Challenges and strategies of journalism in the era of big data

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Abstract

Reporting is a relevant field that passes through several challenges and problems. In the age of big data, it is the responsibility of reporters to prepare themselves to fulfil the demands and needs of the changing world. The central drive of this study is to consider the trials and strategies of broadcasting in the time of big data. The study is conducted using a quantitative research method. The information is composed by using a survey. The questionnaire is distributed among 150 respondents of the research. The data is examined by using SPSS software. The study concluded that journalists have to face multiple challenges that can be resolved by using advanced skills and techniques. The study suggested that journalists should learn advanced Technology is and techniques to survive in the market.

Keywords: Big Data, Journalism, Challenges and Strategies

1.INTRODUCTION

Journalism is a process by which journalists used to produce and publish reports about different events in the world. While, Journalists are people who directly associated with journalism and use various media channels such as digital, electronic, and print media to disseminate information. As we know, that Technology has completely changed the strategies for every field of life and creates multiple challenges to perform different tasks. These days, almost every organization is heavily relying on big data to get adequate information and perform different analytical techniques and strategies to fulfil the need and demands of the current situation. Big data is a modern way of managing and store structured and unstructured data. Big data management plays an active part in the activities and operations and provides better services to customers (Wagstaff, 2018). Also, it helps to improve the decision-making process and profitability and performance of any organization. As compared to the previous era, big data allows businesses to make potential decisions, that further help to achieve competitive advantages. The other significant benefits of big data to the companies is that it helps to formulate an effective marketing strategy and play a vital role to engage customers with the organization. There is a prominent

benefit of significant data utilization is that it helps the company to fulfil the needs and desires of customers as per the advice and preferences (Islam, 2018). However, like other sectors of the economy, big data has also great importance in journalism. Today, journalists can improve ranking by using big data most effectively. There are several tools available for journalists that can be used for creating great content that attracts the attention of readers. The good readership of any material can also generate several advertisement opportunities and improves the effectiveness of journalism and journalists. Chekdesk is a tool that is used for verification of news used by the journalist to get access to accurate information. Several people in the world are using online mediums to spread false rumours. The check desk facilitates journalists in this situation. Some journalists often faced legal challenges, and they have to arrange different documents to manage various issues. Logikcull is a software that helps the journalist by making the content searchable.

Furthermore, reporting and gathering information is another critical challenge that required much effort and time. Google media tool is one of the most reliable tools that is used for analytics. This tool helps the journalist to learn about trending topics and issues people want to discuss. Similarly, storify is another essential tool that helps in spreading information. This site dramatically helps journalists identify the information that people are talking about and creating content by using the exciting interface.

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Moreover, citizen desks assist in building new sources by using a fantastic application. The easy-to-use mobile app facilitates journalists by verifying information. More and more, Twitter is the most desirable place for a journalist because many people on Twitter used to disseminate information. The journalist can get an idea by analyzing the interaction of people with each tweet. It also helps to identify the interest factor about particular contents and also facilitates when is the best time for tweeting. The journalist indeed has to face multiple challenges in this highly competitive environment, but by using a variety of tools, the journalist can easily contribute to the success (Riech, 2018).

The core determination of this revision is to determine the challenges and strategies of journalism in the age of big data. The study helps to gather relevant information regarding problems and policy in the ground of writing. As we know, broadcasting is the most crucial field. Initially, people used to believe in news and information printed and published in newspapers and magazines. The invention of digital media creates challenges for journalism and many channels used to spread such content that does not only grab the attention but also create hierarchy in the society. Therefore, the journalist can play a significant role to provide useful content and informative ideas to readers by using modern Technology and strategy. Although it is not a very simple task, the use of contemporary Technology in an appropriate manner can make a big difference. The main impartial of this reading is as follows;

- To determine the challenges
- To indicate the strategies
- To communicate the suitable recommen-dations

1.1 Problem statement

The advancement in Technology and the invention of public broadcasting has created several challenges and benefits for every field of life. The attractive interface of social media sites dramatically helps users to share information and knowledgeable content. Several people used to share the wrong information that creates several challenges for journalism and journalists. It is the obligation of reporters to part accurate material that does not only ranks in search but also grabs the attention of readers. However, it is not very easy to list the evidence because millions of people are involved in sharing and creating content. The availability of too much poor content creates problems for journalism (Kothari, 2019). So, this study identifies the challenges and

strategies used by journalism in the era of big data.

1.2 Significance of the research

The study is very significant for and journalism as a whole. The study created awareness about tasks and strategies in the field of journalism. The study also highlighted the ways to see the challenges in the new and highly competitive world. Moreover, the study will be beneficial for scholars, teachers, and students who will research this topic shortly.

2.LITERATURE REVIEW

Big data is a form of digital data that highly depends on different tools, computers, the internet, and many other devices. The big data includes information about liking and disliking, preferences, interest, and location of the users. These days, every organization must require significant big data to contributes to the knowledge-based society (Nweke & Ajah, 2019; Dorr & Casewall, 2017). A study conducted by Riahi & Riahi (2018) stated that these days' companies are significantly focusing on gathering data in a large amount for making effective decisions. The advancement in Technology much helps companies to get the required information from the customers. The study highlighted the importance of big data, challenges for the organization, and characteristics of big data—another most essential study conducted to communicate the reputation of big data analytics for trade organizations.

Aldiabat et al. (2017) investigated that these days' companies all over the world are trying to get maximum information from social media platforms. The primary purpose of companies in collecting information is to increase their profit by providing products and services as per the demand and needs of customers. The big data technology is one of the techniques that help to collect information by using modern technology and devices. The management of the company uses this data to make effective decisions. The studies conducted to identify how the control of any organization get maximum benefits from the big data (Stanila et al., 2019). Some researchers discussed that big data had become a need for every Business. The position of big data in journalism cannot be big because there are some researches conducted to recognize the status of big data effectiveness of journalism in the modern age. Brastsas & Veglis (2017) explained that previously the journalist used to collect information by using different sources. But these days, the ways of sharing information have entirely changed. The journalists used to collect information by using various online

sources and applications. Researchers have introduced a new term, which is data journalism. As per this, the journalist produces and distributes information by using online sources. The study mainly focuses that journalists must enhance the knowledge and learning skills to manage data effectively.

Data Journalism skills greatly facilitate journalists to survive in a highly competitive world. It is not very easy to process and report data to fulfil the needs and demands of millions of users around the world. The study much focused that students of journalism must learn, analyze, and store data as per the modern techniques and tricks. The necessary skills that are essential for that journalism are editing, coding, news writing, storytelling, digital marketing, and digital designing. The study also communicated that students of data journalism have to face multiple challenges, that can be resolved by using affective skills and knowledge (Green, 2018; Goldgruber et al., 2017).

Big data and information broadcasting are closely interlinked with each other—the number of studies conducted to investigate the part of big data in reporting. Research showed by Veglis et al. (2018) examined that the field of journalism has undergone many ups and downs. The journalism practices adopted by journalists these days are entirely different from the past. Initially, journalists just depend on print media. Still, with the invention of digital media, the ways of performing various tasks such as collecting information, storing, and reporting information have completely transformed. However, the design of the internet has dramatically influenced journalism and focus on enhancing the capabilities and skills as per the need and demand for modern technology. These days, the journal highly depends on online tools and digital data analysis to publish and report information. The study also communicated that not only the profession of journalism has completely transformed, but the way to report information has also completely altered. Many researchers believed that modern journalism has completely changed as compared to traditional journalism. It is indicated that communication Strategies and tools have also included journalism because the primary purpose of journalists to spread information. It is the primary responsibility of any journalist to communicate about trending events in the world in an effective way (Gangopadhyay & Dutta, 2019; Witscheg & Deuze, 2018).

According to Redden & Allan (2017) journalism in the period of big data is highly depends on readers' choice. The content must able to grab the attention of readers because the internet is filled with different types of content. Therefore, there is a great need to use new skills and techniques to grab the attention of readers. Journalists have to manage several problems and challenges to ensure transparency. Several researchers believe that these days play effectively all in the growth and development of any company. It is like an oil that runs the company. Therefore, there is a great need to use modern technology and techniques to collect data from target customers so that the company can provide them excellent facilities as per the changing needs and demands (Wiesenberg et al., 2017).

Another study conducted in the context of big data and trials and opportunities. It is stated that the advancement in internet and web technologies, significantly contribute to the growth of data. The study is mainly focused on the techniques used for analyzing the data; Technology used to store, collect, and analyze data. The study also included technological improvements and methods used in the growth and development of data in Companies. Apart from that, relational database management systems also discuss creating awareness and identify the limitations of big data. The study also communicated limitations and advantages (Bhadan & Jothimani, 2017).

According to Silva et al. (2019), the revolution in technology has contributed significantly to the development of companies. Some organizations in the world highly depend on big data and are using modern technology to get the number of benefits associated with big data collection, analysis, and implications. It is believed that the ways of collecting and communicating information have entirely changed because of Technology. Technology helps together good knowledge about different aspects that further can help to increase the productivity and creativity of the organization by making effective decisions.

Another study conducted by Safdar et al. (2018) investigated that big data dramatically helps in the medical treatment of the number of patients. But at the same time, patients have some concern about privacy, confidentiality, and informed consent. Similarly, several companies used big data to make effective decisions but the privacy and confidentiality of customers suffered in this whole process. The studies suggested that there is a great need to address these issues to fulfil ethical standards.

Many people believe that big data technology

has contributed significantly to the growth and development of a society. It much helps different organizations in a country to manage their operations effectively and appropriately. For Example, it dramatically helps political parties to fulfil their aims and objectives (Kelly, 2017). It is also communicated that the internet plays a fundamental role to gather information. The study uses the mixed-method approach to analyze the factors that impact the perception of customers about big data. It is suggested that there is a great need to invest in modern technology to get better results because the advanced Technology ultimately gives the best outcome, and enhance the productivity (Khvatova, et al., 2017).

Christin, A. (2017) stated that the algorithm dramatically helps organizations to make an effective decision and fulfil the goals and objectives of a company. Several researchers focus that algorithm technologies support in the field of journalism to create a valid conclusion. The study also identifies that web journalism and criminal justice are two critical professions that have some similarities. Schmidt et al. (2018) investigated that web 2.0 tools have created several opportunities for companies and help them to engage with customers appropriately. The study is conducted by taking in-depth interviews. The research is mainly focused on participatory journalism and innovative technology. It is investigated that these days are more active and valuable as compared in the past. Some news outlets are equipped with modern facilities and technologies. The management engaged with users further help the administration to make appropriate decisions. Most people believe that advanced Technology has dramatically facilitated people to manage their operations in the best way.

According to Hammond (2015), data broadcasting is entirely changed from traditional journalism. The success of any journalist highly depends on gathering encode data that further help to report a better story. The study mainly focuses that the people who are associated with journalism must learn modern techniques and Technology so that they can effectively survive in the hi competition and grab the attention of several readers around the world. Salman et al. (2018) demonstrated that newsrooms are significantly focusing on using big data in the field of journalism to perform more effectively. The number of people who used to share information and other content. They have excellent expertise and knowledge and can easily rank their content on online

platforms. It is also stated that this is the age of automation in which people can easily use different Technology and sides to spread information and communicate messages to the audience. The journalist can make a difference by providing reliable content on online sites.

3.METHODOLOGY

3.1 Research Design

Research is mainly divided into three types of data mixed-method research, descriptive research and empirical research. The most common type of research is descriptive research. The central determination of using descriptive study is that it helps to collect information from the target audience and helps to make effective decisions or provide a solution to the problem (Bouiskidis & Rutberg, 2018; Shidur & Rahman, 2017). This research follows descriptive Research Design because it is the most popular and accurate way of collecting information. The examination utilized a quantitative research strategy since it assists with measuring the outcomes. The quantitative research techniques used a poll to gather data from members of the investigation. The best thing about using a survey to collect data is that it assists with managing data from an enormous example of the term in a brief timeframe (Mitch et al., 2019).

3.2 Data collection

The study gathers information by using two main sources and primary and secondary sources. The primary data is scattered by handling questions, and secondary information is collected from secondary sources such as journals, books. Websites and articles.

3.3 Sampling design

The study is mainly conducted in China. The main population of the study is students of universities. The study chose 150 participants who belong to different universities in China. The sample of the investigation was gathered utilizing a nonprobability inspecting procedure. Also, the researchers used a comfort examining strategy to pick the example of the examination. The primary reason for selecting an accommodation testing strategy is that it is a straightforward, fast, and helpful method of choosing an example of the study (McCombes, 2020).

3.4 Research instrument

The investigation was gathered utilizing a nonprobability inspecting procedure. Also, the researchers used a comfort examining strategy to pick the example of the examination. The primary reason

for choosing an accommodation exploring policy is that it is a straightforward, fast, and helpful method of choosing an example of the test. The questionnaire is divided into two parts. Part A is about demographic information, and part B is about questions. Moreover, the study used close that questionnaire to facilitate participants of the survey (Krosnick, 2017).

3.5 Data analysis

After collecting the information from the participants of the research, the study used SPSS software to gather evidence from the participants. The study followed a descriptive analysis to analyze the data. The results of the study offered in the form of a pie chart to provide a clear understanding (Foley, 2018).

SECTION A: DEMOGRAPHIC ANALYSIS

Reliability statistics

Reliability Statistics	
Cronbach's Alpha	N of Items
.982	10

The above table shows that Cronbach's alpha value is 0.982, that identifies that data is reliable for the study.

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q1	150	1.00	5.00	1.9733	1.07408
Q2	150	1.00	5.00	2.0200	1.12608
Q3	150	1.00	5.00	2.0133	1.11720
Q4	150	1.00	5.00	1.9333	1.07233
Q5	150	1.00	5.00	1.9867	1.04904
Q6	150	1.00	5.00	2.0000	1.09299
Q7	150	1.00	5.00	2.0533	1.15152
Q8	150	1.00	5.00	2.0267	1.07408
Q9	150	1.00	5.00	2.0733	1.12385
Q10	150	1.00	5.00	2.0800	1.12638
Valid N (listwise)	150				

The above table is representing descriptive statistics. The maximum mean value in the high table is 2.0800, and the maximum standard deviation is 1.1 2638. Similarly, the minimum mean value in the above table is 1.9 333, and the minimum standard deviation value is 1.07233.

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	129	86.0	86.0	86.0
	female	21	14.0	14.0	100.0
	Total	150	100.0	100.0	

Gender
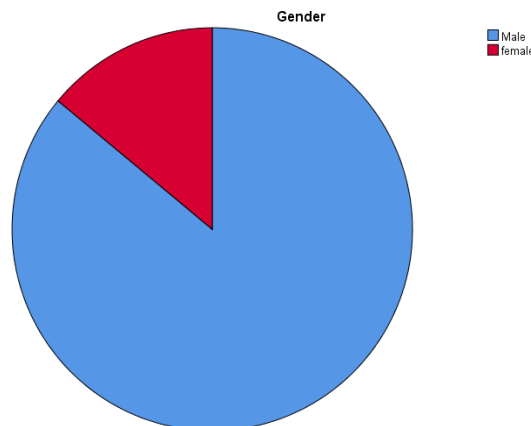
It is indicated by the above by chart and table that there were 129 male participants and 21 female participants involved in the study.

Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	20-25	24	16.0	16.0	16.0
	25-30	30	20.0	20.0	36.0
	30-35	52	34.7	34.7	70.7
	above 35	44	29.3	29.3	100.0
	Total	150	100.0	100.0	
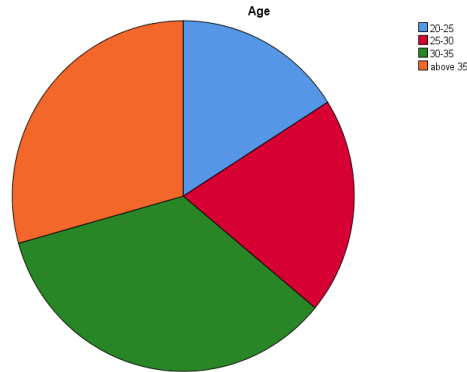
It is determined that the majority of the contributors belonged to the age group 30 to 35. There were 16% of the contributors who belong to the age group 20 to 25. 20% of the participants belong to 25 to 30 while 29% of the participants were above 35.

Nationality

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Pakistani	24	16.0	16.0	16.0
	Chinese	80	53.3	53.3	69.3
	Russian	28	18.7	18.7	88.0
	Others	18	12.0	12.0	100.0
	Total	150	100.0	100.0	
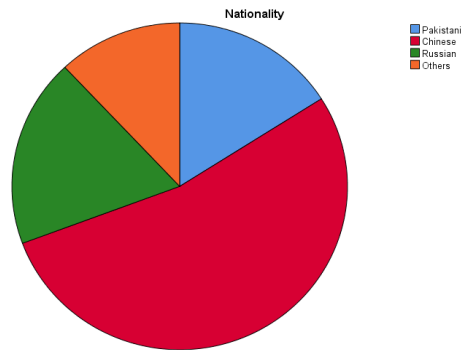
The table and pie chart is indicating that the majority of the participants belong to China. Some belong to Pakistan, and some belong to Russia. However, 18 participants belong to other countries in the world.

Income

|		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	less than 20000$	129	86.0	86.0	86.0
	More than 20000$	21	14.0	14.0	100.0
	Total	150	100.0	100.0	

Income
- less than 20000$
- More than 20000$
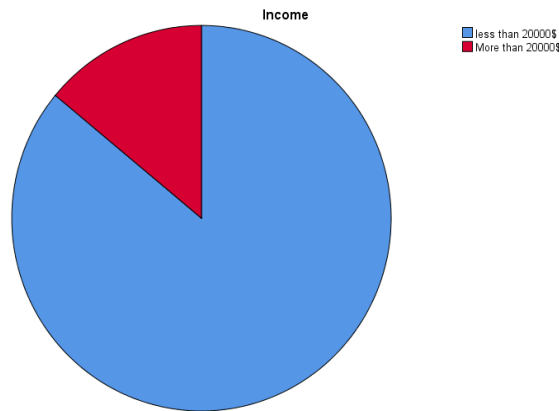
It is indicated that 86% of the participants have come less than $20000, while 14% of income is more than $20,000.

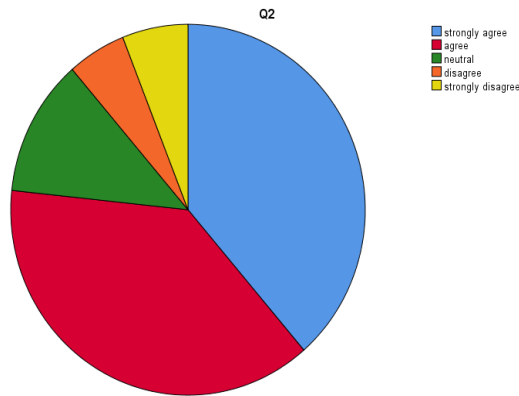1）These days, the field of journalism has entirely transformed.

SECTION B: QUESTIONS

Q1					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	57	38.0	38.0	38.0
	agree	63	42.0	42.0	80.0
	neutral	15	10.0	10.0	90.0
	disagree	7	4.7	4.7	94.7
	strongly disagree	8	5.3	5.3	100.0
	Total	150	100.0	100.0	

Q1
- strongly agree
- agree
- neutral
- disagree
- strongly disagree
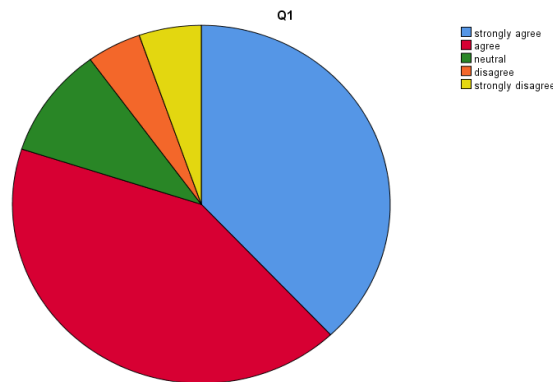
It is identified that the majority of the contributors agreed with the statement. Some participants who shot neutral respond and some disagree with this statement.

2）In the era of big data, journalists need to learn new skills

Q2					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	58	38.7	38.7	38.7
	agree	57	38.0	38.0	76.7
	neutral	18	12.0	12.0	88.7
	disagree	8	5.3	5.3	94.0
	strongly disagree	9	6.0	6.0	100.0
	Total	150	100.0	100.0	

As per the above table and pie chart, there were about 39% of the participants believed that it is essential for journalists to learn new skills. 38% agreed with it, 12% neutral while others disagreed.

3）It is not easy for a journalist to rank their content on the internet because many people are spreading rumours online.

Q3

|		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	57	38.0	38.0	38.0
	agree	60	40.0	40.0	78.0
	neutral	16	10.7	10.7	88.7
	disagree	8	5.3	5.3	94.0
	strongly disagree	9	6.0	6.0	100.0
	Total	150	100.0	100.0	
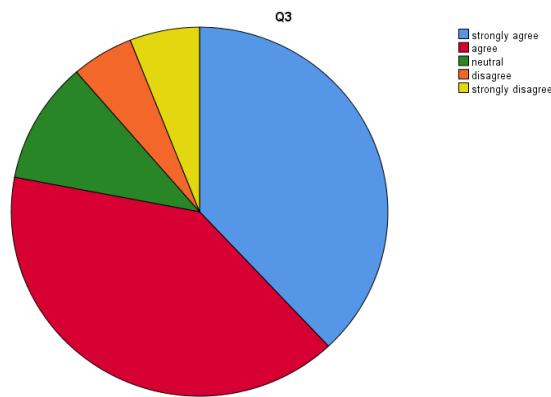
In response to the above statement, the mainstream of the participants decided that it is not an easy task to rank content on the internet. They were few who disagreed, and few showed a neutral response.

4）The big data helps journalists to report content that is trending online.

Q4

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	61	40.7	40.7	40.7
	agree	60	40.0	40.0	80.7
	neutral	15	10.0	10.0	90.7
	disagree	6	4.0	4.0	94.7
	strongly disagree	8	5.3	5.3	100.0
	Total	150	100.0	100.0	
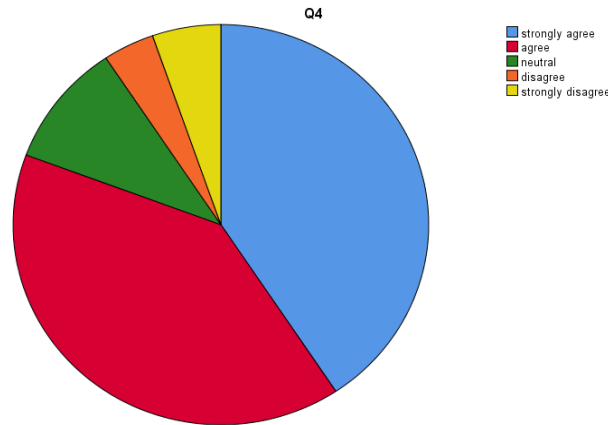
There was a good figure of participants who decided with the above declaration. Few confused about the statement, and some disagreed at all.

5）The big data also help to communicate a message to the target customers in an effective manner.

Q5					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	56	37.3	37.3	37.3
	agree	60	40.0	40.0	77.3
	neutral	21	14.0	14.0	91.3
	disagree	6	4.0	4.0	95.3
	strongly disagree	7	4.7	4.7	100.0
	Total	150	100.0	100.0	
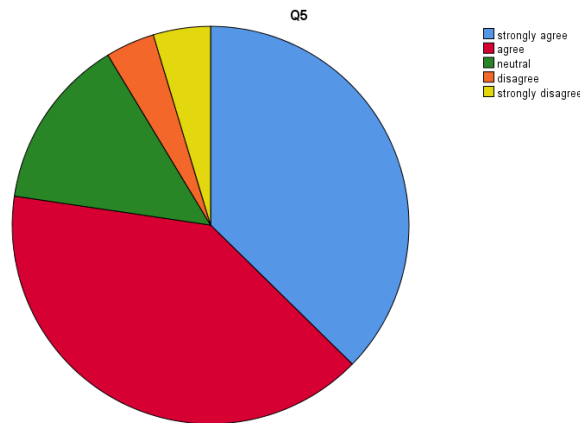
It is identified that there were about 37% of the participants who strongly agreed that big data helps to deliver the message. 40% agreed with it, 14% neutral 4% disagreed, and 5% strongly disagreed.

6）The most prominent benefits of big data are that it helps journalist to create content as per the need and desire of readers.

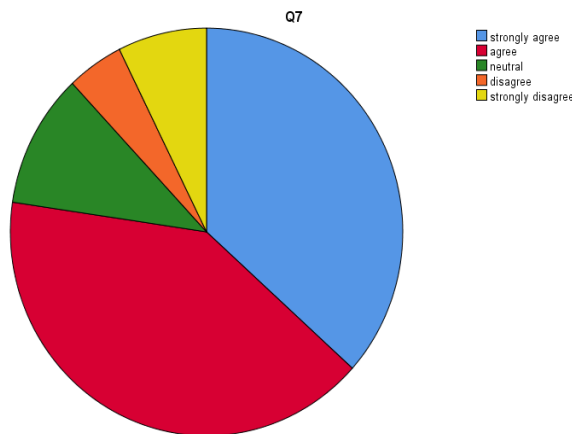| Q6					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	57	38.0	38.0	38.0
	agree	60	40.0	40.0	78.0
	neutral	17	11.3	11.3	89.3
	disagree	8	5.3	5.3	94.7
	strongly disagree	8	5.3	5.3	100.0
	Total	150	100.0	100.0	
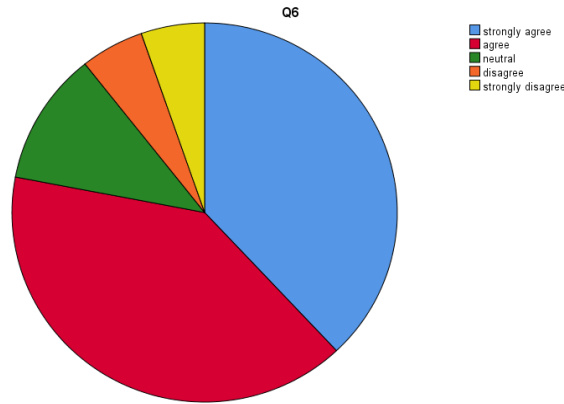
It is indicated that the majority of the participants agreed that big data helps journalists to create good content as per the choice of readers.

7）There are several tools and applications available in the market that facilitate people to create, store and publish content.

Q7

|		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	55	36.7	36.7	36.7
	agree	61	40.7	40.7	77.3
	neutral	16	10.7	10.7	88.0
	disagree	7	4.7	4.7	92.7
	strongly disagree	11	7.3	7.3	100.0
	Total	150	100.0	100.0	

It is determined that the majority of participants have a good idea about the different tools and applications available in the market. They were few who short neutral response, and few disagreed with

the statement.

8）It is essential for journalists to learn special skills and strategies to get long term benefits.

Q8

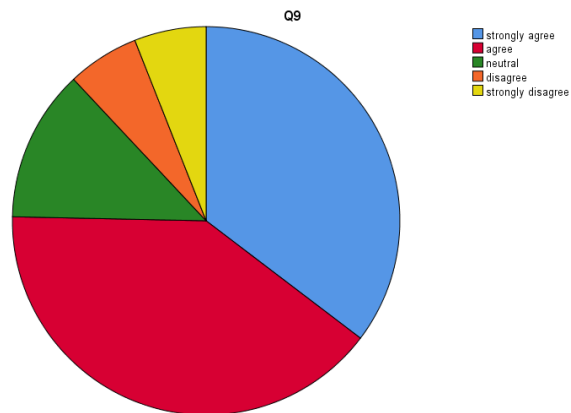|		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	54	36.0	36.0	36.0
	agree	60	40.0	40.0	76.0
	neutral	22	14.7	14.7	90.7
	disagree	6	4.0	4.0	94.7
	strongly disagree	8	5.3	5.3	100.0
	Total	150	100.0	100.0	
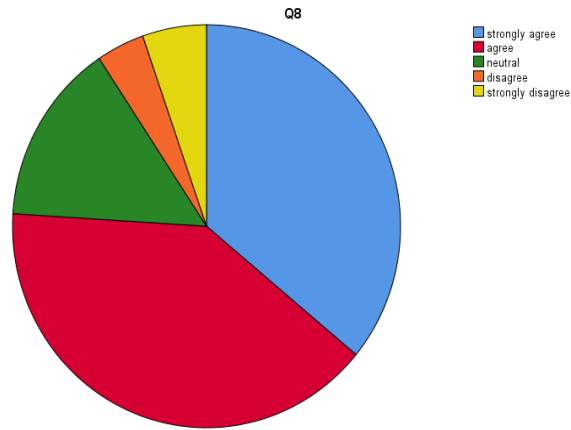
It is illustrated that 36% of the participants strongly agreed that there is grating to learn specialised skills and strategies. There were 40% who agreed with it, 15% neutral, 4% disagreed, and 5%

strongly disagreed.

8）Without the proper knowledge, it is difficult to survive in the modern world for journalists.

Q9					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	53	35.3	35.3	35.3
	agree	60	40.0	40.0	75.3
	neutral	19	12.7	12.7	88.0
	disagree	9	6.0	6.0	94.0
	strongly disagree	9	6.0	6.0	100.0
	Total	150	100.0	100.0	

It is determined that several participants agreed with the statement. Only a few disagreed, and few confused about the announcement.

9）The journalism field highly depends on modern technology.

Q10					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	53	35.3	35.3	35.3
	agree	59	39.3	39.3	74.7
	neutral	20	13.3	13.3	88.0
	disagree	9	6.0	6.0	94.0
	strongly disagree	9	6.0	6.0	100.0
	Total	150	100.0	100.0	

Q10
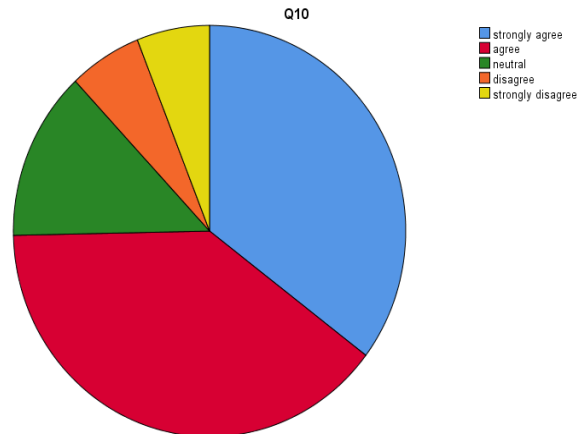
It is found that the journalism field is closely interlinked with Technology. There were 35% of the participants who strongly agree with it, 39% agreed, 13% neutral, 6% strongly disagreed, and 6% disagreed.

4.DISCUSSION

It is found by the above discussion and results of the study that the modern technology has completely transformed the field of journalism and it has become very much essential for journalists to learn current ways and techniques to survive in the market. Big data creates several opportunities for journalists to develop a strong relationship with the target audience and readers. Because several people shared illegal content on social media that also creates a problem for the reliable data produced by journalists. It is found that journalists must have information about modern techniques and Technology so that they can differentiate themselves from others and create trending content that mostly searches by readers. It is also supported by some researchers such as Brastsas & Veglis (2012) confirm that ways of journalism have entirely transformed. Green (2018) argued that journalists must learn modern techniques to meet multiple challenges. Similarly, Veglis et al. (2018) and Ridden & Allan (2017) also supported the above stance.

5.CONCLUSION

In conclusion, big data has become a basic need of every institute that is working to achieve competitive advantages and profit in the long run. The study determined that like other fields of life, Technology has also transformed the ways of journalism. Modern Technology introduces internet and computer devices that help people to store, collect, and published information. The modern technology and invention of advanced tools have significantly impacted the field of journalism. Several journalists are improving the proficient skills and capabilities to survive in the market because ranking the content on online platforms is not an easy task in a rapidly developing and changing world. Information about modern techniques, Strategies, and tools does not only help the journalist to create content that appeals to the readers but also helps to ensure their presence on the web. The journalist must have useful information about modern tools, applications, techniques, and strategies so that they can effectively meet the challenges. In short, tank on social networking sites, journalists must depend on modern technology.

6.RECOMMENDATIONS

The study recommended that everyone must understand the importance of modern technology and techniques. Because the world has changed rapidly and to be successful in this highly competitive world, there is a great need to accept change in Technology and ways of living and operating different things. The people who belong to the field of journalism must understand their responsibilities towards society, and they should prepare themselves to meet the challenges and issues. The journalists must polish their skills and abilities and continuously learned modern tools techniques and strategies to achieve success and other benefits in the market. It is also necessary for journalists to have good knowledge about the use of the internet and different applications that help to enhance the online performance of journalists. Moreover, journalists must have useful information about modern Technology that directly or indirectly influence the field of journalism. More and more, it is also essential to identify the lighting and disliking of target readers

to grab the market in the long run.

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