university students, and 27% of public university students said no. Also, 75% of national university students, 29% private university students, and 37% of public university students said that they are not ready to accept the changes that are coming to their profession due to the 4th industrial revolution.

Public, private or national?	Familiar with 4th IR?	% familiar	Know needed skills?	% of needed skills	aware of the change	% aware of the changes	ready to take changes?	% ready to take changes?
National	20		20		20		20	
No	15	75%	12	60%	15	75%	15	75%
Yes	5	25%	8	40%	5	25%	5	25%
private	17		17		17		17	
No	4	24%	5	29%	2	12%	5	29%
Yes	13	76%	12	71%	15	88%	12	71%
Public	93		93		93		93	
No	6	6.45%	32	34%	25	27%	34	37%
Yes	87	94%	61	64%	68	73%	59	63%
Total	130	100%	130	100%	130	100%	130	100%

We found that 50% of students of the national university, 47% of private and 39% of public university students have been familiar with 4th industrial revolution from other sources not involving their class, course content, and their teachers.

Public, private, or national?	How do you know about the 4th IR?	How do you know about the 4th IR?
National university		20
From your class or course content	18%	3
from your teacher	12%	2
Others	50%	15
private university		17
From your class or course content	24%	4
from your teacher	29%	5
Others	47%	8
public university		93
From your class or course content	37%	34
from your teacher	24%	22
Others	39%	37
Grand Total	100.00%	130

It is found that 40% of national university students, 47% of the private university, and 43% of public university students think that the 4th industrial revolution may happen in Bangladesh. Again 50% of national university students, 18% of private universities, and 11% of public university students think that the 4th industrial revolution will not happen in Bangladesh. Less

than half of the surveyed pupils, mostly public university students and fewer national university students, think that it will happen.

Public, private or national?	4th will happen in Bangladesh?	% of students
National university	20	15.38%
Maybe	8	40%
No	10	50%
Yes	2	10%
private university	17	13.08%
Maybe	8	47%
No	3	18%
Yes	6	35%
public university	93	71.54%
Maybe	40	43%
No	10	11%
Yes	43	46%
Grand Total	130	100.00%

It is very worrying that 75% of national university students, 6% of the private university, and 3% of public university students don't have any knowledge about the required software skills for the 4th industrial revolution. Few students know about advanced skills but most of the students don't know wave accounting, tally, quick book, etc. software. 1-2% of students hold required skills.

public, private, or national?	% software skills	software skills
National university	15.38%	20
Advanced Excel	10%	2
all of the above	0%	0
None	75%	15
QuickBooks, Tally. ERP, Adva Excel	5%	1
QuickBooks, Wa Accounting, Adv Excel	5%	1
Wave Accounting, Advanced Excel	5%	1
private university	13.08%	17
Advanced Excel	31%	5
None	6%	1
QuickBooks	12%	2
QuickBooks, Advanced Excel	5%	1
QuickBooks, Tally. ERP	6%	1
QuickBooks, Xero, Tally. ERP, Adv Exc	6%	1
Tally. ERP	5%	1
Tally. ERP, Advanced Excel	5%	1
Wave Accounting	12%	2
Wave Accounting, Advanced Excel	12%	2
public university	71.54%	93
Advanced Excel	34%	32
all of the above	1%	1
None	3%	3
QuickBooks	1%	1
QuickBooks, Tally. ERP, Adv Exc	2%	2
QuickBooks, Xero, Adv Excel	1%	1
Tally. ERP	20%	18
Tally. ERP, Advanced Excel	34%	32
Wave Accounting	1%	1
Wave Account, Advanced Excel	1%	1
Wave Accounting, Tally. ERP	1%	1
Grand Total	100.00%	130

4th industrial revolution will be bestowed with information hence cloud computing and big data analysis are very essential skills. Unfortunately, 10% of students of national universities and 2% of the public university haven't heard about cloud computing at all. Also, 45% of national

university students, 41% of private universities, and 44% of public university students don't possess this skill. Similarly, 40% of national university students, 53% of the private university, and 72% of public university students don't have big data analysis skills.

Public, or national?	private	cloud computing	% cloud computing	Efficiency in big data analysis?	% big data analysis
National university		20	15.38%	20	15.38%
haven't heard the term		2	10%	9	45%
No		9	45%	8	40%
Yes		9	45%	3	15%
private university		17	13.08%	17	13.08%
No		7	41%	9	53%
Yes		10	59%	8	47%
public university		93	71.54%	93	71.54%
haven't heard the term		2	2%	5	5%
No		41	44%	67	72%
Yes		50	54%	21	23%
Grand Total		130	100.00%	130	100.00%

It is found that 75% of national university students, 29% of private university, and 40% of public university students have learned their software skills at their efforts and from other institutions. Though private and public university students have learned some of the skills from their university, the % is very less in the national university.

Public, or national?	private	How have you achieved the software skills?	How have you achieved the software skills?
National university		15.38%	20
by your effort		45%	9
from university		5%	1
from university, by your effort		20%	4
other institutions		30%	6
private university		13.08%	17
by your own effort		29%	5
from university		29%	5
from university, by your own effort		35%	6
from university, other institutions		6%	1
public university		71.54%	93
by your own effort		31%	29
by your own effort, other institutions		5%	5
from university		33%	31
from university, by your own effort		14%	13
from university, by your own effort, other institutions		7%	6
from university, other institutions		2%	2
other institutions		7%	7
Grand Total		100.00%	130

5. Conclusion

As it is evident from the findings that our Accounting graduates are not ready for the 4th industrial revolution especially a huge amount of national university students are lagging behind. The concern is whether universities are helping them to achieve the required skills. Most of the students who have learned software skills have learned from outside institutions or at their own effort. A few days ago, an employer was looking for an accountant to make an interactive accounting and email system to reach his customer but he failed to find this from our Accounting graduate.

Finally, he had to hire from abroad. So, it is high time to prepare our graduates with technical skills as well as IT skills. Also, universities should sit with the company to look into their

demands and prepare graduates accordingly. However, the study is based on the sample. Also, we have worked with plain accounting graduates only. Those who go for more professional degrees like CA or CMA etc. are not included here. Because though their professions are also influenced by the 4th industrial revolution, the required skills are different. So, the same study can be conducted on the audit profession or any other students from other disciplines.

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