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Inter-Media Agenda Setting of Twitter and Traditional Media on Pakistan's Budget 2019

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ABSTRACT

The study aimed to analyze the Intermedia Agenda setting of Twitter and Traditional Media (TV Channels) on Pakistan's Budget 2019 focusing on economic issues. Pakistan's media played vital role to influence the opinion and to push twitter trends. This study explored the economic issues that are transferred from traditional media to twitter or vice versa. Fifty-seven days selected that is one month prior to budget presented in 2019 and two weeks after the budget. After salience and ranking of issue, Spearman correlation Cross-lagged correlation and causal direction were analyzed by Rozelle-Campbell baseline. Findings reveled that, there is significant correlation between Twitter and Traditional Media's (TV News channel) agendas on Pakistan's Budget 2019 on Economic issues, with time lag of one day. And the one-day time lag exists between transferring of agendas from Twitter to Traditional Media (TV News channels) and vice versa, regarding Pakistan's Budget 2019 on Economic issues, is significant.

Introduction

The research is aimed to analyze the Intermedia Agenda setting of Twitter and Traditional Media (TV Channels) on Pakistan's Budget 2019 focusing on Economic Issue. Literature on intermedia agenda setting has explored that economics issues are considered to be very delicate and decision related. This issue is considered to be a part and parcel of state institutions. Media is not a part of decision making process. Therefore, studies revealed that economic decisions are state oriented not media oriented. However, twitter is a public platform. Where public speak about their problems and issues related to economy. The reviewed literature revealed that trends at twitter and transferring to and from traditional media in Pakistan's context

Economic issues needed to be explored. Therefore, this study investigated the Twitter top trends and TV News channel's salience of the Economic issues of Pakistan specifically in time frame of one-month pre-budget 2019 and two weeks after the budget presented. Accordingly, time lag in transfer of agenda from Twitter to TV News channels and vice versa at two point in times, is another dimension requiring scientific enquiry. Present study is designed to answer these problems using advance statistical tools like cross-lagged

correlation with Rozelle Campbell baseline. Economy of a country is interlinked with production, distribution, exchange, trade and consumption of goods and services by various stakeholders (James, *et al*, 2015, p.53).

Twitter was launched in 2006 and today, it is the 8th most famous social media website in the world as the quickest breaking news disseminator of traffic of 100 million active users sprouting 500 million tweets per day as compared to traditional media (Forsey, 2019). GEO belongs to Jang Group of Newspapers, established in 2002. The main stream media channel is Geo News (Geo News, 2019). ARY News, Pakistan's news channel launched on 26th September, 2005. It has direct competition with Geo News. ARY News was known as ARY One World and rebranded in 2009 as ARY News (ARY News, n.d.).

Literature Review

In 1980s, the researches on Agenda setting entered into a new phase of investigating the agenda of different types of media. Previously, researchers mostly explored about who is setting the public agenda and they examined the underlying conditions. The focus then shifted to the question that who is setting the media's agenda (McCombs & Shaw, 1993). The researchers found the relation between audience and media on various issues. In the mixed method study of agenda setting between media and audience, the relation on foreign policy related issues are supported (Qayyoum, 2021). Along with this, researchers highlighted the significance of the Intermedia agenda setting i.e., one media form to another instead of audience. Soroka (2014a) argued in mix method study of social media and interviews on economic indicators that the difference between coverage of economy by media and real economic conditions of a country shows that the content on media is a socially created product. Golan, (2006) compared news media with alternative media to concluded that in intermedia agenda setting one in global news coverage of TV Channels' study found that the news media agenda influences the agenda of another news media. Moreover, the longitudinal study of intermedia agenda revealed that it is a dynamic process whereby one media influences the agenda of the other media. The fast-paced nature of current news business involving the running of news channels round the clock and intense competition contributes towards the interdependence and imitation among media (Vliegenthart & Walgrave, 2008). The alternative media content research found that the task of a journalist to present and evaluate new issues in every single day in a time constraint (Mathes & Pfetsch, 1991). As Protess *et al.* (1985) found out that leading newspapers are influential on news agenda of regional papers and television programs. Reese (2007) in his study of mapping the blogosphere content analysis found source of information for nearly half of the news in blogs, is the dominant. Wallsten (2017) argued that political bloggers not provide real news. Bloggers depends on news reports from established media outlets. Nevertheless, study of multimedia and mainstream stream newspapers content Vonbun *et al.* (2016) in the intermedia agenda setting between TV and online media found that both are fast paced and set agenda as compared to newspaper. In normalizing twitter study, Lasorsa *et al.* (2012) described two possible analyses in the domain of agenda setting that is the extent whereby political agenda influences the media agenda along with role-played by new media in journalism practices. Cheng (2016) opined important feature of social media is the availability of information instantaneously to journalists in the form of blog posts, tweets and other online content types. Since, such a creation and availability of information is intentional. Therefore, it can influence the agenda building. Messner and Distaso (2008) highlighted the time period selected from 2000 -2005 of main stream media and blogs and revealed that both sources used each other as their source regarding entertainment, politics, and business sports. 120 weblogs analysis revealed that they relied on old media as their source i.e., 70% of political posts were sourced from mainstream media. The results indicated that traditional news media influence the blog's agenda and blogs cited traditional news media as their news source (Messner, et al. 2011). Arab spring was a revolutionary movement against certain regimes in Middle East which began as social media movement and was later picked up by global print media as well as electronic media (Meraz & Papacharissi, 2013). This highlighted the reliance placed by traditional media on social media to set news agenda. Paulussen and Harder (2014) explored the usage

of social media (Facebook and Twitter) in newspaper articles of the Flemish newspapers: De Standard, and De Morgan found out that on average five articles on content analysis mentioned three social media platforms. The study showed that social media was taken as a source and lead over agenda setting by traditional media. Even the newsrooms are adopting Twitter for quick distribution of news. Journalists are using Twitter as a tool of reporting and to track news (Farhi, 2020). Cross lagged panel analysis is utilized for determining the variable which serves as the cause and the variable which serves as the effect (Singh & Tyagi, 2014). This technique was suggested by Campbell and Stanley (1963). The technique comprised two constructs, X and Y, which are measured at two different points in time. It is used for determining causal relationship or directional influence between uncontrollable variables (Kenny, 1975). The Rozelle-Campbell baseline is utilized for estimating the significance of results obtained from Cross-lagged Correlation (Rozelle-Campbell, 1969). This method observed the agenda setting relationship between different mediums once the baseline is established. Cross lagged correlation are analyzed with respect to baseline calculation (Sikanku, 2011a). It is widely used in agenda setting researches for exploring causal relationship between X and Y (Dunn, 2009; Sweetser, *et al.* 2008). Bakan and Melek (2016) conducted the research on online international newspapers and Twitter during 2013 papal elections resulted strong relation between Twitter and newspaper existed with former influencing the latter from agenda setting point of view. Conway et al. (2015) examined the Intermedia agenda setting with respect to Twitter and top newspapers during the 2012 presidential campaign. The positive correlation between the Twitter trends and the issues highlighted in the newspapers was found.

Research Questions

The research questions of the study are;

RQ1: Whether and to what extent correlation exist between Twitter and Traditional Media's agendas on Pakistan's Budget 2019 with time lag of one day.

RQ2: To what extent the direction of causality exist with respect to Intermedia agenda setting between Twitter and Traditional Media on Pakistan's Budget 2019.

RQ3: Whether and to what extent time lag difference exists in transferring of agendas from Twitter to Traditional Media and vice versa, regarding Pakistan's Budget 2019.

Hypotheses

The given below hypotheses are;

H1: It is more likely that there is a significant correlation between Twitter and Traditional media's agendas on Pakistan's Budget 2019 (Economic Issues) with a lag of one day.

H2: The direction of causality of agendas shifts from Twitter to Traditional Media on Pakistan's Budget 2019 9 (Econimc Issues).

H3: It is more likely that the one day time lag exists between transferring of agendas from Twitter to Traditional Media and vice versa, regarding Pakistan's Budget 2019 (Economic Issues).

Methodology

Quantitative content analysis was adopted to investigate the content of the traditional media transferred to twitter or vice versa. The relationship among two media entities and the causal direction between Twitter trends and the Traditional media (TV News channels) on Pakistan's Budget 2019 (Economic Issues of Pakistan) were explored. Issue categories were developed based on the economic indicators. After salience and ranking of issue, Spearman correlation was used to analyze the relationship between the two variables i.e. Twitter and Traditional Media (TV News channels). Cross-lagged correlation and causal direction were analyzed by Rozelle-Campbell baseline.

Sampling and Time Frame

The study investigated the content of Twitter trends and traditional media headlines for 57 days' time period (one month prior the Budget 2019 and two weeks after the Budget 2019) comprised of the twitter trends and the News headlines of the two major News channels, Geo News and ARY news were collected from May 1st, through June 26th, 2019. This period was selected because it is close in time to the Federal Budget of Pakistan 2019, on 11th Jun 2019.

Time Lag

In this study top trending tweets monitored after every three hours from the trending map along with prime time news headlines. The news reports also monitored every day for the period of 8 weeks (1 period = 1 week) from 1st May 2019 till 26th of June 2019 i.e. six weeks before the budget of Pakistan to be on air on 11th June 2019 and two weeks after the budget 2019. There is a one day time lag between each period. Data for the current study is collected through Twitter and official websites of private News Channels.

Content Analysis

Content analysis (with respect to Twitter trends and selected two News Channels) involved data categorization to identify themes and categorize codes emanating from the data. In line with the research questions, the issue agendas for both, the Twitter and the two News channels, was analyzed. For the purpose of determining the Economic issue of Budget 2019's agenda of Twitter trends and Traditional Media (TV News channels), the content analysis was performed. The data so obtained was coded into different categories. The issues of each medium were counted and compared with that of other's.

Budget (2019) Economic Issues on Twitter and Traditional Media (TV Channels)

Economic indicators according to the 'Economic survey of Pakistan' are: Agriculture sector, Industry (growth), Investment, Manufacturing and Mining, Money (currency), Fiscal development, Market and Corporate sector, Inflation, Trade, Debt, Education, Health and Nutrition (Funds and Projects), Employment, Transportation (Transport and Funds), Energy sector, Oil and gas production, Social protection (Welfare projects), Import and Export, Government policy, Small Industries, Financial development, Pakistan Stock Exchange performance, and Development Projects (Federal and Provincial) (Ministry of Finance: Government of Pakistan, 2019). These Economic indicators were taken into account for developing Economic Issue category list for this research.

Data Collection

To conduct content analysis involving Twitter, the data was collected on the basis of 'Hashtags' (#) as previous researches on the subject indicated that hashtags are useful in identifying the Twitter trends and are also helpful in identifying tweets about a particular topic (Bruns & Burgess, 2015; Small, 2011). The topic trending feature was introduced by Twitter back in 2008 whereby users can generate group posts on a particular topic by using hashtag (#) with a word or phrase indicating it to be the topic pointed out that hashtag instantly catches the attention of the community around that topic (Fitton et al. 2009).

For the purpose of content analysis of traditional media (TV News channels), the current research counted air time (in seconds) of News headlines. As the unit of analysis was the Economic issue related news story/headlines. The unit for coding comprised each news story from headlines. Geo and ARY were analyzed to compute the news agendas of TV. News headlines of the Prime time; 8:00 – 10:00 pm, late night; 12am and Noon; 12pm were retrieved from respective websites of the News channels. The coverage time dedicated to each issue within the stories of headlines was identified by the coder.

Data Analysis

A number of Statistical tests were utilized for analyzing the data and evaluating the hypotheses in line with the research questions. The Statistical tests incorporated in this research includes: Spearman's Rank-order Correlations, Cross-lagged Correlation technique along with the Rozelle-Campbell Baseline.

Inter-coder Reliability

The 119 Twitter trends and 974 news headlines and Twitter trends designated to two coders that are extensive user of Twitter. One of them was Media Studies graduate of Bahria University and other was from International Islamic University. The Holsti Inter-coder reliability coefficient for the Traditional media TV Channels and Twitter is as follows;

Inter-coder Reliability of Twitter: 0.880 or 88%

Inter-coder Reliability of TV Channels: .086 or 86%

Total number of Twitter trends collected about budget related Economic issue categories is N=119. And for the TV News channels, the total number of headlines related to Economic issue categories of GEO News; N=482 and of ARY News; N=492.

The ranked issue categories for Twitter trends and TV News channels of Pakistan i.e. Geo News and ARY News. Among the top three categories, the Twitter trends presents highly ranked tweets regarding Economic Decisions (IMF Deal) (24.30%), Economic Crisis (12.60%) and Dollar Value Increase (10%). Geo News emphasized on Inflation (12.03%), Economic Decisions (IMF Deal) (10.99%) and Economic Crisis (6.84%) while Budget 2019 (10.56%), Inflation (8.53%), Corruption and Economy (8.13%) were the prominent categories on ARY News.

Table.1: *Salience and Ranked Issue of Twitter and the TV News Channels*

Rank Order	Twitter (N=119) Frequency (100%)	Geo News(N=482) Frequency (100%)	ARY News (N=492) Frequency (100%)
1st	Decisions in IMF Deal (24.30%)	Inflation (12.03%)	Budget-19 (10.56%)
2nd	Economic Crisis (12.60%)	Economic Decisions (IMF Deal) (10.99%)	Inflation (8.53%)
3rd	Dollar Value Increase (10%)	Economic Crisis (6.84%)	Corruption and Economy (8.13%)
4th	Economic Policy (7.50%)	Dollar value increase (6.43%)	Tax Collection (7.92%)
5th	Inflation (6.70%)	Tax Collection (5.80%)	Decisions in IMF Deal (7.72%)
6th	Rupee Devaluated (4.20%)	Economic Team Change (5.39%)	Rupee Devaluated (5.89%)
7th	Accountability/ Investment Budget 2019 (3.30%)	Petrol Price Hike (4.97%)	Increase in GST & Taxes) (5.48%)
8th	Tax Collection (2.50%)	Budget-19 (4.56%)	Gov. Expenses cut in Austerity Measures (4.26%)
9th	Petrol Price Hike (1.60%)	Increase in GST and Taxes (4.5%)	Accountability Economic Crisis (4.06%)
10th	Increase in GST, and Taxes (0.80%)	Accountability (3.90%)	Economic Team Change (3.25%)

According to Table 1, the highest rank is given to the category of Economic Decisions in IMF deal (24.30%) which suggested that the discussion about Government's Economic Decisions and the criticism on it is highly ranked on Twitter agenda. The data focused on the issue category of Economic Crisis (12.60%), Dollar Value Increase (10%), Economic Policy (7.50%), Inflation (6.70%), Rupee Devaluation (4.20%), Investment, Budget 2019 and Accountability (3.30%), Tax Collection, Manufacturing Sector, IMF Loan and Economic Reforms (2.50%), Business Industry, Corruption and Economy, Development Projects (Federal), Dollar Boycott, Economic Growth (Targets), Exports, Funds and Petrol Price Hike (1.60%) and least attention is given to the issue of Tax Allocation (0.80%).

The following top ten issues covered frequently and prominently in Geo News: Inflation (12.03%), Economic Decisions (10.99%), Economic Crisis (6.84%), Dollar Value Increase (6.43%) and Tax Collection (5.80%), Economic Team Change (5.39%), Petrol Price Hike (4.97%), Tax Allocation and Budget 2019 (4.56%) and Accountability (3.90%).

Similarly, the top ten issue categories prominent on ARY News agenda: Budget 2019 (10.56%), Inflation (8.53%), Corruption and Economy (8.13%), Tax Collection (7.92%) and Economic Decisions (7.72%), Pak Rupee Devaluation (5.89%), Tax Allocation (5.48%), Accountability and Gov. Expenses cut (4.26%) and Economic Crisis (4.06%). Whereas Twitter and TV News Channel differ in terms of top and least prioritized issues.

Rank Order Correlation Between Agendas

In order to test the first Hypothesis which states that,

H1: It is more likely that there is a significant correlation between Twitter and Traditional Media agendas on Pakistan's Budget 2019 (Economic issues), with time lag of one day.

Spearman correlation test was applied to the ranked issues of Twitter and TV News channels. The correlation between issue categories of Twitter and Geo News is ($rs = -0.345$), which is a weak negative correlation and it is slightly higher than the correlation between the Twitter and ARY News ($rs = -0.304$), showing that Twitter agenda shares a negative relationship with TV news channels' agenda. This implies that that Twitter shares little in common with TV news channels. However the correlation between Geo news and ARY news is positively moderate ($rs = +0.642**$) which implies that the issue agendas of Geo news and ARY news have more in common.

Table 2: *Spearman Correlation of Issue Agendas*

			Twitter	Geo	ARY
Spearman's rho	Twitter	Correlation Coefficient	1.000	-.345	-.304
		Sig. (2-tailed)	.	.160	.205
		N	22	18	19
	Geo	Correlation Coefficient	-.345	1.000	.642**
		Sig. (2-tailed)	.160	.	.000
		N	18	51	41
	ARY	Correlation Coefficient	-.304	.642**	1.000
		Sig. (2-tailed)	.205	.000	.
		N	19	41	45
**. Correlation is significant at the 0.01 level (2-tailed).					

According to the Hypothesis 1, a positive relationship was to be found between the salient issues of the Twitter trends and of the news coverage of two Pakistani News channels about the Economic issues of Pakistan. But the table 2 shows no significant correlation between Twitter and TV News channels. Only

the salient issues of the Geo News were positively correlated with that of the ARY News. Hence no significant correlation coefficient was found for H1.

Cross-lagged Correlation Analysis

For finding the direction of causality and to test the Hypothesis 2, which is a directional hypothesis, Cross-lagged Correlations was used to measure the effect of Twitter trends of TV news channels and vice versa, across two-time spans. In order to explore the causal direction of agenda setting effect, and to establish the cause and effect or Independent and dependent variable, Cross lagged Correlation is an established technique which uses time-series data (Mitrook *et al*, 2006; Lopez *et al.,* 1998b; Roberts *et al.*, 1994; Xu, 2018).

Time Span for Correlation Analysis

For this research, the interrelationship of Twitter agenda and the TV news channels was examined with a one-day lag with eight time periods are (Time 1, 2, 3, 4, 5, 6, 7 and 8).

Time 1 period is 1st May – 7th May, Time 2 period is 8th May – 14th May, Time 3 period is 15th May -21st May, Time 4 period is 22nd May -28th May, Time 5 period is

29th May -4th June, Time 6 period is 5th June -11th June, Time 7 period is 12th June-18th June and Time 8 period is 19th June -25th June.

After dividing the time span for the correlation analysis into eight time periods the Rozelle-Campbell baseline formula, 7 Spearman correlations performed for each section in SPSS, as the data is ranked. There are four sets ie. first autocorrelations correlation PX1X2 and PY1Y2, second synchronous correlations PX1Y1 and PX2Y2, third is Cross-lagged correlations PX1Y2 and PX2Y1,and fourth is Baseline formula [(PX1Y1 + PX2Y2)/2] * {[PX1X2)2 + (PY1Y2)2]/2}1⁄2

Results of Cross lagged Correlation for Economic Issue Agenda between Twitter and Geo News
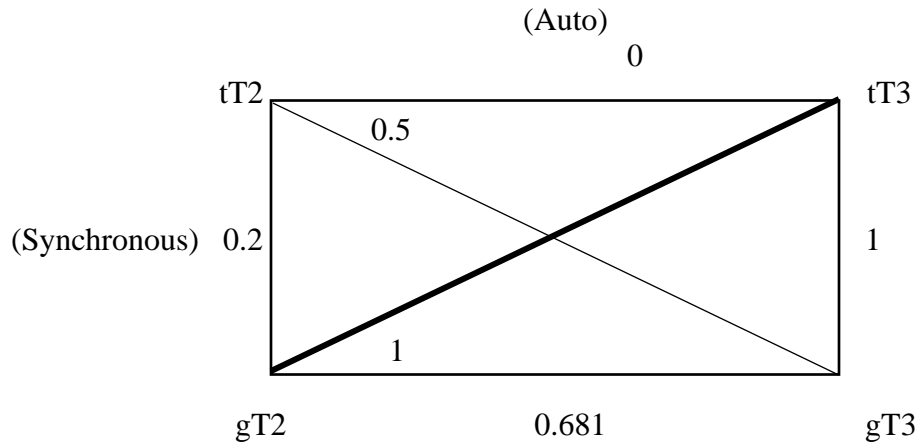
Twitter Trends
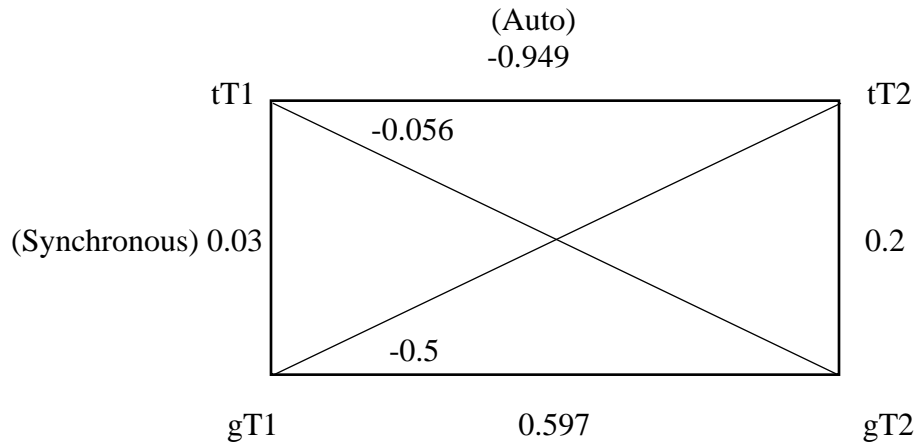
Figure 1. Cross lagged correlation between Twitter agenda at T1 and Geo news agenda at T2.

Figure 1 showed the relation of Twitter agenda at Time 1 and Geo News media coverage of Economic issues at Time 2 compared with the reverse time order: Geo News at Time 1 and Twitter agenda at Time 2. Negative weak correlation -0.056 exists between Twitter agenda at Time 1 and the Geo News agenda at

Time 2, that is same as the reverse correlation of -0.5, revealed not any influence from Twitter feed May 1st through May 7th, to the Geo's agenda during May 9th – May 15th. The reverse correlation of -0.5 does not surpasses the baseline and depicts no influence from Twitter agenda through May 8th- May 14th to the ARY News agenda during May 2nd–May 8th.

Twitter Trends

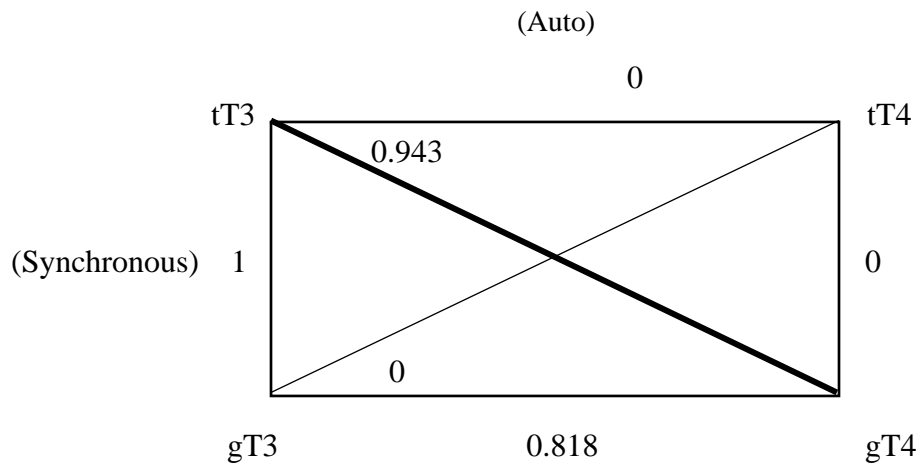*Figure 2.* Cross lagged correlation between Twitter agenda at T2 and Geo news agenda at T3.

Figure 2 shows that Twitter agenda at Time 2 and Geo News media coverage of Economic issues are related at Time 3 with the inverse time order: Geo News at Time 2 and Twitter agenda at Time 3. The findings revealed that moderate correlation 0.5 exists between Twitter agenda at Time 2 and Geo's agenda at Time 3, which is less than the reverse correlation of 1, which has no influence from Twitter agenda May 8th through May 14th to the Geo's agenda during May 16th – May 22nd. However, the reverse correlation of 1 exceeds the baseline and depicts a very strong correlation between Twitter agenda from May 15th-May 21st to Geo News agenda through May 9th -May 15th.
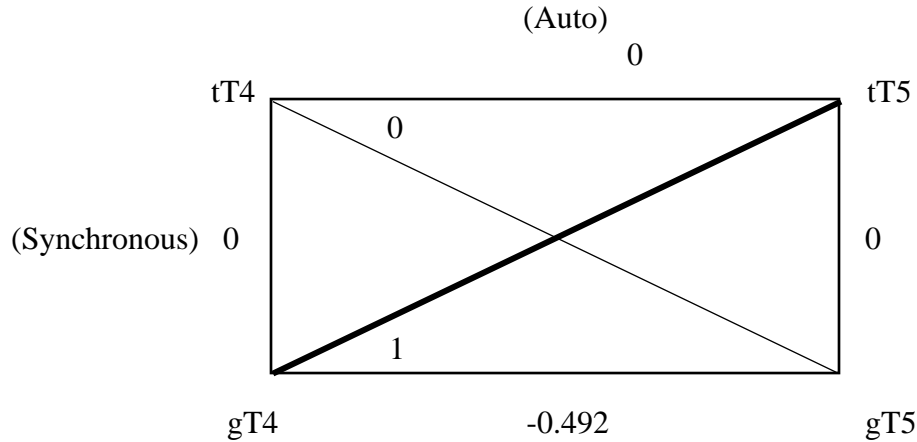
Twitter Trends

Figure 3. Cross lagged correlation between Twitter agenda at T3 and Geo news agenda at T4.

Figure 3 shows the relation of Twitter agenda at Time 3 and Geo News media coverage of Economic issues at Time 4 compared to inverse time order: Geo News at Time 3 and Twitter agenda at Time 4. The findings are that strong correlation 0.943 exists between Twitter agenda at Time 3 and the Geo News agenda at Time 4, which has value more than the reverse correlation 0 and above the Rozelle-Campbell Baseline of 0.289, having influence from Twitter May 15th through May 21st, to the Geo's agenda during May 23rd – May 29th.

Twitter Trends

(Auto)

0

tT4 ──────────────────── tT5

0

(Synchronous) 0   0

1

gT4   -0.492   gT5
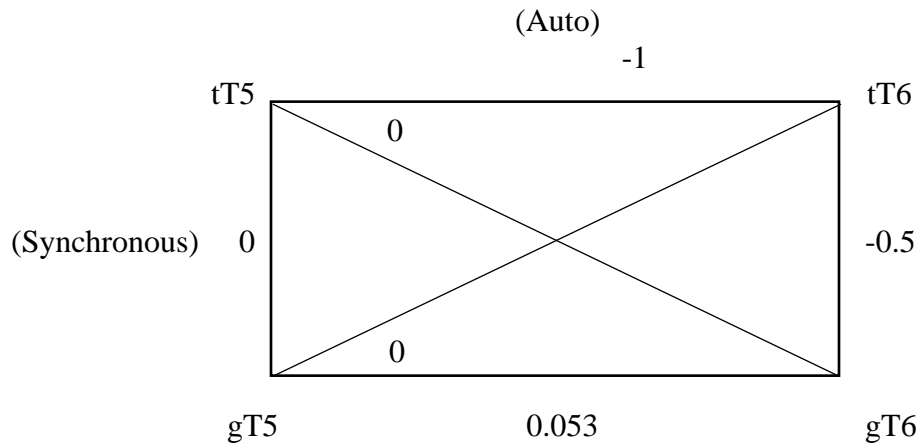
Geo News   RCB=0

Figure 4. Cross lagged correlation between Twitter agenda at T4 and Geo news agenda at T5.

Figure 4 shows the relation of Twitter agenda at Time 4 and Geo News media coverage of Economic issues at Time 5 compared with the opposite time order: Geo News at Time 4 and Twitter agenda at Time 5. The findings revealed that there is No correlation exists between Twitter agenda at Time 4 and the Geo News agenda at Time 5, showed no influence from Twitter feed May 22nd through May 28th to the Geo's agenda during May 30th – Jun 5th. However, the reverse correlation of 1 exceeds the baseline and depicts a very strong correlation of 1 between Twitter agenda of May 29th- Jun 4th to Geo News agenda at May 23rd –May 29th.

Twitter Trends

(Auto)

-1

tT5 ──────────────────── tT6

0

(Synchronous)   0   -0.5

0

gT5   0.053   gT6

Geo News   RCB= -0.176

Figure 5. Cross lagged correlation between Twitter agenda at T5 and Geo news agenda at T6.

Figure 5 shows the relation of Twitter agenda at Time 5 and Geo News media coverage of Economic issues at Time 6 is compared to opposite time order: Geo News at Time 5 and Twitter agenda at Time 6. The findings revealed that no correlation exists between Twitter agenda at Time 5 and the Geo News agenda at Time 6, similarly no correlation exists between the reverse time order, signaling no influence from Twitter agenda May 29th through Jun 4th to the Geo's agenda during Jun 6th – Jun 12th and no influence from the reverse time order.

Twitter Trends

Figure 6. Cross lagged correlation between Twitter agenda at T6 and Geo news agenda at T7.
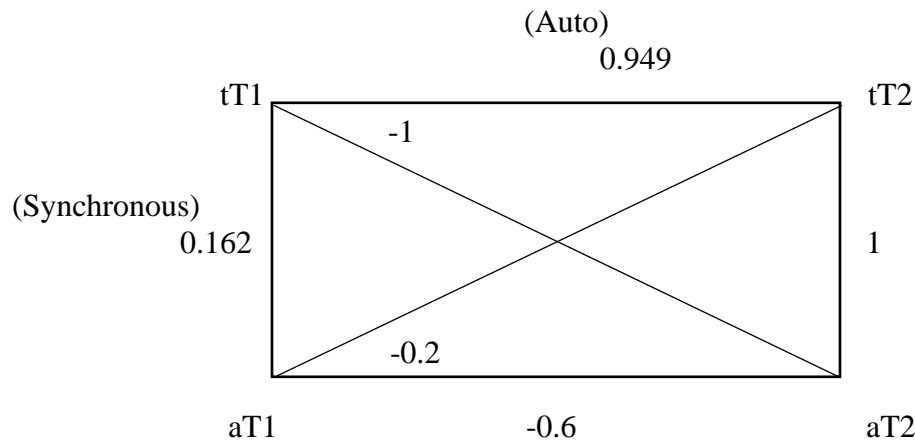
Figure 6 shows the relation of Twitter agenda at Time 6 and Geo News media coverage of Economic issues at Time 7 compared with the reverse time order: Geo News at Time 6 and Twitter agenda at Time 7. The findings showed that no correlation exists between Twitter agenda at Time 6 and the Geo News agenda at Time 7, signaling no influence from Twitter agenda Jun 5th through Jun 11th to the Geo's agenda during Jun 13th – Jun 19th. However the reverse correlation of -0.866 exceeds the baseline and depicts a very weak correlation between Twitter agenda from Jun 12th- Jun 18th to Geo's agenda from Jun 6th- Jun 12th.

Twitter Trends

Figure 7. Cross lagged correlation between Twitter agenda at T7 and Geo news agenda at T8.

Figure 7 shown the relation of Twitter agenda at Time 7 and Geo News media coverage of Economic issues at Time 8 compared with the reverse time order: Geo News at Time 7 and Twitter agenda at Time 8. The findings showed that no correlation exists between Twitter agenda at Time 7 and the Geo News agenda at Time 8, which is less than the reverse correlation of 1, which means no influence from Twitter agenda of Jun 12th through Jun 18th to the Geo's agenda during Jun 20th– May 26th. However the reverse correlation of 1, exceeds the baseline and depicts a very strong correlation between Twitter agenda from Jun 19th- 25th to Geo's agenda at from Jun 13th- Jun 19th.

Results of Cross lagged Correlation for Economic Issue Agenda between Twitter and ARY News

Twitter Trends

(Auto)
0.949

tT1   tT2
        -1

(Synchronous)
0.162   1

        -0.2

aT1   -0.6   aT2

ARY News

RCB= 0.460

Figure 8. Cross lagged correlation between Twitter agenda at T1 and ARY news agenda at T2.

Figure 8 shows that the Twitter agenda at Time 1 and ARY News media coverage of Economic issues at Time 2 are correlated and compared with the reverse time order: ARY News at Time 1 and Twitter agenda at Time 2. The findings showed that strong negative correlation of -1 between Twitter agenda at Time 1 and the ARY News agenda at Time 2, and the reverse correlation of -0.2, both does not exceeds the Rozelle-Campbell Baseline of 0.460, showing no effect from Twitter feed May 1st through May 7th to the ARY's agenda during May 9th– May 15th and no influence from Twitter agenda through May 8th- May 14th to the ARY's agenda during May 2nd–May 8th.

Twitter Trends

(Auto)

0

tT2   tT3

-1

(Synchronous)   1   0.448

-0.2

aT2   -0.224   aT3

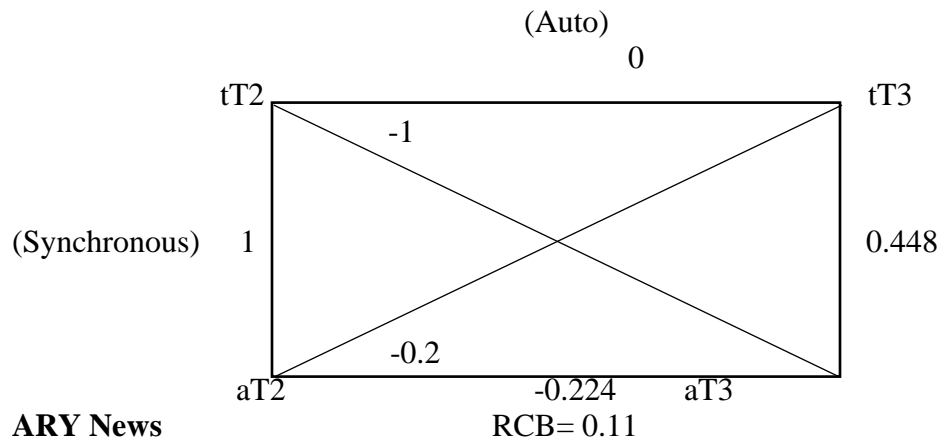**ARY News**   RCB= 0.11

Figure 9. Cross lagged correlation between Twitter agenda at T2 and ARY news agenda at T3.

Figure 9 showed relation of Twitter agenda that is Time 2 and ARY News media coverage of Economic issues at Time 3 compared with the reverse time order: ARY News at Time 2 and Twitter agenda at Time 3. The findings revealed that strong negative correlation of -1 between Twitter agenda at Time 2 and the ARY News agenda at Time 3, and the reverse correlation of -0.2, both does not exceeds the Rozelle-Campbell Baseline of 0.11, showed no sway from Twitter agenda May 8th through May 14th to the ARY's agenda during May 16th– May 22nd and no influence from the Twitter agenda through May 15th- May 21st to the ARY's agenda during May 9th –May 15th.

Twitter Trends

(Auto)

0

tT3   tT4

0.894

(Synchronous)
0.448   0

-1

aT3   0.886   aT4

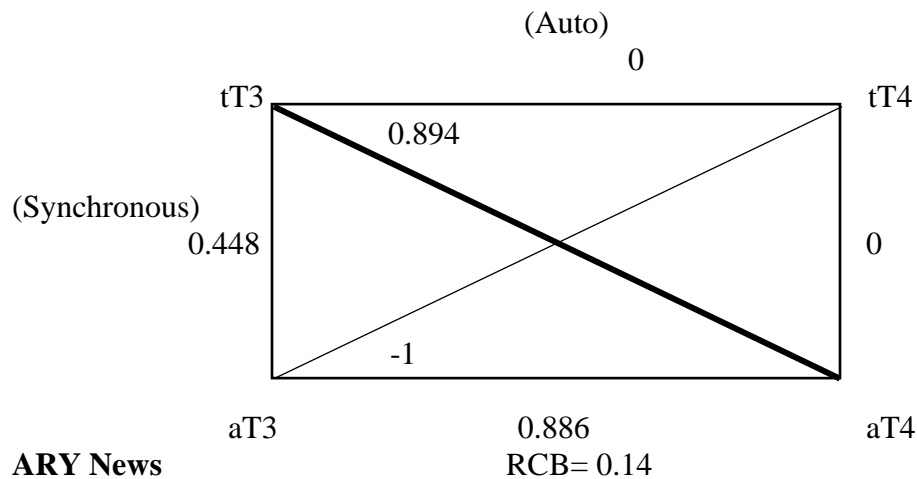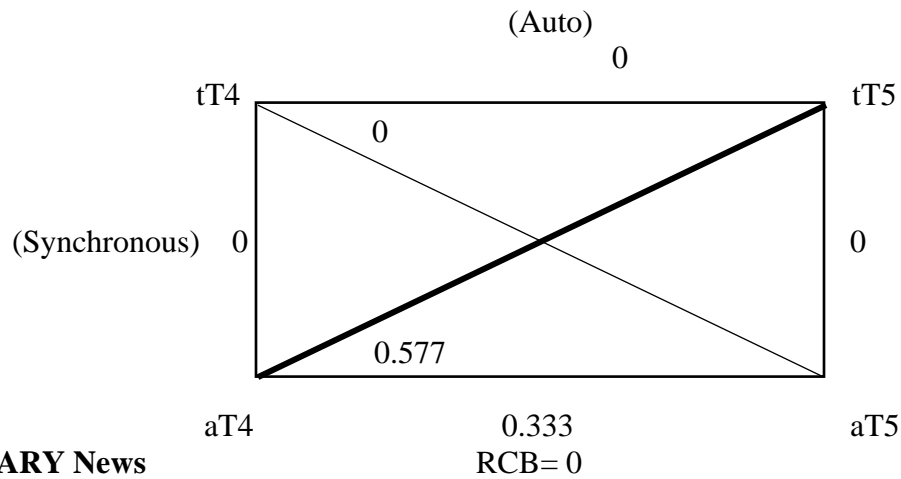**ARY News**   RCB= 0.14

Figure 10. Cross lagged correlation between Twitter agenda at T3 and ARY news agenda at T4.

Figure 10 shows the relation of Twitter agenda at Time 3 and ARY News media coverage of Economic issues at Time 4 is equated with the inverse time order: ARY News at Time 3 and Twitter agenda at Time 4. The findings is that a strong correlation of 0.894 exists between Twitter agenda at Time 3 and the ARY News agenda at Time 4, and exceeds the Rozelle-Campbell Baseline of 0.14, showed the strong influence from Twitter agenda May 15th through May 21st to the ARY's agenda during May 23rd– May 29th.

Twitter Trends

(Auto)

0

tT4 ———————————————————— tT5

0

(Synchronous)　0　　　　　　　　　　　　　　　　0

0.577

aT4　　　　　　　　0.333　　　　　　　aT5
ARY News　　　　　RCB= 0

Figure 11. Cross lagged correlation between Twitter agenda at T4 and ARY news agenda at T5.

Figure 11 shows the relation of Twitter agenda at Time 4 and ARY News media coverage of Economic issues at Time 5 equated with the inverse time order: ARY News at Time 4 and Twitter agenda at Time 5. The findings showed that no correlation between Twitter agenda at Time 4 and the ARY News agenda at Time 5, signaling no influence from Twitter agenda May 22nd through May 28th to the ARY's agenda during May 30th– Jun 5th. However, the reverse correlation of 0.577 exceeds the baseline 0 and depicts a moderate reverse correlation between Twitter agenda of May 29th- Jun 4th to ARY News agenda at May 23rd –May 29th.
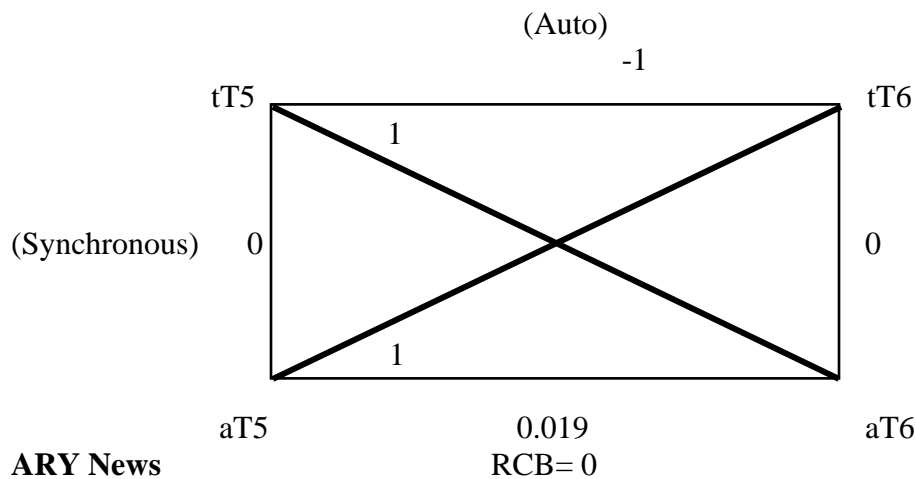
Twitter Trends

(Auto)

-1

tT5 ———————————————————— tT6

1

(Synchronous)　　0　　　　　　　　　　　　　　0

1

aT5　　　　　　　　0.019　　　　　　　aT6
ARY News　　　　　RCB= 0

Figure 12. Cross lagged correlation between Twitter agenda at T5 and ARY news agenda at T6.

Figure 12 shows the relation of Twitter agenda at Time 5 and ARY News media coverage of Economic issues at Time 6 equated with the reverse time order: ARY News at Time 5 and Twitter agenda at Time 6. The findings showed that there is very strong correlation of 1 between Twitter agenda at Time 5 and the ARY's agenda at Time 6, and a very strong correlation of 1 between Twitter agenda at Time 6 and ARY's agenda at Time 5, both exceeding the Rozelle Campbell baseline of 0, signaling bi-directional causal

relationship from Twitter agenda May 29th through Jun 4th to the ARY's agenda during Jun 6th– Jun 12th. And between Twitter agenda of Jun 5th- Jun 11th to ARY News agenda at May 30th –Jun 5th.
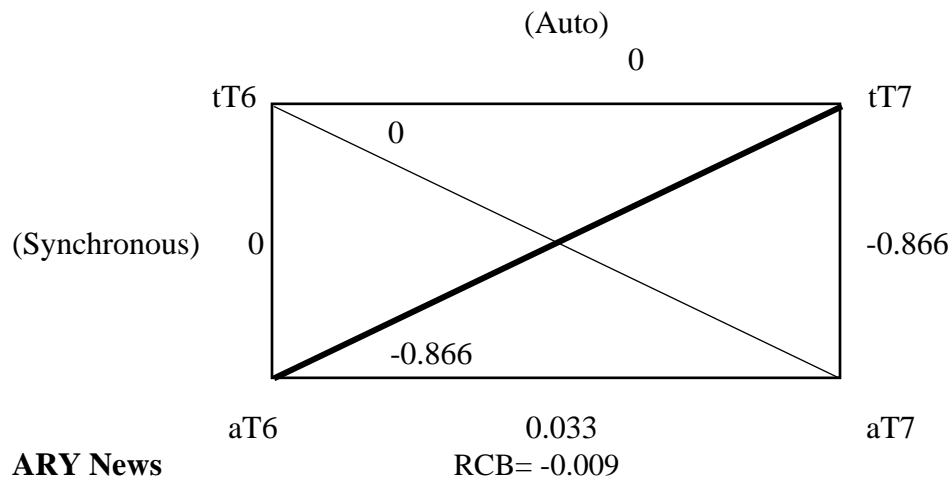
Twitter Trends

Figure 13. Cross lagged correlation between Twitter agenda at T6 and ARY news agenda at T7.

Figure 13 shows the relation of Twitter agenda at Time 6 and ARY News media coverage of Economic issues at Time 7 equated with the reverse time order: ARY News at Time 6 and Twitter agenda at Time 7. The findings revealed that no correlation exists between Twitter agenda at Time 6 and the ARY News agenda at Time 7, showed no influence from Twitter agenda Jun 5th through Jun 11th to the ARY's agenda during Jun 13th – Jun 19th. However the reverse correlation of -0.866 exceeds the baseline and depicts a strong negative correlation between Twitter agenda from Jun 12th- Jun 18th to ARY's agenda from Jun 6th- Jun 12th.
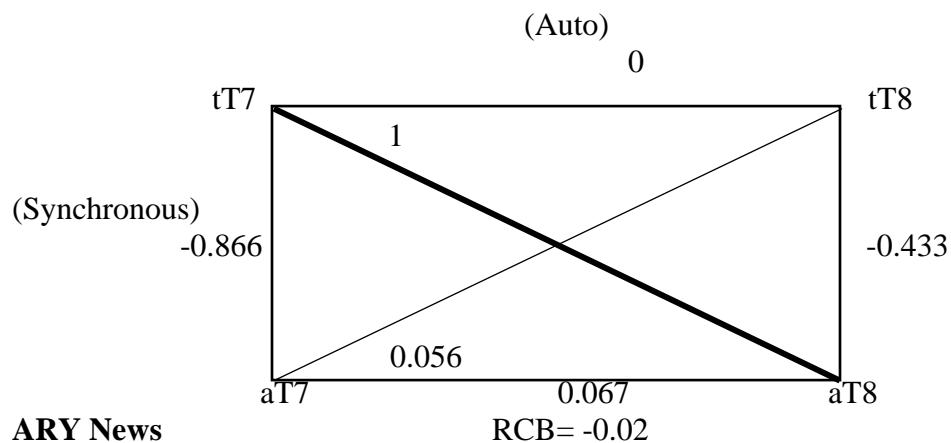
Twitter Trends

Figure 14. Cross lagged correlation between Twitter agenda at T7 and ARY news agenda at T8.

Figure 14 shows the relation of Twitter agenda at Time 7 and ARY News media coverage of Economic issues at Time 8 equated with the reverse time order: ARY News at Time 7 and Twitter agenda at Time 8. The findings showed that there is very high correlation of 1 exists between Twitter agenda at Time 4 and the *ARY's* agenda at Time 8, which is greater than the reverse correlation of 0.056, and exceeds the Rozelle

Campbell baseline of -0.02, showing strong influence from Twitter agenda of Jun 12th through Jun 18th to the ARY's agenda during Jun 20th– May 26th.

Media Coverage of Twitter Agenda and Vice Versa

To investigate Hypothesis 3 which states that;

H3: It is more likely that the one day time lag exists between transferring of agendas from Twitter to Traditional Media and vice versa, regarding Pakistan's Budget 2019 (Economic Issues).

The researcher gathered every Tweets and then the News headlines which covered the same issue categories of Twitter.

Table 3: *Time Lag Rate and Issue Transference from Twitter to News Channels.*

Date	Twitter		Geo	Date
May 1st –May 7th	tT1		gT1	May 2nd –May 8th
May 8th – May 14th	tT2	1	gT2	May 9th – May 15th
May 15th – May 21st	tT3	0.943	gT3	May 16th – 22nd
May 22nd – May 28th	tT4	1	gT4	May 23rd – May 29th
May 29th – Jun 4th	tT5	-0.866	gT5	May 30th – Jun 5th
Jun 5th – Jun 11th	tT6	1	gT6	Jun 6th – Jun 12th
Jun 12th – Jun 18th	tT7		gT7	Jun 13th – Jun 19th
Jun 19th – June 25th	tT8		gT8	Jun 20th – Jun 26th

Table 3 shows, 14 days data, when the News Media agenda followed the Twitter agenda. So in order to analyze the Hypothesis number 3; one day time lag exists between transferring of agendas from Twitter to TV News Channels regarding Economic Issues of Pakistan. Only top three issues were analyzed for the transference analysis. Issue category 'Economic Decisions' (related to Government's Economic Decisions, IMF Deal and criticism on it) was transferred the most, showing that discussions on Twitter about this issue caught media's attention. And hence made its way to News, with a lag of one day. Among the most transferred issue category is the category of 'Economic Decisions (IMF Deal)'. Similarly another analysis was done for Media agenda being transferred to Twitter agenda and the results showed that 17 days out of the total 57 days, it was the Media agenda that made its way to the Twitter, with a time lag of one day.

Table 4: *Time lag Rate and Issue Transference from News channels to Twitter.*

Date	Twitter		ARY	Date
May 1st –May 7th	tT1		aT1	May 2nd –May 8th
May 8th – May 14th	tT2		aT2	May 9th – May 15th
May 15th – May 21st	tT3		aT3	May 16th – 22nd
May 22nd – May 28th	tT4	0.894	aT4	May 23rd – May 29th
May 29th – Jun 4th	tT5	0.577	aT5	May 30th – Jun 5th
Jun 5th – Jun 11th	tT6	1 1	aT6	Jun 6th – Jun 12th
Jun 12th – Jun 18th	tT7	-0.866	aT7	Jun 13th – Jun 19th
Jun 19th – June 25th	tT8	1	aT8	Jun 20th – Jun 26th

Table 4 shows the most transferred issue categories that made way to Twitter from Geo News and ARY News is 'Economic Decisions (IMF Deal)' and 'Economic Crisis'. This shows that the headlines about Government's Economic decisions and updates on IMF deal on News channels might have triggered discussion on Twitter on these issues.

Discussion

The current research aimed at studying the Intermedia agenda setting by taking into account two News Channels as Traditional Media and Twitter trends. This was done to understand the Inter-media agenda setting by taking into account the Traditional media and Social media both. The researcher conducted an extensive literature review on the subject of intermedia agenda setting. On the basis of the reviewed literature, three hypotheses were drawn and then quantitative analysis was conducted to determine the veracity of those hypotheses. As part of analysis the researcher conducted cross-lagged correlation analysis and Rozelle-Campbell value analysis. Thrice of the hypotheses are reproduced as follows and discussed subsequently in the light of the findings.

H1: It is more likely that there is a significant correlation between Twitter and Traditional Media's (TV News channel) agendas on Pakistan's Budget 2019 (Economic issues), with time lag of one day.

The contextual analysis of the data from Twitter and TV news channels shows that the top ten issues on Twitter, Geo and ARY differ from each other. Twitter agenda showed more inclination towards the topics such as Economic Decisions, Economic Situation (Crisis), Economic Policy, Dollar Value Increase while least important issues was Tax Allocation. This showed that Twitter, which is the independent portal for public opinion without any control from Government or Private sector, was more towards discussing the Government's Economic planning and its effects, the Economic Policy and the ongoing Economic Situation (Crisis).

Geo's agenda matches Twitter agenda on few issues, which includes Economic Decisions, Economic Crisis and Inflation and Dollar Value Increase. While least importance is given to Accountability.

While on the other hand highly prioritized issues on Twitter agenda, differs greatly from ARY agenda in terms of common issues. ARY agenda has emphasized more one Budget 2019 related headlines and some other issues like Corruption and Economy and Austerity Measures taken by Government. While the issue of Economic Team Change was given the least importance among the top ten issues.

It has been revealed that which tweets grasped media attention whereas other never, including issues like Economic Policy, Manufacturing Sector Issues, Funds, Development Projects (Federal), Exports,

Economic Growth, Economic Reforms (FATF). While some topics like Economic Decisions, Inflation, Accountability and Dollar Value Increase is covered by all.

According to the Hypothesis 1, there is a positive relationship between the salient issues of the Twitter trends and of the News coverage of two Pakistan's News channels about the Economic issues of Pakistan. Spearman Correlations and the Analysis shows that there was no positive correlation between Twitter and TV News Channels. Moreover the correlations were on the weaker side. One reason for weaker correlation could be the smaller size of data of Twitter. Whereas the issue salience of the Geo News was positively correlated with the issue salience of ARY News. The reason for this might be the homogeneity that exists between the TV News channel's coverage of issues. Hence H1 is not supported.

In order to test the directional Hypothesis 2, which will determine the cause and effect variable. Cross correlation analysis was done by dividing the data into one week time period, total into 8 time periods. Spearman Correlation technique was used to analyze the difference between the ranked categories. The H2 is stated as follows:

H2: The direction of causality of agendas shifts from Twitter to Traditional Media (TV News channels) on Pakistan's Budget 2019 (Economic Issues).

Cross correlations between Twitter and Geo news were simplified to better explain how Twitter agenda influenced the Geo News coverage of that agenda. As the result showed in table 3, the time period was evenly divided into 7-days (8-sets). Twitter only impacted the Geo News agenda from Time3 to Time4 only (May 15th-May 21st ----May 23rd –May 29th) with a higher level of correlation.

While the reverse correlations of the Geo News impacted strongly the Twitter agenda from Time2 to Time 3, Time4 to Time5, Time 6 to Time7 and Time 7 to Time 8 with strong correlations, that the Geo News coverage of Economic issues may established Twitter agenda during this time. But Twitter did not set the Geo News agenda. Hence, in this case, Twitter does not sets the Geo News agenda. Half of the hypothesis is not supported.

As shown in the Table 4, the cross correlations between Twitter and ARY News channel is statistically significant from Time 3 to Time 4 (May 15th-May21st---May 23rd-May 29th), Time5 to Time6 (May 29th-Jun 4th---Jun 6th-Jun 12th), and from Time7 to Time 8 (Jun 12th-Jun 18th---Jun 20th-Jun 26th). Which means that the Twitter Trends posted during this time period has strongly influenced ARY News Agenda.

As the data shows, the reverse correlations at Time4 of the ARY News media influenced Twitter agenda, revealed that the media coverage of certain economic issues may form Twitter's agenda during this time, or have triggered discussion on Twitter during these Time periods.

Therefore, Hypothesis 2 is partially supported.

A bi-directional influence is present between Time 5 and Time 6. Where both Twitter and ARY news are influencing each other strongly. Evidence of bi-directional influence between online public agenda and media agenda is also found in previous studies (e.g., Lee, Lancendorfer, & Lee, 2005).

To what extent the direction of causality exists regarding Intermedia agenda setting between Twitter and TV News channels on Economic issues of Pakistan. In case of Geo News, the data and research results show that the Twitter has less ability to influence the Geo News channel's agenda. Among both the news outlets, Geo News has strongest capacity to drive Twitter's agenda. In previous researches the media remain the major information source in providing social media users with information to use in their online discussions (Roberts *et al.*, 2002). Media coverage can give importance to issues, which are then perceived as important by social media users. Hence the traditional agenda setting function which claims to shape the public agenda can also be applied to this case. Whereas a bi-directional influence is found in case of ARY News channel. Where both the Twitter and ARY influence each other strongly.

Although it seems that the increasing sovereignty of online public opinion has undermined the governments and private Media channel's monopoly control of information. But contrary to this, this study shows that

the Media Channels are still the major agenda setter in Pakistan. As the data shows the influence from the News media to Twitter is stronger than vice versa, showing that the direction of causality is from Media channels to Twitter.

The third Hypothesis states that, **H3:** It is more likely that the one day time lag exists between transferring of agendas from Twitter to Traditional Media (TV News channels) and vice versa, regarding Pakistan's Budget 2019 (Economic issues) is significant.

The third Hypothesis predicted a one day time lag between transference of agendas from Twitter to TV News channels. The data for each day of Twitter and TV News channels for transference of agendas from Twitter to the top three issue categories mentioned by TV News channels that day. H3 is supported as it confirms the one day time lag, between transference of agenda from Twitter to TV News channels on Economic issues of Pakistan. However it is evident from the Data Analysis that the TV is setting the Twitter agenda i.e. 17 days out of total 57 days. Which is more than the days, Twitter setting the TV's agenda.

Conclusion

This study adds to the information about Intermedia agenda setting effecting the social media of Pakistan. Social media, especially Twitter, has become an extensive and strong tool of political communication, for breaking and discussing news, for gaining political support and for Governments to make public statements of policy decisions. Results of this study confirms that Intermedia relationship exist between Internet bulletin boards and TV News channels at the first and fourth level of agenda setting i.e. Intermedia agenda setting. In case of Geo News, the issue salience of Media channel has more power to influence the issue salience of Twitter (Social media). Twitter has limited power to shape agenda of Geo News. But in case of Twitter and ARY News, the effect is reciprocal.

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