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A Study on Hürriyet and Twitter Within the Framework of Intermedia Agenda-Setting*

Medya Arası Gündem Belirleme Kuramı Çerçevesinde Hürriyet ve Twitter Üzerine
Bir Çalışma

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Keywords:

Intermedia Agenda-Setting, Hürriyet, Twitter, Turkish Media, Mainstream Media, Social Media, Cross-Lagged Panel, Bi-Directional Influence.

Abstract

Over the past two decades, many studies have been conducted on agenda-setting theory focusing on the relationship between mainstream media and internet platforms. However, these studies predominantly addressed the phenomena within the American media context. Therefore, the knowledge about a totally different context such as Turkey is unclear. That is the reason why, in this study, I intend to close the gap by analyzing the intermedia agenda-setting relationship between online Turkish mainstream media and social media. The data were collected from a major newspaper, Hürriyet, and Twitter twice per day, mornings and evenings, from 8 February 2015 to 14 February 2015. Later, two separate content analyses were conducted, and cross-lagged panels were designed to examine the hypothesized relationships which predicted a bi-directional influence between mainstream media and Twitter. The results revealed no clear intermedia agenda-setting relationship between media.

Anahtar Kelimeler:

Medya Arası Gündem Belirleme, Hürriyet, Twitter, Türk Medyası, Ana Akım Medya, Sosyal Medya, Çapraz Zaman Gecikmeli Panel.

Öz

Son 20 yılda ana akım medya ve internet platformları arasındaki gündem belirleme ilişkisine odaklanan pek çok araştırma yapıldı. Ancak bu çalışmalar kuramı genellikle Amerikan medyası bağlamında açıklamaya çalıştı. Dolayısıyla Türkiye gibi tamamen farklı bir medya yapısına sahip bir ülkeye ait bilgi henüz sınırlıdır. Aradaki bu boşluğu doldurmak için bu çalışmada online ana akım Türk medyası ile sosyal medya arasındaki gündem belirleme ilişkisine odaklanılmıştır. Veriler Hürriyet gazetesi web sitesi ve Twitter'dan 8-14 Şubat 2015 tarihleri arasında bir hafta (yedi gün) boyunca günde iki sefer, sabah ve akşam olmak üzere toplanmıştır. Ardından her iki platformdan toplanan verilere iki ayrı içerik analizi yapılmıştır. Sonrasında, hipotezlerde öngörülen karşılıklı medya arası gündem belirleme olduğuna dair iddiayı test etmek için tasarlanan çapraz zaman gecikmeli panellerle medya arası korelasyonlara bakılmıştır. Sonuçlara göre bu iki medya platformu arasında net bir gündem belirleme etkisi bulunamamıştır.

*: This paper is based on research conducted for the author's doctoral dissertation in the Institute of Social Sciences, Department of Journalism at Ege University, Izmir (see Melek, 2015).

*: Bu çalışma yazarın Ege Üniversitesi, Sosyal Bilimler Enstitüsü, Gazetecilik Anabilim Dalı'nda yazdığı doktora tezine dayanmaktadır (bknz. Melek, 2015).

Introduction

Along with the digitalization of the media, agenda-setting research shifted onto the internet and social networking sites. Early studies showed that there is a clear relationship between online media and conventional media (see Roberts et al., 2002; Ku et al., 2003; Wallsten, 2007; Sweetser et al., 2008). Scholars are also interested in discovering the public's effect on news media through many social networking sites that are emerging each day (see Kushin, 2010).

As for the online media, the agenda-setting theory was mainly developed and tested in the developed countries where the media is free and/or partly free. Therefore, the knowledge about a totally different context such as Turkey, where the media is restricted, is unclear. In an attempt to develop the theory further, this study intends to shed light on the interaction between Turkish online mainstream media and Twitter which was barely studied within the framework of agenda-setting theory. Therefore, the goal of the study is to understand whether or not the online mainstream media, in this case *Hürriyet*, sets the Twitter agenda in a restricted media environment, such as Turkey and vice versa. The results of the study would lead us to have globalised conclusions on the agenda-setting theory. This research predicted that the restriction in the Turkish media might have created a fragmented public, which could result in the public gaining a first-level agenda-setting power through social networks while the online mainstream media still cling to their first-level agenda-setting power. However, if the results appear similar to Kushin's (2010) study which he determined some influence, but no proof of agenda-setting effect between media, this would indicate that the level of influence between online mainstream media and social networks appears to stay parallel amongst countries where the press is both free and not free. In other words, the level of influence between these two variables tends to stay similar amongst different countries when it comes to the first-level agenda-setting, regardless of the level of press freedom.

Why Twitter and *Hürriyet*?

In the current social media landscape, Twitter differentiates itself from the other popular social networking sites. The most important difference is that the messages, in other words tweets, are public. Therefore, most of the content is open for everyone to analyse (Vieweg, 2010). Even though, Facebook is more popular in Turkey, the fact that majority of its content is either private or semi-private, makes it a less suitable medium for analysis. Especially during and after the Gezi Park protests in 2013, Twitter almost quintuplicate its Turkish users and became very popular in Turkey (Habertürk, 2013). Later, in 2014 and 2015 Twitter was censored twice by the Turkish government, but later the ban was lifted when the constitutional court ruled that the ban violated the freedom of expression and individual rights. According to Twitter's transparency report, Turkey dominates the global Twitter censorship (Twitter, 2015). Therefore, Twitter stands as a very powerful tool in Turkey, considering the amount of attention it receives both from the policy makers and the public.

The purposive sampling method was used. This technique is a nonprobability based sampling method (Baxter and Babbie, 2004) and is appropriate for agenda-setting research, as it allows researchers to sample from media which are considered and justified by previously measured data to be more influential. Therefore, instead of choosing a representative sample of all news media which may not have a strong agenda-setting role, one of Turkey's leading national newspapers, *Hürriyet*, was chosen as the representative of mainstream media. *Hürriyet* is described as the flagship of Turkish media and has the highest circulation numbers (Medyatava, 2016) which consist of a diverse audience. Therefore, it represents a large spectrum of the Turkish society. The website of *Hürriyet* will be examined, as the public increasingly obtain news from online news sources (Basın İlan Kurumu, 2013; Türkiye İstatistik Kurumu, 2014). At the time when the study was conducted, *Hürriyet*'s website was the most visited news website according to Alexa rankings. Also, a recent research project which was conducted by a social media monitoring company, entitled, *Monitera*, showed that *Hürriyet*'s website was the most shared mainstream media amongst Twitter users in Turkey (Monitera, 2013). Also, during the time when the research was conducted, *Hürriyet* had 2.29 million followers on Twitter which was the highest follower figures amongst newspapers on Twitter. As of now, *Hürriyet* still has the highest follower figures in Turkey which exceeds 4 million followers (Twitter Counter, 2017). Due to the aforementioned reasons, these two platforms were selected for the study.

Literature Review

It has been nearly five decades since the original agenda-setting research was conducted in Chapel Hill by McCombs and Shaw (1972), which determined that public's agenda is set by the news media. Since then studies followed the original vein of research to discover the factors that set the public agenda (McCombs and Shaw, 1993). Many studies stem from this theory. Shaw and McCombs (1977) enlarged the scale of their study in 1972 and concluded that newspapers and television stations play an important role in terms of setting the agenda during an election time.

In the 1970s, other scholars also conducted studies on the theory. Tipton et al. (1975) brought the theory to the local level by conducting a research on the gubernatorial and mayoral election in Lexington, Kentucky in 1971. Results showed that although there was nearly no coverage of the campaign, still there was some evidence of a relationship between the frequency of the media coverage and public opinion (1975).

The first-level agenda-setting was mainly interested in the object and claimed that by covering these object whether they are politics, issues or brands, the media determines what the public talks about (Lee, 2005). However, the second-level agenda-setting focused on what is being said about these objects and whether the attribution of the object impacts the public perception (McCombs, 2005; Lee, 2005). Therefore, the first-level agenda-setting discloses "what to think about", while the second-level discloses "how to think about the issues" (Cohen, 1963: 13; McCombs et al., 2000; Lee, 2005; McCombs and Bell, 1996). For many years, researchers sought to discover the factors, which set

the public's agenda and all indicators point towards the media. That is the reason why the studies inevitably evolved into searching for "who sets the media agenda?". Recent studies determined that the way one media outlet covers a story may impact the coverage of another media outlet and therefore, media entities can set the agenda of one another resulting in an intermedia agenda-setting (Roberts et al., 2002). McCombs et al. (2000) suggest that intermedia agenda-setting is the influence of one media on another. Reese and Danielian (1989) conducted a research among the national news media in the USA, including newspapers, magazines and broadcast stations, in an attempt to discover an intermedia agenda-setting. In the end, they determined that the most influential news outlet was *The New York Times*, which set the agenda for all other news sources.

Along with the developments in the online world, researchers are now analyzing the intermedia agenda-setting effect between conventional media and online platforms (Wallsten, 2007; Kushin, 2010). Wallsten (2007) examined blogs and online discussions and discovered there was an agenda-setting influence in both directions between blogs and *The New York Times*. Another significant result was that the nature of the influence was immediate unlike the original agenda-setting theory (2007). Ku et al. (2003) examined websites and conventional media and determined that the websites set the agenda of the conventional media and the internet has a huge capacity to impact the information flow to the conventional media (2003). However, when Sweetser et al. (2008) examined blog posts and broadcast media, they concluded that the media set the agenda. Apart from blogs, a study focusing on the Electronic Bulletin Boards (EBB) was conducted by Roberts et al. (2002). The results revealed that the media set the agenda for EBBs in all issues except for abortion. Consequently, they determined that the media coverage led to agenda-setting behavioral effect (2002). The main difference of this study was that the researchers focused on the behavioral effects of agenda-setting, unlike the original Chapel Hill study which was interested in the cognitive effects (McCombs and Shaw, 1972; Shaw and McCombs, 1977).

Kushin (2010), analyzed intermedia agenda-setting influence between *The New York Times* and Twitter in an attempt to discover whether there is an influence between Twitter and the conventional media and the direction of the influence, if it exists. He couldn't find a clear intermedia agenda-setting influence in both directions. However, he determined that the direction of the agenda-setting effect was mainly from Twitter to *The New York Times* (Kushin, 2010: 121-122). This is considered to be one of the first studies to analyze the possibility of intermedia agenda-setting effect between the social media and mainstream media.

As is discussed, mainly these studies addressed the agenda-setting phenomena in the context of the USA. Having the same drive as Kushin's study, the current research aims to discover further the relationship between Twitter and mainstream media in a totally different context such as Turkey, where the media is restricted.

Research Questions

RQ1: Does intermedia agenda-setting occur between online mainstream media and social media in a country where the media is restricted?

RQ2: In a restricted media environment, what would be the direction of the intermedia agenda-setting influence between online mainstream media and social media?

Hypotheses

As is discussed in the literature review, early studies in intermedia agenda-setting research indicate a tendency towards a mutual influence between mainstream media and online media. Therefore, this study seeks to determine an intermedia agenda-setting influence between the social networking site, Twitter, and the online version of mainstream newspaper, *Hürriyet*, in both directions. Recent studies show that intermedia agenda-setting occurs more quickly on the internet when compared to traditional media (Lee et al., 2005; Roberts et al., 2002; Wallsten, 2007). Based on this argument 13 hypotheses were formed. The first seven hypotheses assert that there is a bi-directional intermedia agenda-setting effect between *Hürriyet* and Twitter within a single day from morning to evening for each day (see Figure 1). The remaining six hypotheses assert that there is a bi-directional intermedia agenda-setting effect between *Hürriyet* and Twitter between days - from evening of a day to morning of the next day (see Figure 2).

Within Day Relationships

H1: There is reciprocal intermedia agenda-setting influence between M1 & T2 and T1 & M2.

H2: There is reciprocal intermedia agenda-setting influence between M3 & T4 and T3 & M4.

H3: There is reciprocal intermedia agenda-setting influence between M5 & T6 and T5 & M6.

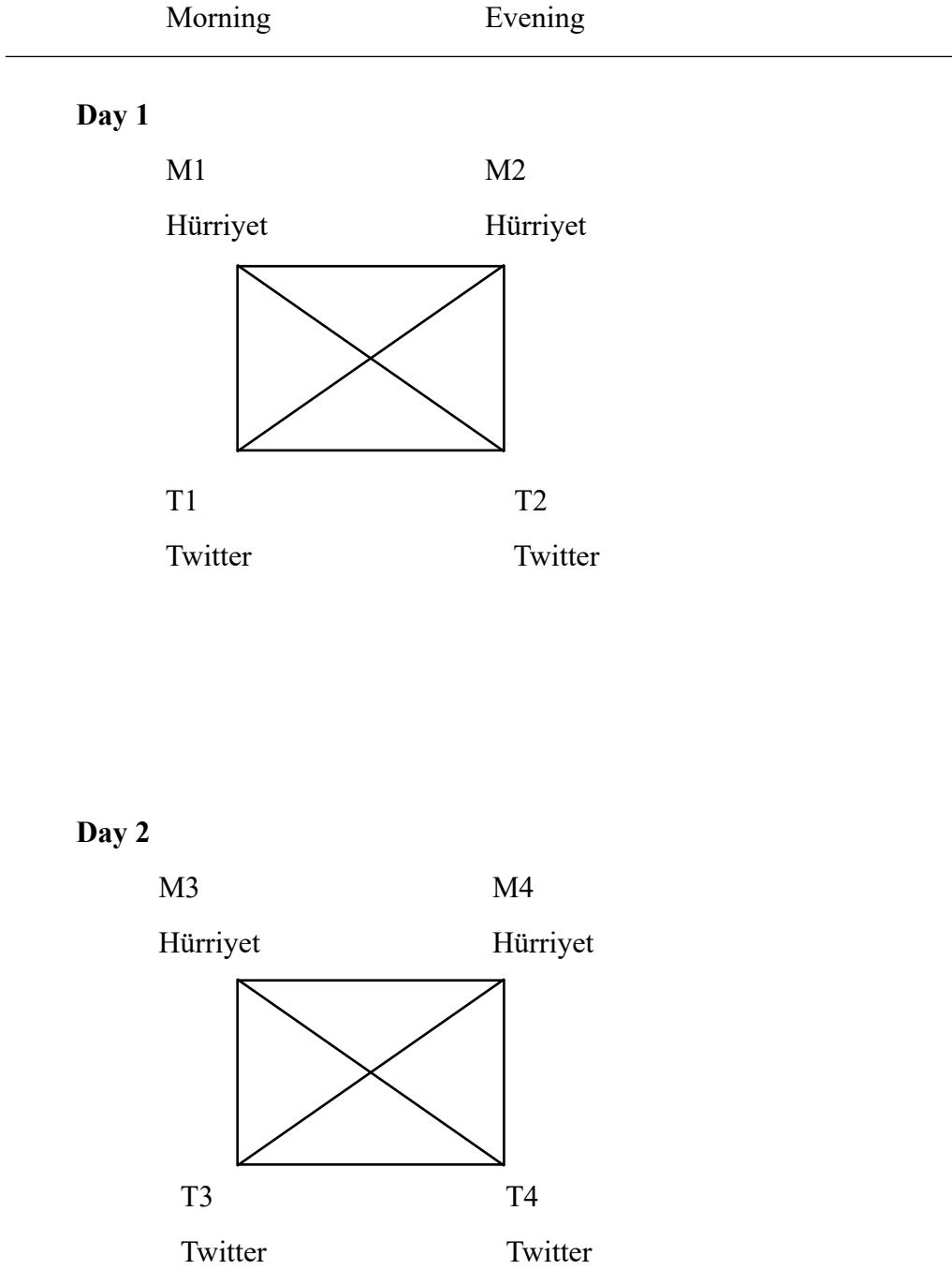
H4: There is reciprocal intermedia agenda-setting influence between M7 & T8 and T7 & M8.

H5: There is reciprocal intermedia agenda-setting influence between M9 & T10 and T9 & M10.

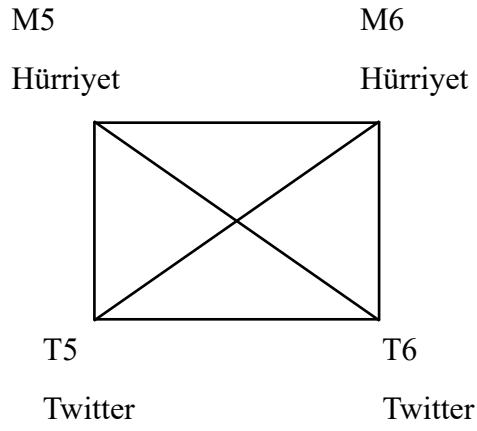
H6: There is reciprocal intermedia agenda-setting influence between M11 & T12 and T11 & M12.

H7: There is reciprocal intermedia agenda-setting influence between M13 & T14 and T13 & M14.

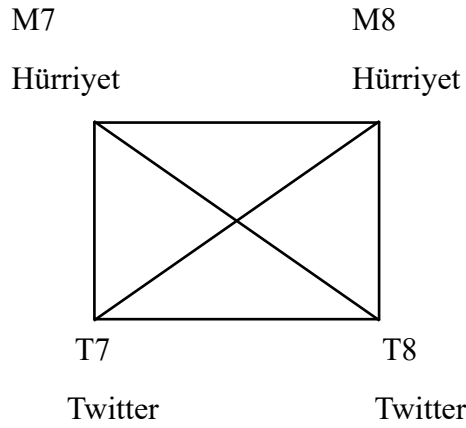
Figure 1: Hypotheses for Within Day Relationships



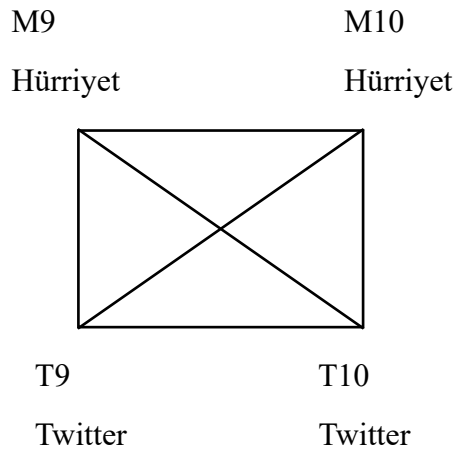
Day 3



Day 4

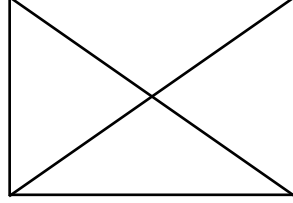


Day 5



Day 6

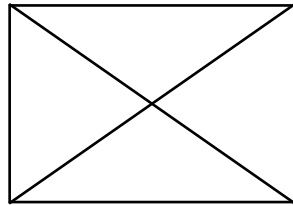
M11 M12
Hürriyet Hürriyet



T11 T12
Twitter Twitter

Day 7

M13 M14
Hürriyet Hürriyet



T13 T14
Twitter Twitter¹

Between Day Relationships

H8: There is reciprocal intermedia agenda-setting influence between M2 & T3 and T2 & M3.

H9: There is reciprocal intermedia agenda-setting influence between M4 & T5 and T4 & M5.

H10: There is reciprocal intermedia agenda-setting influence between M6 & T7 and T6 & M7.

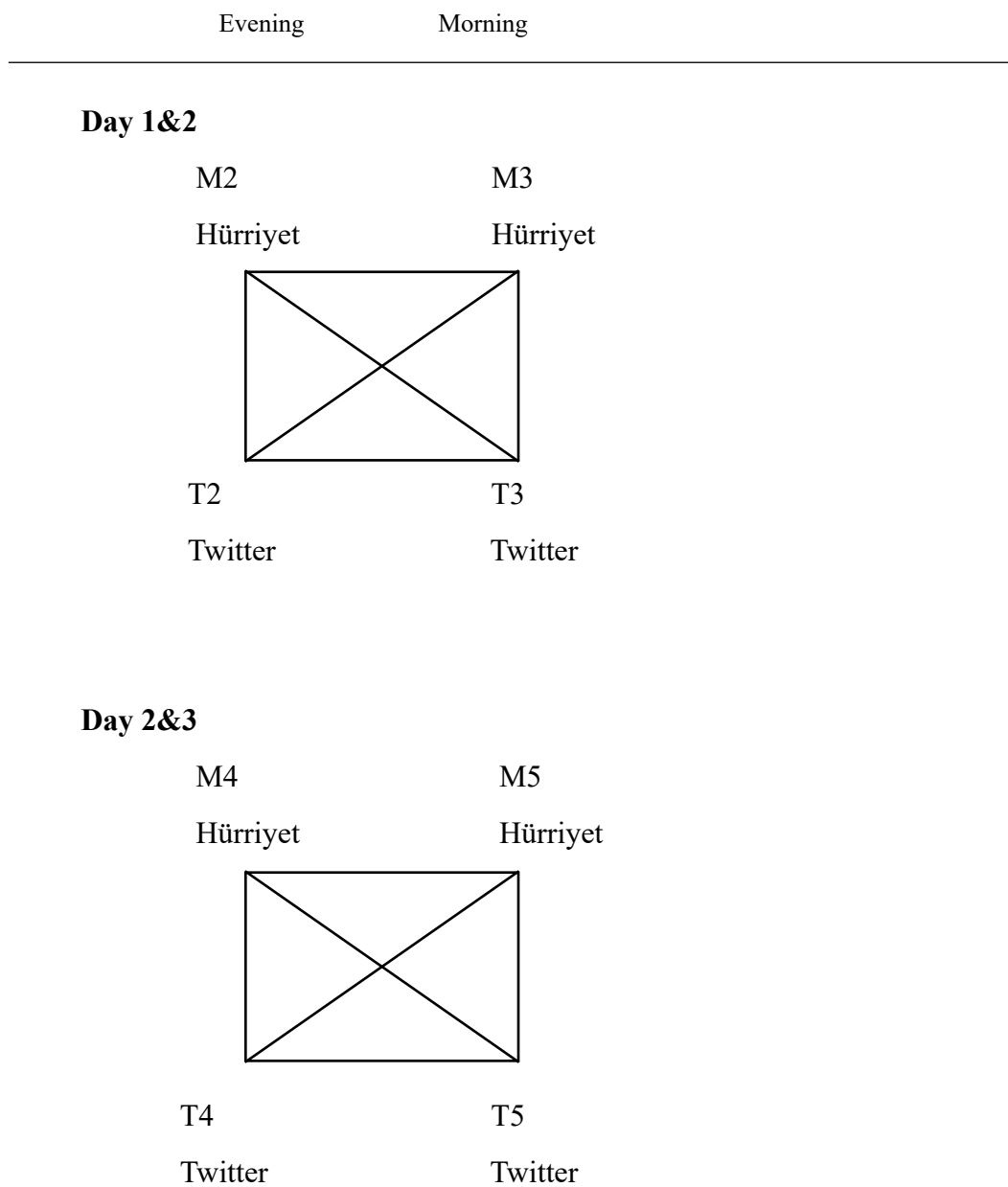
¹ First seven hypotheses assert that there is a bi-directional intermedia agenda-setting effect between media within a single day from morning to evening for each day as is illustrated on the Figure 1.

H11: There is reciprocal intermedia agenda-setting influence between M8 & T9 and T8 & M9.

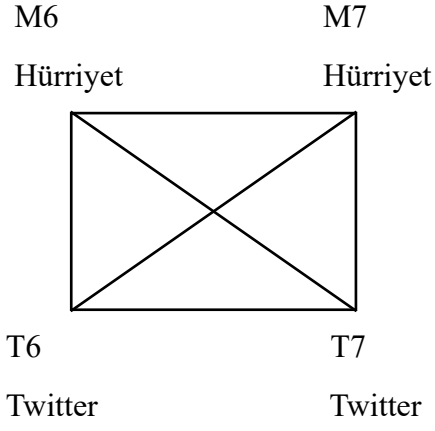
H12: There is reciprocal intermedia agenda-setting influence between M10 & T11 and T10 & M11.

H13: There is reciprocal intermedia agenda-setting influence between M12 & T13 and T12 & M13.

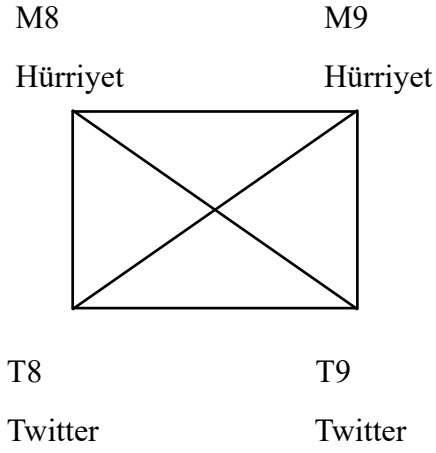
Figure 2: Hypotheses for Between Day Relationships



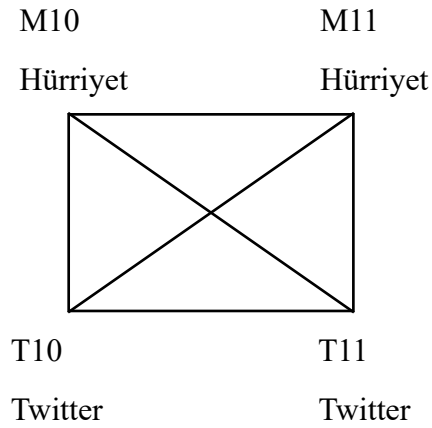
Day 3&4



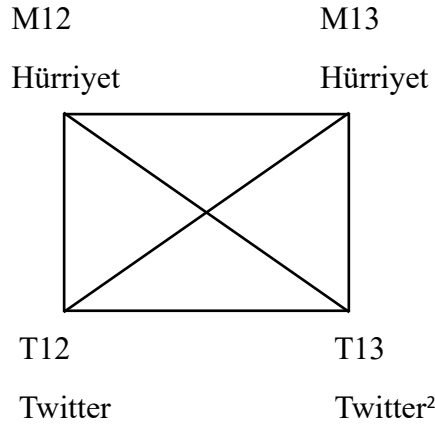
Day 4&5



Day 5&6



Day 6&7



Research Design

Sampling Method

The sampling frame for *Hürriyet*'s website was all the news stories available on the landing page: <http://www.hurriyet.com.tr/> under the following conditions. Whether they are opinion articles or news stories, all content on 15 headlines on the main slider, five subheads on the upper slider, all stories between the main slider and the upper slider, the stories right under the main slider, and the breaking news on the right hand side were included in the analysis. Content in the lower part of the homepage are disregarded, as they are mainly magazine stories, and the ones which are redirecting readers outside the website. Istanbul local news were also excluded, because previous research showed that agenda-setting is stronger at the nationwide level rather than the local level (Palmgreen and Clarke, 1977). That is the reason why, this research was interested in the agenda-setting around the Erdoğan Administration which operates at the nationwide level. Only articles that addressed "Erdoğan" were kept and analyzed. The same purposive sampling method was used to obtain content from Twitter as well. The sample for the micro-blogging site was all the data available via the search tool including the key term "Erdoğan". The data were derived and archived automatically using Martin Hawksey's Tags. Therefore, no data were missed or skipped. The Tags project is a free google sheet template which allows users to setup and run automated collection of search results from Twitter (Hawksey, 2014). The results are extracted from Twitter with the exact time they were posted. Therefore, the content according to the data collection period was easily determined and kept with no repetitions.

The intention to choose "Erdoğan" as a key word is not to extract data that are personally about him. This is because as is stated, agenda-setting is stronger at the national level (Palmgreen and Clarke, 1977). In Turkey, Erdoğan is the most attention

² Second set of hypotheses assert that there is a bi-directional intermedia agenda-setting effect between *media* between days - from evening of a day to morning of the next day as is illustrated on the Figure 2.

grabbing political figure who predominates every issue on the national agenda. All the news stories and tweets mentioning Erdoğan turned out to cover the following 19 different issues: Corruption & Bribery, Democracy/Media, Economy, Education/Science, Election 2015, European Union, Foreign Policy, Government/Political Parties, Health, Hizmet Movement, Justice/Judicial Issues, Local Administration, Magazine, Male Violence, National Security, Religion/Minorities, Social Movements, Solution Process/PKK/Military and Syria. Therefore, using his name as a key word thought to be the best choice to collect the most appropriate and the largest data for the phenomena I was interested to research.

Data Collection and Analysis

The time frame for this research was determined as one week (seven days) considering the immediate nature of Twitter, since in some instances it was determined that agenda-setting on the internet could occur over the course of hours within a single day (Lee et al., 2005; Wallsten, 2007; Kushin, 2010). In accordance with the previous research, since the content on both *Hürriyet* and Twitter changes throughout the day, the schedule for data collection was set twice a day, every morning between 7am and 9am EET and every evening between 7pm and 9pm EET from February 8 to February 14, 2015 (Kushin, 2010). All irrelevant posts were removed, such as the data that came from the name similarity or spams. In total 46.527 tweets from Twitter and 81 news articles from *Hürriyet* were analyzed.

A codebook was created after doing a preliminary analysis on data from both *Hürriyet* and Twitter to be able to conduct two content analyses and measure the frequency of topics receiving attention on both media. This means, a list of key terms was determined and collapsed into categories (issues) that are commonly associated with Erdoğan. This codebook then was entered into Yoshikoder content analysis software as a dictionary file. Consequently, two separate content analyses were conducted using the same codebook for each medium and frequency of the agendas in both media were determined.

Cross-Correlation

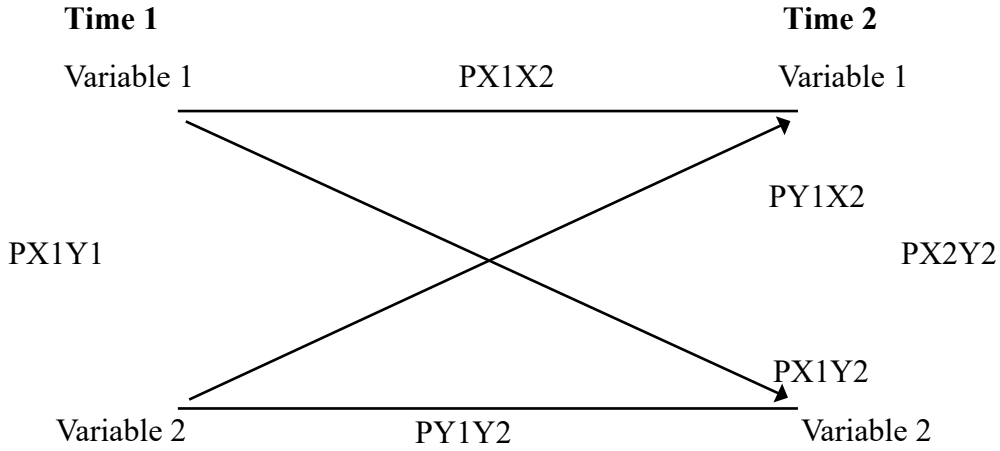
The resulting data were analyzed using the cross-lagged panel and the Rozelle-Campbell baseline. Cross-lagged panel correlation method is largely being used in agenda-setting research (Roberts and McCombs, 1994; Lopez-Escobar et al., 1998; Tedesco, 2001; Dunn, 2006; Tedesco, 2005; Sweetser et al., 2008; Kushin, 2010). Cross-correlation is a method to measure a proposed effect between two variables via separating the variables with appropriate amount of time lag. Therefore, with the allocated time lag between variables, it is suggested that the variable 1 would have the proposed effect on the variable 2 (Shadish et al., 2002). This model has six correlations in total consist of two pairs of three different sets of correlations (see Figure 3) (Shadish et al., 2002). The first set of two paired correlations is the autocorrelation which is the correlation between the same variable over time (PX1X2 and PY1Y2). The second set of correlations is the synchronous correlation which is the correlation between two variables at the same time (PX1Y1 and PX2Y2). The third and last one is the cross-lagged correlation. This correlation measures the effect between two different variables at two different times

(PX1Y2 and PY1X2) (Shadish et al., 2002). The two important correlations here are the cross-correlations; the correlation between variable 1 (*Hürriyet*), cause, and variable 2 (Twitter), effect, at different times (PX1Y2) and variable 2 (Twitter), cause, and variable 1 (*Hürriyet*), effect, at different times (PY1X2) as they indicate the level of influence between the two variables (Shadish et al., 2002).

In intermedia agenda-setting studies there have been some modifications made to the original cross-correlation model which is the implementation of the Rozelle-Campbell baseline (Roberts and McCombs, 1994; Lopez-Escobar et al., 1998; Tedesco, 2001; Dunn, 2006; Tedesco, 2005; Kushin, 2010). Rozelle and Campbell (1969) designed this baseline in order to tackle a potential weakness in the cross-correlation model. The baseline is calculated via formula which takes synchronous correlations and autocorrelations into consideration and determines a threshold below which an even significant cross-correlation statistic would indicate no effect (Lopez-Escobar et al., 1998; Dunn, 2006; Kushin, 2010). With the implementation of the Rozelle-Campbell baseline, any possible third variable that might impact the two variables in this research would be taken into consideration and consequently Type I error resulting in false positive would be avoided (Dunn, 2006; Tedesco, 2005; Kushin 2010). Also, in this procedure, a more conservative test of significance was used. In order for me to conclude that there is intermedia agenda-setting effect from one medium to the other, the autocorrelation of the effect variable must fall below the baseline statistic while the cross-correlation from causal variable to effect variable is above the baseline (Dunn, 2006; Tedesco, 2005; Kushin, 2010). Methodologically, when the autocorrelation of the effect variable is above the baseline, this is an indication of no crucial change on the effect variable over time for the causal variable to cause the change. The Rozelle-Campbell baseline is calculated via the formula below (Roberts and McCombs, 1994; Lopez-Escobar et al., 1998):

$$[(PX1Y1 + PX2Y2)/2] \{ [(PX1X2)^2 + (PY1Y2)^2] / 2 \}^{1/2}$$

Therefore, if the cross-correlations of agendas from *Hürriyet* to Twitter (PX1Y2) and Twitter to *Hürriyet* (PY1X2) are both above the Rozelle-Campbell baseline, this demonstrates influence between media in both directions. The same scenario might happen only on one way as well. Such as, on a panel if the cross-correlation from *Hürriyet* to Twitter (PX1Y2) is above the baseline while the cross-correlation from Twitter to *Hürriyet* (PY1X2) is below the baseline, and vice versa. However, as is explained earlier, in this case one condition has to be met for me to conclude that the proposed influence is an agenda-setting effect. As in a fragmented media landscape like today, the outside variables must be kept under control to avoid any errors (Dunn, 2006; Tedesco, 2005; Kushin, 2010). Therefore, the more conservative test of significance suggests that the autocorrelation in the analysis of interest have to appear under the Rozelle-Campbell baseline.

Figure 3: Cross-Lagged Panel³

Results

Within Day First-Level Agenda-Setting

Every hypothesis was tested on a separate panel in which the within-day relationship for each day in the week was examined. The results did not support the first seven hypotheses. Therefore, first set of hypotheses were rejected. The results are explained below in detail.

As can be seen on Table 1, evidence of within-day intermedia agenda-setting effect was only found in one of the seven panels. However, it was not mutual. There was evidence for intermedia agenda-setting on Day 5, Thursday, and the effect was from Twitter to *Hürriyet*. The autocorrelation of *Hürriyet* ($r = .044, p = \text{NS}$) fell below the baseline (.214) while the cross-correlation from Twitter to *Hürriyet* ($r = .243, p = \text{NS}$) was above the baseline statistic which methodologically indicates that there is an intermedia agenda-setting effect from Twitter to *Hürriyet*. The cross-correlation from *Hürriyet* to Twitter ($r = .416, p = \text{NS}$) was also above the baseline. However, the autocorrelation of Twitter ($r = .481, p < .05$) was above the baseline as well. Therefore, the evidence shows although there was some influence from *Hürriyet* to Twitter, there was no clear agenda-setting effect.

The rest of the six within day panels showed no cross-correlations indicating clear intermedia agenda-setting effect.

Day 1, cross-correlations from both *Hürriyet* to Twitter ($r = .690, p < .01$) and Twitter to *Hürriyet* ($r = .679, p < .01$) were very strong and exceeded the baseline (.372).

³ The cross-lagged panel design has two pairs of three different sets of correlations totaling six correlations. The first set of two paired correlations is the autocorrelation which is the correlation between the same variable over time (PX1X2 and PY1Y2). The second set of correlations is the synchronous correlation which is the correlation between two variables at the same time (PX1Y1 and PX2Y2). The third and last one is the cross-lagged correlation. This correlation measures the effect between two different variables at two different times (PX1Y2 and PY1X2).

This indicates a mutual influence between media. However, autocorrelations for both *Hürriyet* ($r = .783, p < .01$) and Twitter ($r = .608, p < .01$) were also strong and above the baseline which means although there was a bi-directional influence, there was no agenda-setting effect between media.

There was also mutual influence on Day 3. Autocorrelations for both *Hürriyet* ($r = .886, p < .01$) and Twitter ($r = .914, p < .01$) were strong and above the baseline (.731) demonstrating there was a little agenda change over time. Cross-correlations from both *Hürriyet* to Twitter ($r = .844, p < .01$) and Twitter to *Hürriyet* ($r = .742, p < .01$) were also very strong and exceeded the baseline which suggests although there was a mutual influence, there was no agenda-setting effect.

Similarly, there was a bi-directional influence between media on Day 4. Cross-correlations from both *Hürriyet* to Twitter ($r = .787, p < .01$) and Twitter to *Hürriyet* ($r = .574, p < .05$) were strong and exceeded the baseline (.476). However, autocorrelations for both *Hürriyet* ($r = .788, p < .01$) and Twitter ($r = .823, p < .01$) were also very strong and above the baseline demonstrating a little agenda change over time which suggests although there was a bi-directional influence, there was no agenda-setting effect between media.

The remaining three panels showed only some influence from one medium to the other.

The Day 2 panel shows some influence from Twitter to *Hürriyet*. The cross-correlation from Twitter to *Hürriyet* ($r = .806, p < .01$) was very strong and above the baseline statistic (.578). However, the autocorrelation for *Hürriyet* ($r = .668, p < .01$) was also very strong and above the baseline demonstrating a little agenda change on *Hürriyet* over time. Therefore, this indicates that even though there was some influence, the panel failed to demonstrate intermedia agenda-setting effect from Twitter to *Hürriyet*. On the other hand, the cross-correlation from *Hürriyet* to Twitter ($r = .517, p < .05$) fell below the baseline. At the same time, the autocorrelation for Twitter ($r = .805, p < .01$) was very strong and above the baseline demonstrating a little agenda change on Twitter over time. This suggest there was no influence from *Hürriyet* to Twitter.

The Day 6 panel shows some influence from *Hürriyet* to Twitter. The cross-correlation from *Hürriyet* to Twitter ($r = .751, p < .01$) was very strong and above the baseline statistic (.381). However, the autocorrelation for Twitter ($r = .956, p < .01$) was also very strong and above the baseline demonstrating there was almost no change on Twitter agenda over time. Therefore, this can be interpreted as even though there was some influence, the panel failed to demonstrate intermedia agenda-setting effect from *Hürriyet* to Twitter. Conversely, while the cross-correlation from Twitter to *Hürriyet* ($r = .350, p = NS$) fell below the baseline, the autocorrelation for *Hürriyet* ($r = .509, p < .05$) was above the baseline demonstrating a little agenda change on *Hürriyet* over time. This suggests there was no influence from Twitter to *Hürriyet*.

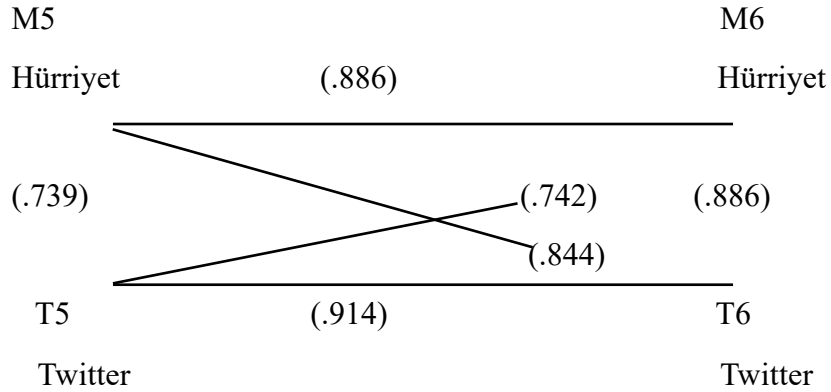
The Day 7 panel also shows some influence from *Hürriyet* to Twitter. The cross-correlation from *Hürriyet* to Twitter ($r = .703, p < .01$) was very strong and above the

baseline statistic (.178). However, the autocorrelation for Twitter ($r = .698, p < .01$) was also very strong and above the baseline suggesting there was a little agenda change on Twitter over time. Therefore, this indicates some influence from *Hürriyet* to Twitter, but insufficient change for intermedia agenda-setting to have happened. Conversely, the cross-correlation from Twitter to *Hürriyet* ($r = -.055, p = \text{NS}$) fell below the baseline. At the same time, the autocorrelation for *Hürriyet* ($r = -.184, p = \text{NS}$) fell below the baseline as well. This result indicates there was no influence from Twitter to *Hürriyet*.

Table 1: Within Day Panels Between Media

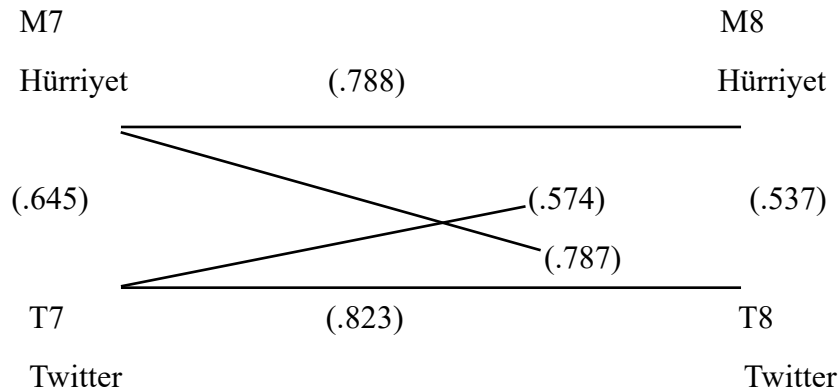
Morning		Evening	
Day 1			
M1		M2	
Hürriyet	(.783)	Hürriyet	
(.494)		(.679)	(.569)
T1	(.608)	T2	
Twitter		Twitter	
			(.690)
Rozelle-Campbell Baseline= .372			
Day 2			
M3		M4	
Hürriyet	(.668)	Hürriyet	
(.838)		(.806)	(.727)
T3	(.805)	T4	
Twitter		Twitter	
			(.517)
Rozelle-Campbell Baseline= .578			

Day 3



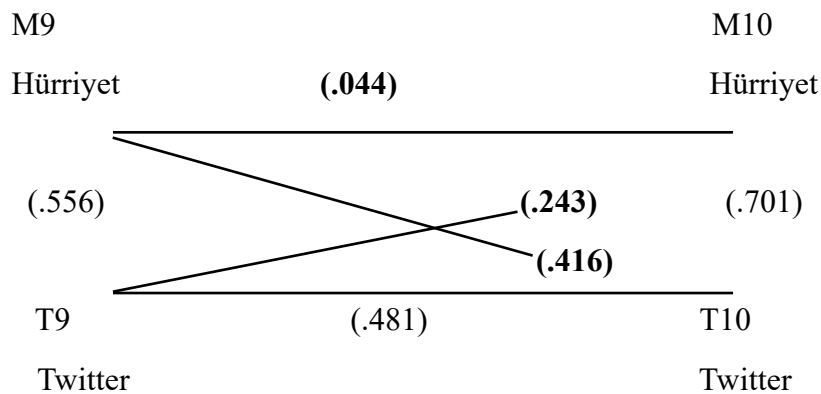
Rozelle-Campbell Baseline= .731

Day 4

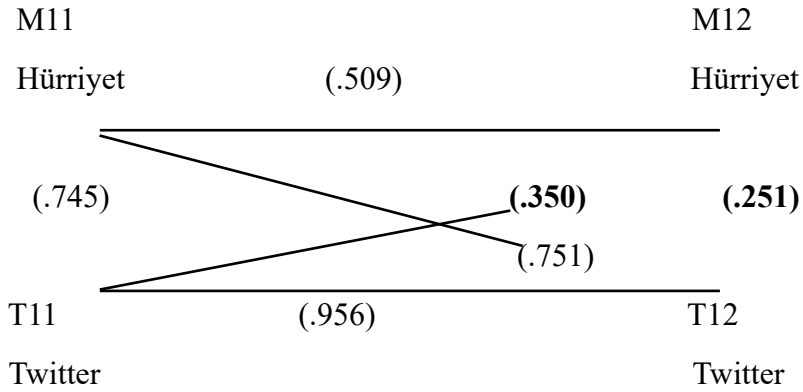


Rozelle-Campbell Baseline= .476

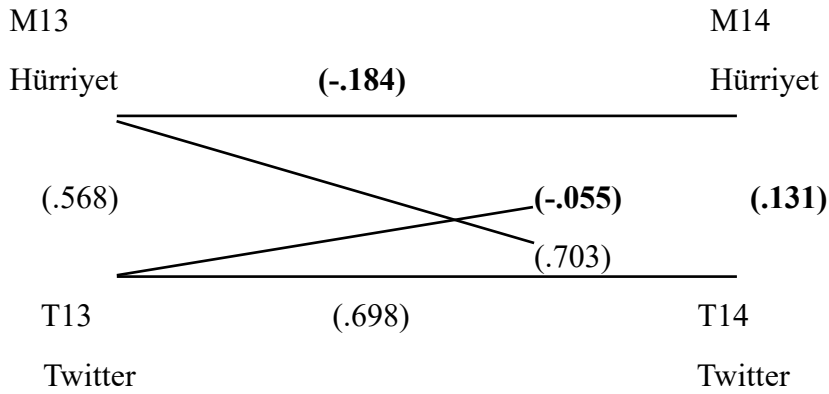
Day 5



Rozelle-Campbell Baseline= .214

Day 6

Rozelle-Campbell Baseline= .381

Day 7

Rozelle-Campbell Baseline= .178

Note: Bold type means the correlation is not statistically significant.⁴

Between Day First-Level Agenda-Setting

Every hypothesis was tested on a separate panel in which between-day relationships for each day in the week was examined. The results did not support the second set of six hypotheses. Therefore, all hypotheses were rejected. The results are explained below in detail and can be found in Table 2.

The Day 1&2 panel demonstrates significant cross-correlations from both directions. The cross-correlation from *Hürriyet* to Twitter ($r = .773, p < .01$) and Twitter

⁴ The table 1 shows cross-lagged panels designed for seven days to test the hypothesized relationship between media. Each panel has six correlations in total consist of two pairs of three different sets of correlations.

to *Hürriyet* ($r = .833, p < .01$) were both strong and above the baseline (.581). The autocorrelation of *Hürriyet* ($r = .713, p < .01$) and Twitter ($r = .927, p < .01$) were both strong and above the baseline as well, indicating a slim change in their agenda over time. Therefore, the mutual influence between media cannot be defined as intermedia agenda-setting.

Similarly, the Day 2&3 panel demonstrates significant cross-correlations from both directions. The cross-correlation from *Hürriyet* to Twitter ($r = .731, p < .01$) and Twitter to *Hürriyet* ($r = .747, p < .01$) were both strong and above the baseline (.510). The autocorrelation of *Hürriyet* ($r = .767, p < .01$) and Twitter ($r = .618, p < .01$) were both strong and above the baseline as well, indicating a minor change in their agenda between days. Since the autocorrelations passed the baseline, the results demonstrate some influence between *Hürriyet* and Twitter, but lack proof of agenda-setting.

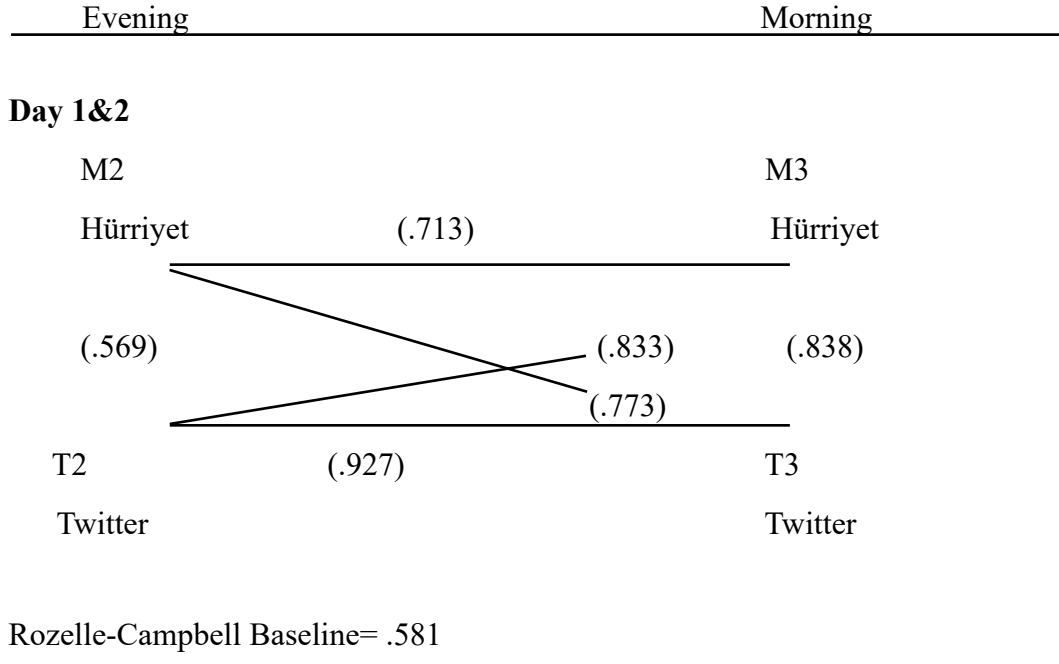
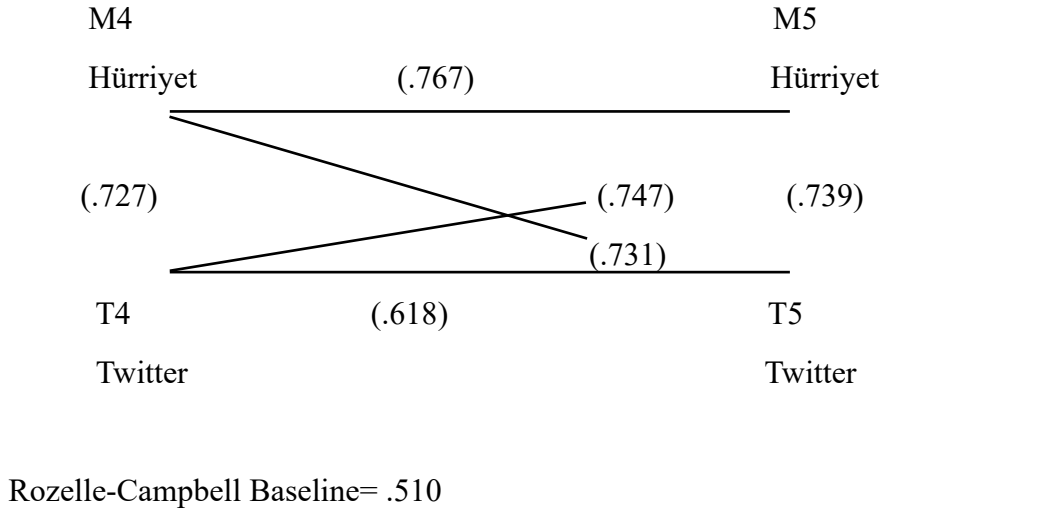
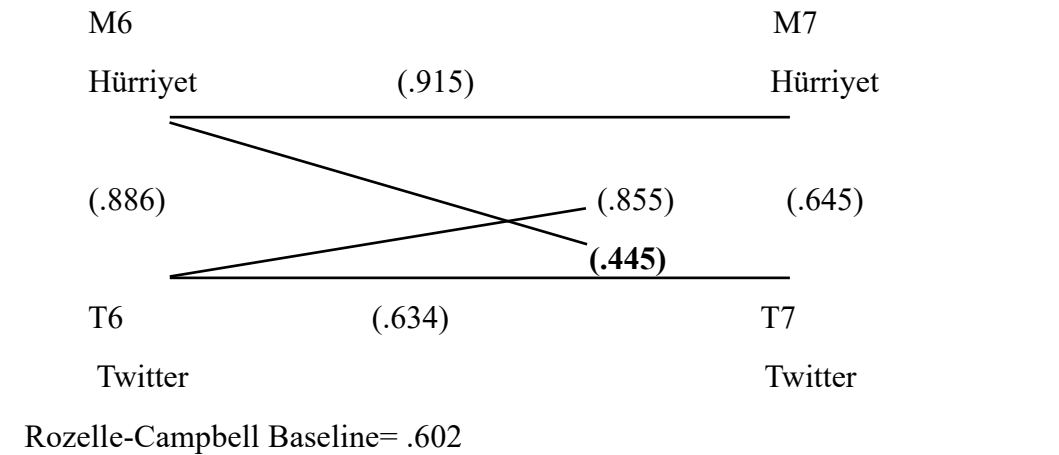
The Day 3&4 panel discovered a significant cross-correlation from Twitter to *Hürriyet* ($r = .855, p < .01$) which was above the baseline (.602). However, the autocorrelation of *Hürriyet* ($r = .915, p < .01$) was also above the baseline suggesting some influence, but no agenda-setting. The cross-correlation from *Hürriyet* to Twitter ($r = .445, p = \text{NS}$) was not significant and below the baseline. Therefore, there is no influence from *Hürriyet* to Twitter from the evening of Day 3 to the morning of Day 4.

The Day 4&5 panel found a significant cross-correlation from Twitter to *Hürriyet* ($r = .656, p < .01$) passing the baseline (.397) together with an autocorrelation of *Hürriyet* ($r = .500, p < .05$) above the baseline. This relationship suggests some influence from Twitter to *Hürriyet*, but a lack of agenda-setting. On the other hand, the cross-correlation from *Hürriyet* to Twitter ($r = .337, p = \text{NS}$) was not significant over time showing no influence from *Hürriyet* to Twitter.

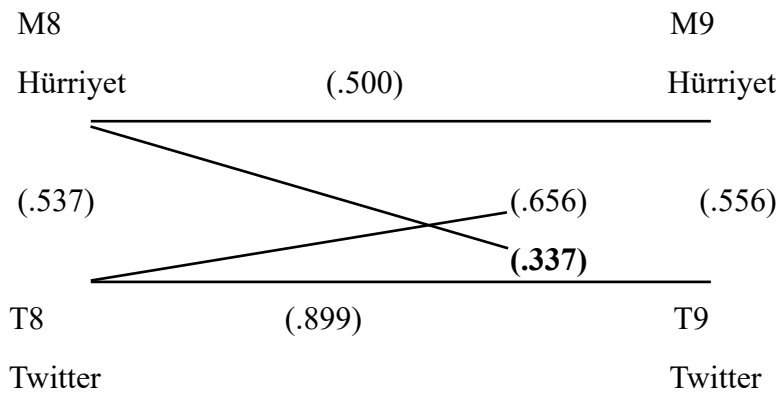
The Day 5&6 panel discovered a significant cross-correlation from Twitter to *Hürriyet* ($r = .637, p < .01$) which was above the baseline (.366). However, the autocorrelation of *Hürriyet* ($r = .510, p < .05$) was also above the baseline suggesting some influence, but no agenda-setting. The cross-correlation from *Hürriyet* to Twitter ($r = .326, p = \text{NS}$) was not significant and below the baseline. Therefore, there is no influence from *Hürriyet* to Twitter from the evening of Day 5 to the morning of Day 6.

The Day 6&7 panel found a significant cross-correlation from Twitter to *Hürriyet* ($r = .544, p < .05$) passing the baseline (.289) together with an autocorrelation of *Hürriyet* ($r = .353, p = \text{NS}$) above the baseline. This relationship suggests some influence from Twitter to *Hürriyet*, but fails to demonstrate proof of agenda-setting. On the other hand, the cross-correlation from *Hürriyet* to Twitter ($r = .263, p = \text{NS}$) was not significant over time showing no influence from *Hürriyet* to Twitter.

Table 2: Between Day Panels Between Media

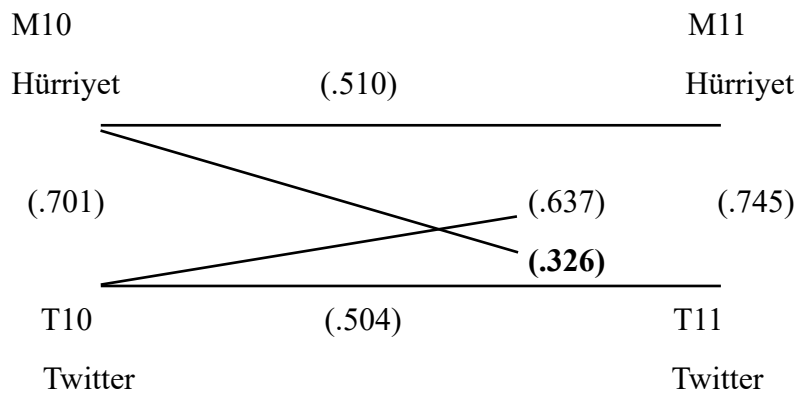
**Day 2&3****Day 3&4**

Day 4&5



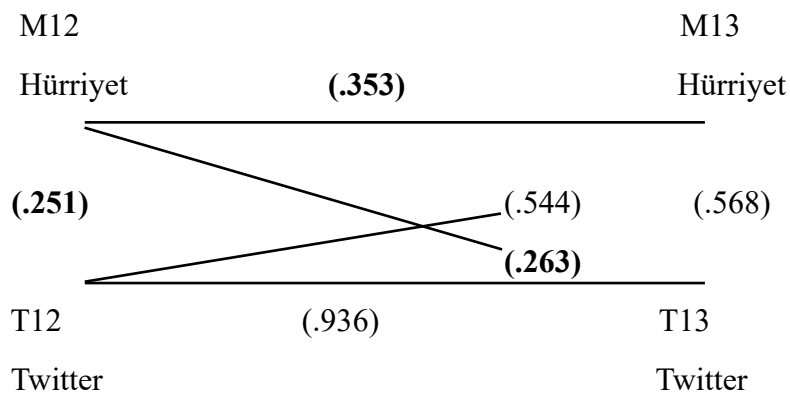
Rozelle-Campbell Baseline= .397

Day 5&6



Rozelle-Campbell Baseline= .366

Day 6&7



Rozelle-Campbell Baseline= .289

Note: Bold type means the correlation is not statistically significant.⁵

⁵ The table 2 shows six cross-lagged panels designed to test the hypothesized relationship between media between days. Each panel has six correlations in total consist of two pairs of three different sets of correlations.

Conclusion

Through a series of analyses this study determined that there is no clear first-level agenda-setting effect between *Hürriyet* and Twitter. In this study, only one out of 13 panels showed intermedia agenda-setting effect which was from Twitter to the *Hürriyet*'s website. In the rest of the panels, no clear agenda-setting effect was detected. However, those panels also had some evidence of influence which were mainly from Twitter to *Hürriyet*. Also, there were some instances where the influence was from *Hürriyet* to Twitter and some instances where the influence was mutual.

The results found to be similar to Kushin's (2010) study in which he determined some influence, but no proof of agenda-setting effect between media. Therefore, I can suggest that even though social networks have a huge potential to become an agenda-setter in the new media landscape, with this very study, the fact that the first-level agenda-setting effect between social networks and online mainstream media doesn't occur, became a global fact, regardless of the freedom level of media. In other words, as of now, the level of influence between online mainstream media and social networks appears to stay parallel amongst countries where the press is both free and not free.

Despite the fact that the research did not find a clear first-level agenda-setting, the influence of Twitter on news media cannot be underestimated. The results indicate the growing influence of Twitter on shaping the issues on mainstream media agenda in Turkey despite the fact that the media is restricted. For instance, the weak, but only intermedia agenda-setting effect which occurred on the Day 5 panel shows that the social networks could be more influential to the news media on a relatively less busy day in terms of the news agenda of that very day. If Turkey's agenda on that day was less intensive, the proved effect could've been much stronger.

On the other hand, there is a large spectrum of media platforms which seem to be influencing the news media today. The social networks seem to be one of the factors that could impact the news media. The obvious influence of the social networking sites should be watched closely in the near future.

Limitations and Future Research

Having used a purposive sampling method, this study examined two specific platforms; an online version of a newspaper, *Hürriyet* and social networking and micro-blogging site, Twitter. Having justified the sampling method before, the results derived from this research cannot be generalized to all mainstream and social media. That is the reason why, any future research should also take other type of conventional media platforms into account; such as broadcast media, as well as different social networking sites; such as Facebook. A future study should also look into the second-level agenda-setting effects between conventional media and social media questioning whether or not the attribution of a message on conventional media would have any impact on the tone of the messages on social media, and vice versa.

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