Data-Driven Narratives and Civic Engagement: Examining the Institutional Barriers to Data Journalism in the Newspaper Industry in Sri Lanka

Gamage K.P.[1], Malinda H.M.D.[2,*]

[1]Sri Pali Campus, University of Colombo, Sri Lanka

[2]Publication Officer, National Library and Documentation Services Board, Sri Lanka

[*]Corresponding author: k.prabhashini@gmail.com

Abstract

The main objective of this research, titled 'Data-Driven Narratives and Civic Engagement: Examining the Institutional Barriers to Data Journalism in Newspaper Industry in Sri Lanka', is to investigate the use of Data Journalism in the Sri Lankan newspaper industry and the institutional, educational and technological factors that influence its implementation. The study was based on a quantitative research methodology. Data were collected from 80 journalists (5 journalists from each newspaper) from 16 newspaper institutions using a formally prepared questionnaire based on a snowball sampling method. The collected Data were analyzed using Descriptive Statistics, Cross-tabulation, Chi-square, ANOVA and Multiple regression using SPSS software. The results revealed that although the majority of the journalists in the sample had an educational background related to Journalism, their educational qualifications were insufficient to implement Data Journalism in practice. In particular, the lack of support from media institutions for training opportunities, the lack of dedicated units in media institutions to implement Data Journalism, and the lack of technical knowledge among journalists were identified as the main obstacles to the development of Data Journalism in newspaper institutions. The results of ANOVA and multiple regression analysis confirmed that there was a statistically significant effect ($p < 0.05$) between the parameters related to organizational structure (especially the presence of Data Journalism units and project involvement). Thus, the findings indicate that institutional backing plays an integral role in the practice of Data Journalism. Moreover, the positive relationship between proficiency in Data analytic tools and utilization of Data visualization techniques shows that the development of technical skills also plays a significant role. In conclusion, the present study shows that Data Journalism in Sri Lanka does not rely only on individual interest and education; it is also affected by other factors including institutions, technical skills, and opportunities for training. Hence, a structured program, technical training, and open Data availability should be created at the institutional level for practicing Data Journalism.

Keywords: Data Journalism, Awareness, Data-Driven Narratives, Journalism, Newspaper

Introduction

With the development of Information and Communication Technology in the modern world, man is suffering from an unlimited desire to know information and access Data. As a result of human's entry into the information world day by day, is also engaged in a great battle to obtain infinite and unlimited information. "For this reason, modern society is called an Information and Data-based society" (Islam, 2018). In the modern world, people have the ability to instantly access all information and Data, from weather forecasts, due to smart devices such as Computers and Mobile phones. Especially with the development of social media, users have been motivated to obtain information quickly as well as to produce information. "Web technology has given the subscriber the opportunity to produce news. The subscriber has also transformed into a reporter and has be-

come a Gatekeeper, Info-monitor and they have become Citizen journalists based on this power of their own free will" (Kumar & Mangaiyarkarasi, 2018).

Journalism can be simply defined as the reporting of an event or series of events that occurred on a single day through newspapers or other media. However, this situation is changing completely today. Due to the development of Mobile Phones, Social Media, and Digitalization, a large amount of Data is being generated daily. "In the modern world, about 2.5 quintillion bytes of Data are created every day. More than 3.7 billion people worldwide use the Internet. On average, 3.5 billion Google searches are performed daily in the modern world. Snapchat users share 527,760 photos per day. Subscribers watch 4,146,600 YouTube videos per day. 456,000 tweets are sent to Twitter. Instagram users post 46,740 photos per minute. 1.5 billion people are active on Facebook per day. 156 million emails are sent per day" (Hermida, 2010). In addition, "about 1.5 billion pieces of information are generated by various research activities around the world. About 140 million new pieces of information are created every day, of which about 2 million pieces of information are used for television and video media. Similarly, a study conducted by Northeastern University in Boston, USA, estimated that the amount of Data in the Digital universe was 4.4 zettabytes by 2013. It was predicted that this would increase to 44 zettabytes by 2020. According to an article published in Forbes magazine in 2015, more Data has been created in the past two years than in the entire history of mankind (Baranetsky, 2018).

This Data is communicated every second through social media, Digital Media, and Mobile Phones, and new information and Data reaches the receiver at a rate that exceeds the capacity of the information reader. Meanwhile, truth, half-truth, fiction, gossip, as well as it is a well-known fact that there is also misinformation and deliberately created fake news. Since the amount of information generated in this way is so large, it is necessary to analyze its existing patterns and new trends. It is in this environment that such intense attention is paid to Data and statistics today. "Twenty years ago, Data was any collection of numbers. That was the only type of Data that journalists dealt with. But now we live in a Digital world. In a world where everything can be described in numbers" (Gray, Bounegru, & Chambers, 2012).

For this reason, "scholars have discussed the close relationship between statistics and mathematics in news reporting for decades" (Nguyen & Lugo-Ocando, 2016). Therefore, to ensure the accuracy of information, Data and Statistics must be presented properly. In addition, the news, observations, and predictions built on the analyzed Data must be provided to readers. This dilemma has led to a situation where traditional newspaper (printed) media has no existence in today's Digital World. The emergence of Digital platforms has significantly changed the traditional patterns of news production, distribution, and consumption, thereby reshaping the role of Journalists and Media institutions. As a result, Traditional Media companies around the world are facing many challenges arising from the radical Digital transformation of the publishing industry. To overcome these challenges, newspaper media owners need to The field had to be expanded. This led to newspapers being forced to bring to the reader profiles that were of interest, interest and interest to the public. In this way, the changing forms of the newspaper have given readers the opportunity to resort to various newspaper models according to their own interests. In this evolving media landscape, the use of new media that combines statistical analysis, computational tools and storytelling techniques to produce evidence-based news narratives, commonly known as Data-Driven Journalism (DDJ), has gained prominence. As a result, many modern newspapers have been motivated to interpret events based on Data and Information. Irene Jay Liu, news editor of Thomson Reuters Hong Kong division, noted that "Data Journalism is a solution to the decline in newspaper circulation caused by media convergence" (Yang & Du, 2016).

"Digital Technology, 'Big Data' and 'Open Data' have transformed many aspects of our lives. The emergence of Data-Driven Journalism has led to new forms of Journalism, including newsrooms and newsrooms" (Weber & Kennedy, 2018). One of these forms is Data Journalism. Data Journalism is conceptualized as Journalism that relies on the collection, analysis, interpretation, and Vi-

sualization of Data to uncover hidden patterns in Data. There are various terms to describe Data Journalism. For example, Data Journalism, Data-Driven Journalism, Data Base Journalism, Computational Journalism, or Data Visualization (Kalatzi, Bratsas, & Vegli, 2018).

Since social science methods and computational tools are used to analyze Databases in Journalism, American graphic designer and emeritus professor Philip Meyer called it "Precision Journalism (PJ)" (Martin & Rosa, 2018). Unlike conventional forms of Journalism which depend mainly on news articles, interviews, and observations, Data Journalism enhances the quality of news reporting by adding depth and precision to news coverage. In the world today, prominent media outlets have been applying techniques of Data Journalism to generate investigative pieces, visualization graphics, and explanations to help citizens comprehend social, economic, and political issues.

There are many different definitions of this term. The word 'Data' in Latin means 'Given' in the sense of a fact. It is the idea of something that is Recorded, Analyzed and Recognized. Anything that can be counted can be called Data. Similarly, anything that a computer processes is Data. In a general sense, 'Data' is any collection of numbers collected in a spreadsheet (Islam, 2018). According to Data Journalism, an article written by Mohammed Haddad (2019), Data Journalism is a genre of Journalism in which journalists seek, analyze, and interpret Data in order to construct a story through the media (Haddad, 2019).

The function of Journalism in democracy is not confined to informing citizens but goes much further. "As a logical process, Data Journalism has the potential to uncover stories hidden in Data and Data Visualization and Visual Representation enable users to understand this more clearly" (Weber & Kennedy, 2018). As a result, Data Journalism is considered a critical component of modern media ecosystems.

Data Journalism is now even influencing professional practices in newsrooms and producing new models within this profession. "The function of Traditional Journalism and the media is more than just informing citizens. They play a more important role in democratic societies by acting as watchdogs and monitoring the activities of state institutions and processes" (Porto, 2015). In this way, Data Journalism can be a way to re-establish and strengthen the value of Journalism, as well as ensure its sustainability.

However, the implementation of Data Journalism across different geographical and institutional contexts is not uniform. In developing countries in the 3rd World, such as Sri Lanka, the newspaper industry is influenced by traditional newspaper practices, resource constraints and organizational constraints. This raises the crucial question of whether Data Journalism, as a new media phenomenon, is being effectively used in the Sri Lankan media environment. Therefore, this research aims to understand the extent to which local journalists have adapted to emerging Digital practices in the use of Data-driven Journalism as a new media phenomenon in the Sri Lankan press and to understand the factors influencing such use.

The aim of this study is to explore Data Journalism as a new trend in Sri Lankan Journalism and to investigate the awareness among media journalists, the attitude of journalists towards Digital technologies and innovations in the newsroom when dealing with Data. The main hypothesis of this research is that there is a significant relationship between the use of Data Journalism in Sri Lankan news media and the level of education of journalists.

While Data Journalism is gaining increased international attention and popularity in the world of Journalism, there is little empirical evidence concerning its practice in the Sri Lankan press industry. Most existing literature in the field of Journalism in Sri Lanka revolves around conventional reporting methods, media ethics, and political communication, while little emphasis is placed on new technological trends like Data Journalism. Hence, this study seeks to contribute to the body of knowledge by conducting an extensive analysis of the prevalence, determinants, and barriers of Data Journalism in Sri Lanka.

Methodology

This research, which aims to examine the institutional barriers to the use of Data Journalism in the Sri Lankan newspaper industry, is mainly

based on a quantitative research design. In it, Data were collected using a structured questionnaire prepared in three languages (Sinhala, Tamil and English) to examine the awareness of journalists regarding Data Journalism. The questionnaire was administered to 80 newspaper journalists in Sri Lanka (5 journalists from Maubima, Lankadeepa, Ada, Dinamina, Divaina, Silumina, Aruna, The Morning, Daily Mirror, Daily News, Sunday Times, Ceylon Today, The Island, Sunday Observer, Thinakaran). Snowball sampling method was used to include members in the sample, in which the questionnaire was first sent to the editorial staff journalists with the permission of the editor of the newspaper organization. The Data collected was analyzed using SPSS software.

Data Analysis

This chapter analyses the Data found on the use of Data Journalism in the Sri Lankan newspaper industry. The primary Data collected has been systematically organized and presented in detail using tables, percentages and numerical analysis methods to examine the relationship between the main objectives of the research and the hypotheses. The Data collected using a questionnaire has been divided into different sections and analyzed according to the research objectives. They mainly cover areas such as demographic information, knowledge and exposure level of Data Journalism, education level and its impact, training and institutional support, and attitudes towards Digital technology.

Here, the Data analysis has been done based on descriptive statistics and the relationships between variables have been examined using cross-tabulation and inferential analysis (chi-square test) where necessary. Specifically, numerical testing methods were used to test the main hypothesis of the research, which was that "there is a significant relationship between journalists' educational level and the use of Data Journalism."

Demographic Profile of Respondents

In this section, the demographic characteristics of the respondents who participated in the research are analyzed and presented.

The factors being studied here include age, education, gender, and the language of newspapers. Upon further analysis of the age distribution among the respondents, it becomes apparent that the age range of 31 to 40 has the largest percentage (37.5%). The next is the age group between 51–60 years and comprises 33.8% (n=27) and then age group of 41–50 years is comprised of 16.3% (n=13). Finally, the age group of 20–30 years comprise 12.5% (n=10) which implies that very few journalists who have started their career recently participate in the study. Therefore, most of the survey participants comprise middle-aged and elderly people. It provides an important basis for analyzing their understanding and use of new media trends such as Data Journalism.

In terms of education level, the highest number of respondents belong to the Graduate level (47.5%), followed by Postgraduate level at 17.5% (n=14). G.C.E. A/L level is 18.8% (n=15), while the percentages at Undergraduate (8.8%) and Diploma (7.5%) levels are lower. This Data shows that the majority of the participants in the research are professionals with higher education. It provides a more suitable basis for testing the hypothesis of this study, the relationship between education level and the use of Data Journalism.

Among the participants in the research, 62.5% (n=50) are women and 37.5% (n=30) are men. This shows a strong representation of women. According to this result, there is a significant increase in the participation of women in the Journalism sector in Sri Lanka. It also suggests that women may be actively involved in new fields such as Digital Journalism and Data Journalism.

In terms of newspaper language, Sinhala newspapers account for the highest percentage at 50.0% (n=40), followed closely by English newspapers at 43.8% (n=35). Tamil newspapers have a low representation at 6.3% (n=5).

In this study, ANOVA (Analysis of Variance) analysis has been used to test the overall significance of the multiple linear regression model. According to the table, the regression Sum of squares = 73.520 and the residual sum of squares = 54.258 are found. This shows that the model explains a significant part of the variance. Accordingly, the F value can be identified as 5.059 and the signif-

Table 1: Demographic Profile of Respondents: Age and Education

Age	Frequency	Percentage (%)
20–30	10	12.5
31–40	30	37.5
41–50	13	16.3
51–60	27	33.8
Total	80	100.0

Higher Education Level	Frequency	Percentage (%)
G.C.E. A/L	15	18.8
Diploma Level	6	7.5
Undergraduate	7	8.8
Graduate	38	47.5
Postgraduate	14	17.5
Total	80	100.0

Source: Survey Data, 2025

Table 2: Demographic Profile of Respondents: Gender and Newspaper Language

Gender	Frequency	Percentage (%)
Male	30	37.5
Female	50	62.5
Total	80	100.0

Language in which the newspaper is published	Frequency	Percentage (%)
Sinhala newspaper	40	50.0
Tamil newspaper	5	6.3
English newspaper	35	43.8
Total	80	100.0

Source: Survey Data, 2025

Table 3: ANOVA Results

Model	Source	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	73.520	15	4.901	5.059	.000
	Residual	54.258	56	.969		
	Total	127.778	71			

a. Dependent Variable: Level of Educations

b. Predictors: (Constant), Journalism-related Education, Employer Training Support, Training Interest, Software Familiarity, Data Journalism Unit, Data Visualization Unit, Project Involvement, Data Access Difficulty, Trust in Online Data, Use of Visualization Tools, Perceived Value of Digital Journalism, Attitude to New Technology, Job Security Concern, Institutional Resistance

icance value associated with it can be identified as .000 ($p < 0.001$). According to this result, it is confirmed that the model is statistically highly significant. That is, this analysis shows that when the independent variables (predictors) are taken together, they make a significant contribution to explaining the level of education (dependent variable) as a whole. These results indicate that Data Journalism, training, institutional support, and technical knowledge play an important role in explaining the educational level of journalists when combined. The ANOVA results also confirm that the regression model is fully fit.

In this study, multiple linear regression analysis was conducted to examine the impact of institutional, training and technical factors on the Education Level (dependent variable) of journalists working in the Sri Lankan newspaper industry. According to the results, only a few of the variables showed statistically significant ($p < 0.05$) relationships. Accordingly, the presence of a Data Journalism Unit in the newspaper ($B = 1.216$,

Table 4: Coefficients of the Regression Model

Variables	**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**
	B	**Std. Error**	**Beta**		
(Constant)	3.829	1.766		2.169	.034
Journalism-related Education	-.772	.338	-.263	-2.284	.026
Journalism-related Education	-.411	.214	-.257	-1.922	.060
Employer Training Support	.633	.330	.230	1.917	.060
Training Interest	.428	.347	.124	1.233	.223
Software Familiarity	-.112	.197	-.067	-.570	.571
Data Journalism Unit	1.216	.383	.380	3.178	.002
Data Visualization Unit	-.648	.352	-.214	-1.842	.071
Project Involvement	-.875	.334	-.299	-2.620	.011
Data Access Difficulty	.191	.133	.144	1.442	.155
Trust in Online Data	.168	.255	.075	.657	.514
Use of Visualization Tools	.320	.176	.211	1.818	.074
Perceived Value of Digital Journalism	.283	.192	.173	1.477	.145
Attitude to New Technology	-.063	.166	-.046	-.381	.704
Job Security Concern	-.171	.188	-.105	-.914	.365
Institutional Resistance	-.107	.175	-.071	-.611	.544

a. Dependent Variable: Level of Educations

p = .002) showed a strong and highly significant positive relationship with education level. This shows that institutional structure and organizational support play a key role in career

development and knowledge enhancement. Also, Project Involvement (B = -0.875, p = .011) and Journalism-related Education (B = -0.772, p = .026) are also statistically significant, indicating that professional involvement and educational specialization are associated with educational level (the negative sign here should be explained by variable coding).

Furthermore, variables such as Formal Training, Employer Training Support, Data Visualization Unit, and Use of Visualization Tools ($p < 0.10$) show limited significance, suggesting that training, technology use, and institutional support may contribute to professional development. Also, other variables such as Training Interest, Software Familiarity, Data Access Difficulty, Trust in Online Data, Perceived Value of Digital Journalism, Attitude to New Technology, Job Security Concern, and Institutional Resistance are not statistically significant ($p > 0.05$), indicating that they do not have a direct effect on educational level. Overall, these results confirm that the educational level of journalists is not determined by a single factor, but is influenced by a multidimensional set of factors such as organizational structure, professional participation, and training opportunities. In particular, units dedicated to Data Journalism and project involvement can be identified as important determinants in the Sri Lankan newspaper industry.

In accordance with the above results, it can be observed that 68.8% (n=55) of the total number of participants, which were 80, expressed that their highest education qualification was in the field of Journalism, whereas only 31.3% (n=25) mentioned that their highest education qualification was not in the field of Journalism. In this regard, it can be confirmed that the highest proportion of the respondents have a background in Journalism.

From the above Data, it can be seen that out of 80 individuals questioned on the issue, 78 gave a reply, whereas the remaining 2 people (2.5%) were categorized as non-responders (none). Of the 78 individuals who gave a response, 36.3% (n=29) stated that their organization provided training/education programs. On the other hand, 61.3% (n=49) indicated that they do not offer such programs. Thus, it can be said that most employees do not have enough opportunities for training and education through their organizations.

(Survey Data, 2025)

According to this Data analysis, 33.8% (n=53) use government-issued reports as the main Data source, indicating that it is reporting based on official Data. Investigative Data is used by 28.0% (n=44), indicating that it is investigative Journalism. In addition, 19.7% (n=31) use informal sources, indicating that informal networks and personal contacts are also used in news production. Furthermore, 18.5% (n=29) obtain their Data under the Right to Information (RTI) Act, indicating that there is some level of use of the RTI mechanism. Overall, it shows that the majority of journalists use official Data issued by the government and not investigative or discovery Data.

Source: Survey Data, 2025

In this part of the Data analysis related to the research, the relationship between receiving formal training in Data Journalism or Data analysis and participating in Data Journalism projects at the newspaper where one currently works was examined. According to the Data shown in the table below, 38.8% of journalists who have received formal training have been involved in Data Journalism projects, while 28.7% have not been involved in such projects. Similarly, among those who have not received training, 30.0% have not been involved in projects, while the percentage of those who have been involved is very low at 3.8%. Differences in participation in projects are also seen among those who answered "Somewhat". According to these results, it is clear that there is a relationship between training in Data Journalism and project involvement.

a. 2 cells (25.0%) have expected count less than 5. The minimum expected count is .29.

Source: Survey Data 2025

Multiple regression analysis indicated a strong predictive association between institutional variables and journalists' education-related engagement with Data Journalism (R=.759, R2=.575, F (15, 56) = 5.059, $p < .001$). Variables significantly predicting Data Journalism uptake were having a Data Journalism department (β=.380, $p < .002$) and engaging with Data Journalism projects (β=.299, $p < .011$). The difference be-

Table 5: Relevance of Highest Educational Qualification to Journalism

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	55	68.8	68.8	68.8
	NO	25	31.3	31.3	100.0
	Total	80	100.0	100.0	

Table 6: Availability of Employer-Sponsored Training Opportunities

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	29	36.3	37.2	37.2
	NO	49	61.3	62.8	100.0
	Total	78	97.5	100.0	
Missing	System	2	2.5		
Total		80	100.0		

Table 7: Source Of Data

Source Of Data	N	Percent
Reports issued by the government	53	33.8%
Right to Information Act	29	18.5%
Investigative Data	44	28.0%
informal sources	31	19.7%
Total	157	100.0%

Table 8: Receive training in Data Journalism and undertake projects related to Data Journalism

Have you received formal training in Data Journalism or Data analysis?		Have you been involved in any Data Journalism projects at your current newspaper		Total
		Yes	NO	
Yes	Count	8_a	23_a	31
	Expected Count	8.9	22.1	31.0
	% of Total	10.0%	28.7%	38.8%
NO	Count	3_a	24_b	27
	Expected Count	7.8	19.2	27.0
	% of Total	3.8%	30.0%	33.8%
Somewhat	Count	11_a	10_b	21
	Expected Count	6.0	15.0	21.0
	% of Total	13.8%	12.5%	26.3%
Not at all	Count	1_a	0_a	1
	Expected Count	0.3	0.7	1.0
	% of Total	1.3%	0.0%	1.3%
Total	Count	23	57	80
	Expected Count	23.0	57.0	80.0
	% of Total	28.7%	71.3%	100.0%

tween education levels and project participation was further verified to be statistically significant by a paired-sample t-test (t=15.123, $p < .001$), supporting the proposed hypothesis. Using correlation analysis, there existed a moderate relationship between attitudes toward Digital Journalism

Table 9: Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	12.435[a]	3	.006
Likelihood Ratio	12.679	3	.005
Linear-by-Linear Association	4.654	1	.031
N of Valid Cases	80		

and adopting modern technology in the newsroom (r=.526, p <.01). Conversely, a weak positive association existed between job-related concerns and editorial resistance (r= .234, p <.05).

Education Level vs Data Journalism Adoption

The purpose of this analysis is to examine the relationship between journalists' use of Data visualization tools and their familiarity with Data analysis software.

According to the table above, 28.9% of journalists (40.8%) who use Data visualization tools have a clear knowledge (Yes) of Data analysis software. This is higher than the expected count (13.9), and provides a clear indication that there is a positive relationship between software familiarity and tool usage. Also, among the group that uses tools, there are limited "No" (5.3%) and "Somewhat" (6.6%) responses, which confirms that having software knowledge is related to tool usage. On the other hand, among the group that does not use Data visualization tools (30.3%), there is a higher percentage of software familiarity "No" (15.8%). This indicates that lack of software knowledge may be a reason for the decrease in tool usage. Among the group that uses tools "Somewhat" (26.3%), the "Yes", "No" and "Somewhat" responses are equally spread without much difference in software familiarity. This indicates a relationship between partial knowledge and limited usage. The number of people who do not use tools "not at all" is very low (2.6%), and among them, software familiarity also appears to be low. According to these results, it is clear that knowledge of Data analysis software is a fundamental factor for the use of Data visualization tools. As software familiarity increases, the use of tools also tends to increase. This confirms the importance of Digital skills and technical competence for newsroom innovation.

Employer Support vs Willingness to Learn

Source: Survey Data 2025

Discussion

This section mainly discusses the findings of Data analysis. Journalists have increased their use of technology to respond to the pressing issues facing the news media in the modern era. To keep up with the changes in technology and to bring new value to Journalism, many newsrooms have started replacing Data Journalism. Many news organizations are trying to use Data to verify misinformation and build trust. Therefore, in the last 5 years, it is seen that not only governments but also various institutions and organizations have paid more attention to Data.

With Digitalization, they have taken steps to send all the relevant Data to the internet. However, the problem here is that the relevant Data is not published quickly by those companies or institutions. Although the Right to Information Act is in force in the world, it is difficult to obtain relevant Data from those institutions. For this reason, journalists who rely on Data sources must overcome several obstacles when developing their Data-based narratives. This study, entitled "Data-Driven Narratives and Civic Engagement: An Investigation into Institutional Obstacles for Data Journalism in Newspaper Industry in Sri Lanka," mainly focused on the obstacles faced by Data Journalism in media organizations.

Table 10: Education Level vs Data Journalism Adoption

Data visualization tools use in Newspaper		**Awareness of Data analysis software usage**			**Total**
		Yes	**NO**	**Somewhat**	
Yes	Count	22_a	4_b	5_b	31
	Expected Count	13.9	10.2	6.9	31.0
	% of Total	28.9%	5.3%	6.6%	40.8%
NO	Count	6_a	12_b	$5_{a,b}$	23
	Expected Count	10.3	7.6	5.1	23.0
	% of Total	7.9%	15.8%	6.6%	30.3%
Somewhat	Count	6_a	7_a	7_a	20
	Expected Count	8.9	6.6	4.5	20.0
	% of Total	7.9%	9.2%	9.2%	26.3%
Not at all	Count	0_a	2_a	0_a	2
	Expected Count	.9	.7	.4	2.0
	% of Total	0.0%	2.6%	0.0%	2.6%
Total	Count	34	25	17	76
	Expected Count	34.0	25.0	17.0	76.0
	% of Total	44.7%	32.9%	22.4%	100.0%

Table 11: Employer Support vs Willingness to Learn

Employer offering training or further education opportunities		**Interest in participating in training sessions, workshops, or educational opportunities**		**Total**
		Yes	**NO**	
Yes	Count	26_a	3_a	29
	Expected Count	24.1	4.9	29.0
	% of Total	33.8%	3.9%	37.7%
NO	Count	38_a	10_a	48
	Expected Count	39.9	8.1	48.0
	% of Total	49.4%	13.0%	62.3%
Total	Count	64	13	77
	Expected Count	64.0	13.0	77.0
	% of Total	83.1%	16.9%	100.0%

Lack of knowledge about Data Journalism among journalists

A majority of journalists in Sri Lanka as well as in the Asian region do not have a proper understanding of this new concept. The reason for this is the problems in media education in the region. In Sri Lanka too, journalists who do not have high educational qualifications in Journalism work in newspaper institutions. According to the results of this research, the majority of the participating journalists (68.8%) have an educational

background related to Journalism, but a large number do not have such knowledge. According to the regression analysis results, the parameters "Employer Training Support" and "Training Interest" indicate significance ($p < 0.10$). Therefore, awareness of journalists regarding such new technological environments should be increased.

Institutional Training Support and Professional Development

Media organization owners and administrators should provide training opportunities and further education opportunities on new technologies and new media methods targeting journalists. However, the research Data revealed that such opportunities are limited (only 37.2%). This is a major obstacle to the development of journalists' skills.

Pattern of Data Source Use

Although Data collection can build new stories, the lack of a direct Data source is often a major challenge facing journalists today. Since much Data on sensitive topics is hidden and some Data is incomplete and uncertain, there are major problems in managing accurate Data. Therefore, the majority of journalists use government records (33.8%) as Data sources to the greatest extent, followed by investigative Data (28.0%) and informal sources (19.7%) to some extent. The use of Data under the RTI Act (18.5%) is still limited, which shows a low level of use of open Data. Therefore, journalists need to further expand their access to Data.

Use of technical knowledge and tools

The large and chaotic nature of the Data sets being searched makes it difficult to understand. Therefore, journalists need to find out which Data is suitable for their purpose from a large Data set. For this, Data analysis should be done, but without proper knowledge, accurate results cannot be achieved. Data journalists should be able to handle Data analytics software well. However, the inability to analyze Data well is a major problem faced by local journalists. The development of these technical skills is a strengthening of the more practical application of Data Journalism.

Challenges to skill development

A Data-driven journalist should have sound knowledge of Data collection, analysis, validation, visualization and story building. As mentioned earlier, journalists should have knowledge of graphics software, Data analysis software, etc. Simply put, a Data-driven journalist should be a multi-tasker and multi-talented person. For this, further educational opportunities should be provided to journalists. In general, it can be observed that the practice of Data Journalism in Sri Lanka relies more on organizational assistance and technical proficiency than individual interests. It is necessary to enhance structured support and training within the media organizations.

Conclusion

The results show that Data Journalism in Sri Lankan newspaper media is at a very nascent stage in terms of institutionalization and professional levels of interest and participation. Despite having high levels of professional qualifications, direct application of Data Journalism without adequate institutional setup and skills development is not guaranteed. The high levels of association between exposure to training, awareness of the application, and project levels highlight the need for development-oriented activities.

In addition, the lack of specifically organized units in most journalistic institutions for Data Journalism makes it difficult to employ systematic journalistic practices in the use of Data in the field of technology. On the issue of attitude towards technological integration, it could be concluded that journalists tend to feel positive towards the use of technology, though this could be hampered in the institution he/she works for. In conclusion, this research finds that Data Journalism adoption in Sri Lanka is more due to structural factors in newspapers than with journalists' enthusiasm or educational background.

Recommendations

On the basis of the results of this study, a number of suggestions have been made to improve Data Journalism in Sri Lanka. Media houses are advised to set up Data Journalism and visualization departments to promote Data Journalism on a day-to-day basis. Apart from this, training sessions on Data analysis software and case Database management for investigation reporting must be conducted for the requisite skills and knowledge in this regard among the media professionals. The Journalism course must be updated so that Data Journalism can be taken as a part of the subjects to train the students practically in collaboration with media houses. Moreover, transparency on the part of the concerned authorities in providing Data to the public can be ensured in order to facilitate the Journalism professionals in their search. Use of licensed software and analysis tools in media houses will also play an important role in this regard. By following all these steps, Data Journalism will be improved significantly and will play an effective role in enriching mass media Journalism in Sri Lanka.

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