THE MATHEMATICAL RELATIONSHIP BETWEEN THE LEAD AND BODY LENGTHS, AND THE DEGREE OF SATISFACTION ATTAINED FROM THE BOTH SECTIONS OF THE NEWS ARTICLES PUBLISHED IN NEWSPAPERS: CASE STUDY; TURKISH DAILY ONLINE NEWSPAPERS.

Fahme Dabaj, Agah Gumus
Eastern Mediterranean University

Abstract

The leads in newspaper articles and readers' perceptions of these, in terms of length, have been studied and analyzed in related literatures.

The reason for this study is to study the relationships between the lead sentence and the body in newspaper articles considering reader satisfaction then formulizing it into mathematical equations.

In the study, daily Turkish online newspapers have merely been used to measure the degree of reader-satisfaction attained by the lead and body sections of the articles in online newspapers, considering their length.

After applying statistical methods, correlation and regression, to the findings, the study revealed that reader satisfaction could be measured, that certain mathematical formulas can be derived at from the body length using the lead length, and from thereon, using both body and lead lengths, we can thereon formulize reader -satisfaction.

Keywords: Lead, body, online newspapers, readers' satisfaction

Introduction

In the preparation of the news on any event, it is immensely essential to consider the length of the lead and the body sections in order to occupy the optimum space thus give maximum satisfaction to the readers.

The lead length should not be less than twenty or greater than forty words or it becomes very difficult and carries the risk of not being understood completely by the readers. According to Fedler F., et all (1997) "A better average would be 18 to 20 words". However, Lorenz, A. L., Vivian, J. (1996) said that it should be less than or equal to 40. Therefore; the 5W+1H rule (Who, When, Where, What, Why and How) should not be overlooked, and the lead section should summarize the news-related information.

The detailed section of the news (body) should also have an optimal length. Short body sections that give the same information, as the lead section, or that are far longer than the required, do not contribute towards a better understanding of the readers'. On the contrary, they completely waste time and recourses. It is, therefore, of utmost importance, to form a relationship between the lead and the body sections, in terms of length and reader- satisfaction, in the quest for optimal length and satisfaction of the news before it has ever been published.

Aim of the study

The study searches the relationships between the lead and the body sections of the news published in the online daily newspapers, taking their word count and the degree of the reader- satisfaction into consideration.

Based on these relationships, the study aims at searching for a mathematical relationship between the lead and the body lengths and the degree of reader- satisfaction related with the news.

Literature Review

Mainly, a news story comprises two sections: the lead and the body. According to the American Heritage Dictionary of the English Language, the lead or the lede is the introductory part of a news story, in other words, the first sentence. Similarly, the lead is the opening paragraph of an article, essay, news story or book chapter as defined in Wikipedia, the free encyclopedia.

The lead, which gives the main idea, usually originates with the headline or the title and precedes the main body of the article. Since the most important part of the news story is grabbing the attention of readers, the lead then is the most important sentence in the news. It is essential that the lead sentence(s) should answer who, what, where, when, why, and how (5W and H) questions almost to a full extend.

According to Aram, the lead sentence(s) should be effective, short and appropriate, in other words, to the point; otherwise, the readers skip it. He further states that the lead should reflect the mood of the story in essence. He categorizes the lead into 12 types:

i. Straight lead (Summary lead)
ii. Descriptive lead
iii. Quotation lead
iv. Question lead
v. Personal lead
vi. You' lead (Direct Address lead)
vii. Contrast lead
viii. Delayed lead (suspended interest lead)
ix. Blind identification lead
x. Anecdotal lead
xi. Gag (funny) lead
xii. Literary allusion lead

Straight lead (or Summary lead) is essential that the lead is creative and tell the reader what they are looking for. A good lead usually combines the inverted pyramid style with the most important facts. The reader should be able to get the insight of the story solely by reading the lead only.

Journalists who are pressing for time usually use this lead. Here the attention is attracted by concentrating on a brief, to-the-point lead sentence and developing details later in the story.

Cartridge lead, which is another variation of summary lead, is short and contains a single news incident which will expand later in the story. This lead has action and color, and makes the lead fast moving.

Descriptive lead describes the event rather than telling what the event is about.

Quotation lead adds drama, pathos, humor, astonishment, or other factors to the lead. It is the documentation for a lead and should be used immediately after a paraphrase that summarizes them. Here paraphrasing the verbatim quotation permits the removal of unnecessary words. But if a verbatim quotation itself is very important or interesting, it can be the lead itself.

Question lead is usually not favored by many editors because people read newspapers to get answers, not to be asked questions. However, the level of provocation of the question may make it a lead.

Personal lead requires the use of the first person singular in the lead, which is discouraged except for a columnist or such, privileged writers.

'You' lead (or Direct Address lead is for making a personal appeal to the reader involved in a complicated situation. The second-person approach helps involve the reader and capture his/her attention.
Contrast lead divides the lead into two sentences and the first refers to the humble beginning and the second to the hero's latest triumph. The aim is to break the monotony.

Delayed lead (suspended interest lead) is presenting the news info in an interesting way so that an ordinary item stands out. The reader must read until the end of the story to get the whole picture.

Blind identification lead is used when the person in concerned is not well known and the other salient facts that identify the person are more important. eg. Saying" An 80-year-old woman" instead of giving her name.
Anecdotal lead is used when the anecdote is bright and applicable. It attracts the readers' attention that might not do so if it were routinely written.

Gag (funny) lead is when a journalist writes a funny story while putting up the saddest face in a newsroom. Journalistic humor requires the skilled and practice.

Literary allusion lead is similar to the construction of a nursery rhyme. The body gives the important information while educating and entertaining. It ties the audience to the subject emotionally. The ending wraps up the story and comes back to the lead, usually with a quotation or a surprising climax. (I. Arul Aram http://www.angelfire.com/nd/nirmaldasan/journalismonline/tol.html)
        The body provides vital information while it educates, entertains, and emotionally ties an audience to the subject. The ending will wrap up the story and come back to the lead, often with a quotation or a surprising climax. Important components of the body of a feature story are background information, the thread of the story, transition, dialogue, and voice. (http://www.media-studies.ca/articles/feature.htm)

Length and strength of a News Story
The length and the strength of the news story should not be confused. Length and strength do not necessarily indicate corresponding news information. For example, some stories on major issues may have leads written in a few sentences, while very minor stories may have leads occupying a lot of space. However, it is usual for stronger stories to be given in more detail.
(http://www.thenewsmanual.net/Manuals%20Volume%201/volume1_06.htm)

Lead Length
There has been a lot of research made regarding the lead length and many conclusions attained, revealing different outcomes with slight differences.
        Stone, G. (2000), in his research, stated the lead length as ≤ 32.2, and taking this as basis, in a similar study, Itule B. D., et all (1997), Lanson J., Fought, C. B. (1994), Mencher, M. (1997) and Rich (2000) gave lead length as ≤35.
        Stone, G. (1992) and Keeble, R. (1998), however, defined lead length as ≤ 30 words.
        Others defined the lead length as ≤ 25 for Brooks B. S., and Pinson, J. L., (1999), 20-25 for Metz (1991), ≤ 30 for Stone, G. (1992) and ≤ 40 for Lorenz A L., Vivian J. (1996).
        Other studies on lead length suggest that the lead length should be kept short and only summarize the news. For example, Flesch, R. (1962) and Gunning, R. (1952) said that the lead should not exceed an average of 19 words.
        Danielson, W. A., Lasorsa, D. L. & Im, D. S. (1992) identified lead length as an average of 25 words based on their research on multitude of newspapers.
        Stapler, H. (1985), on the other hand, recommended that the lead should not be more than a sentence and based on his research on varied news in different newspapers, he concluded it to be 26.1 words. He further stated that long Lead sections make it difficult for the reader to comprehend it fully.
        Collins, S. J., (2003) in their research predefined Lead length as 27.3.
        In all these studies, the Inverted Pyramid Structure was used in giving the news and the lead section had some or all of the 5W+1H components.
        It has been observed that many approaches exist in the researches made on the lead length. Some studies supported the maximum number of words used in the lead whereas others supported it to be kept at a minimum. Nevertheless, some others stated it to be kept in between certain values. For example, Fedler, F., et al (1997) recommended a good value to be as 18-20 words.

Limitations of the study
All the news comes from the online newspapers only
The online newspapers are only Turkish online newspapers
All the news has the 5W+1H rule
All the news consists of the Lead and Body sections
All participants used in this study are from the Faculty of Communication in the Eastern Mediterranean University

Population and Sample
In this study, 200 different news articles, published throughout the year 2011, from 5 most popular daily Turkish online newspapers, were randomly selected.

Methodology

Aiming to measure reader- satisfaction and perception of the news, each article, is read by a random sample of twenty students selected from different departments and different classes of the Communication Faculty in the Eastern Mediterranean University.

After reading the news, each student is asked to rate, his/her own satisfaction on a scale of one to ten based on the lead and body sections of the news separately.

The correlation technique is used to find the type and the degree of the relationship between the following:

Lead length and body length (L_L & B_L),
Lead satisfaction and body satisfaction (L_S & B_S),
Lead satisfaction and body length (L_S & B_L), and
Lead length and body satisfaction (L_L & B_S).

Moreover, the linear regression technique is then applied to find the possible mathematical formula between the above-mentioned relationships.

Analysis and Findings

Based on the data collected from the students, the following average figures are obtained;

Table 1: The averages & standard deviations of the collected data

	Average	Standard Deviation
Lead Length (L_L)	34.38 words	13.72
Body Length (B_L)	227.23 words	31.32
Lead Satisfaction (L_S)	89.05 %	2.69
Body Satisfaction (B_S)	29.53 %	3.48

As shown in the above table, the lead sentence of the Turkish online news satisfies the readers by (L_S = 89.05%).

According to the lead satisfaction, the maximum expected satisfaction rate (B_{ES}) is obtained from the body can be calculated as

B_{ES} = 100 – L_S = 100 – 89.05 = 10.95 % ………...………………………………… (1)

According to the readers' satisfaction obtained from the body, which is 29.53%, the actual satisfaction obtained from the body (B_{AS}) is calculated as

B_{AS} = B_{ES} * B_S / 100 = 10.95 * 29.53 / 100 = 3.23 % …………………………………………………….. (2)

So actual body satisfaction (B_{AS}) ranges from 0% to 3.23%

In this study, therefore, the full satisfaction (F_S) realized by the readers about the news revealed from the perspective of both the lead and body satisfactions

F_S = L_S + B_{AS} = 89.05 + 3.23 = 92.28 % …………………………………………………………………… (3)

Then the correlation coefficients calculated for each of the combinations of the lead length (L_L), body length (B_L), lead satisfaction (L_S) and actual body satisfactions (B_{AS}) is as follows;

Table 2: The Correlation Coefficients between variables

	Correlation Coefficient (r)
Lead length & lead satisfaction (L_L & L_S)	0.51
Lead length & actual body satisfaction (L_L & B_{AS})	-0.48
Body length & actual body satisfaction (B_L & B_{AS})	0.18

As shown in the table above, there is an inverse correlation between the lead length & the actual body satisfaction with a correlation coefficient value of -0.48. This value indicates that the more words used in the lead section the lower is the actual satisfaction obtained from the body section, or vice versa.

Furthermore, there is a direct correlation between the lead length & lead satisfaction with a correlation coefficient value of 0.51. This value indicates that the more words used in the lead section, the higher the satisfaction is, or vice versa.

Similarly, there is a direct correlation between the body length & body satisfaction with a correlation coefficient value of 0.18. This value indicates that the more words in body section the higher satisfaction provided, or vice versa.

Using the collected data and the above-mentioned figures, we can establish the regression line formulas for the following as;

Lead length (L_L) and lead satisfaction (L_S) L_S = 0.10 * L_L + 85.61   ………………………………… (4)

Lead length (L_L) & actual body satisfaction (B_{AS}) B_{AS} = -0.12 * L_L + 7.72   ………………………………… (5)

Body length (B_L) & actual body satisfaction (B_{AS}) B_{AS} = 0.02 * B_L - 1.26   ………………………………… 6)

Conclusion

Taking into consideration the equations (5) and (6), and applying them to body length (number of words) (B_L) in terms of the lead length (L_L), the result for the body length (B_L) equation will be as follows;

$$B_L = -6 * L_L + 449$$

Using equation (6), with respect to that actual body satisfaction (B_{AS}) ranges from the minimum value of 0% to the maximum value of expected body satisfaction (B_{ES}) 10.95% which is calculated in the equation (1), the body length (B_L) ranges from a minimum value of 63 words to a maximum of 610.5 words.

However, according to the related literature, the lead length (L_L) should be a maximum of 32.2 words; therefore, the recommended maximum body length for the online newspapers news can be calculated by using the above equation as 255.8 words.

The body length, therefore, should range from a minimum of 61 to a maximum of 256 words. The reader satisfaction from the lead section is calculated using equation (4), the satisfaction from the body section is calculated by using the equation (6), and the full satisfaction (F_S) (in percent) obtained from both sections (Lead and Body) is calculated by summing up the results of the two equations in terms of lead length (L_L) and body length (B_L).

$$F_S = 0.10 * L_L + 0.02 * B_L + 84.35$$

Finally, to maximize the readers' satisfaction and writing the optimal word length in the body section of the Turkish online newspapers, the body word length and the readers' satisfaction can be calculated and reorganized by simply counting and arranging the number of words in the lead sentence.

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