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Online News Media Impact on Disaster Response: October 26, 2010 Indonesian Disaster Case Study

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October 26, 2010 Indonesian Disaster Case Study

Disaster Risk Reduction (DRR) in the Americas
Latin American and Caribbean Center
Florida International University

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This paper reflects a research project on the influence of online news media (from print, radio, and televised outlets) on disaster response. Coverage on the October 2010 Indonesian tsunami and earthquake was gathered from 17 sources from October 26 through November 30. This data was analyzed quantitatively with respect to coverage intensity over time and among outlets. Qualitative analyses were also conducted using keywords and value scale that assessed the degree of positivity or negativity associated with that keyword in the context of accountability. Results yielded insights into the influence of online media on actors' assumption of accountability and quality of response. It also provided information as to the optimal time window in which advocates and disaster management specialists can best present recommendations to improve policy and raise awareness. Coverage of outlets was analyzed individually, in groups, and as a whole, in order to discern behavior patterns for a better understanding of media interdependency. This project produced analytical insights but is primarily intended as a prototype for more refined and extensive research.

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Abstract: This paper reflects a research project on the influence of online news media (from print, radio, and televised outlets) on disaster response. Coverage on the October 2010 Indonesian tsunami and earthquake was gathered from 17 sources from October 26 through November 30. This data was analyzed quantitatively with respect to coverage intensity over time and among outlets. Qualitative analyses were also conducted using keywords and value scale that assessed the degree of positivity or negativity associated with that keyword in the context of accountability. Results yielded insights into the influence of online media on actors' assumption of accountability and quality of response. It also provided information as to the optimal time window in which advocates and disaster management specialists can best present recommendations to improve policy and raise awareness. Coverage of outlets was analyzed individually, in groups, and as a whole, in order to discern behavior patterns for a better understanding of media interdependency. This project produced analytical insights but is primarily intended as a prototype for more refined and extensive research.

Keywords: Online Media Outlets, Social Media, Text Analysis, Data Visualization, Disaster Response, Disaster Management

Introduction

I NDONESIA'S CATASTROPHIC EVENT of October 26 began as a tsunami, but intensified with a domino effect as multiple disasters impacted the region in quick succession. Unfortunately, this phenomenon is an inherent characteristic of Indonesia's geography, ensuring that similar events will befall the country in the future. Therefore, it is critical that the anatomy of disaster response be understood in order to better prepare for and respond to dark periods in the country's future.

The press has an undeniable impact on disaster management, as it has on many public events it covers, and this effect has intensified with the popularity of the internet and online news outlets. These outlets, the public that reads their products, and the officials who influence disaster management policy are engaged in a continuous, multi-party dialogue that is complex and kinetic. This is a generally accepted reality, but the manner in which this global conversation shapes disaster management has yet to be understood.

Online press coverage has accelerated and broadened the dissemination of information on both the event itself and the human reaction. It has also energized the journalist-public official-private citizen dialogue. No longer is the influence primarily uni-directional, with the policy-makers informing the media through official interviews and press releases, and with journalists simply reporting events that they see for publication in a static news article updated daily, at the most. Disaster management policies, their implementation and effects, are covered in a 24-hour news cycle. Thus, civic leaders and policy-makers are subject to a constantly updated "report card" on their performance both in public and behind the scenes,

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and usually in high-pressure contexts. The online news delivery mechanism has dissolved linearity, adding complexity and nuance to the cause and effect relationship among policy-makers, the media, and their readership.

The dearth of analytical studies is due in part to the youth of the phenomenon. It is also likely due to the complexity and scale of the task. There are many news media formats,[1] and the number of online news sites is enormous. Reporting is updated so frequently, sometimes every few minutes in the immediate aftermath of a disaster, that any assessment qualifies as an attempt to "hit" a moving target. Yet, online news media's influence is of sufficient magnitude that it demands in-depth analysis if one wishes to gain a substantive understanding of how disaster management policy and implementation are shaped.

This project addresses a small aspect of this enormous task. It is hoped that by analyzing this data using selected software, that a methodology and preliminary assessment be presented that may point the way forward for future, more sophisticated endeavors.

Related Literature

Constructed environments are no longer limited to the physical space—they are online, as well. While their online counterparts are one of many variables that directly impact the physical environment, this influence is significant. Hence the growth in use of text analysis software in the growing body of research that endeavors to comprehend this phenomena. Interest in this research tool has produced an enormous quantity of literature in a relatively brief timeframe, so much so that a comprehensive literature review could constitute a paper in and of itself. In fact, this has occurred repeatedly in technical overviews, as researchers have been challenged to keep apace with what is just one of many techniques employed in the analysis of the online environment—automated text analysis. Other research is conducted through interdisciplinary discussions that result in white papers. Finally, news media's ability to shape public response to natural disasters has drawn the attention of stakeholders in disaster risk and recovery fields. While these research trajectories do not precisely address a topic so focused as that explored in this paper, they share key themes and in some cases use text analysis tools to quantify sentiment.

Automatic Sentiment Analysis in On-line Text (Boiy, et al., 2007) is an overview of some of the tools used for online sentiment analysis. Among these are Princeton University's WordNet, an English-language lexical database. Words in the database are organized into groups of synonyms that are themselves conceptually linked. Word searches return information on these conceptual connections. The authors also assess Weka, an integrated library of algorithms that can organize data according to a variety of clustering schemes, filters, and statistical methods.[2]

Distributed Influence: Quantifying the Impact of Social Media (Brentwood and Edelman, 2008), is the published result of an interdisciplinary roundtable organized by Edelman, a

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[1] The copious amount of data requires that this project be limited to online news articles. Thus, other formats, such as blogs and reader online article comments have been excluded. These will be considered for further research on the topic using the 2010/2011 Australia flood catastrophe as a case study.

[2] Boiy, Erik. Hens, Pieter. Deschacht, Koen and Marie-Francine Moens. 2007. Automatic Sentiment Analysis in On-line Text. ELPUB2007.Openness in Digital Publishing: Awareness, Discovery and Access-Proceedings of the 11th International Conference on Electronic Publishing held in Vienna, Austria 13–15 June. Edited by: Leslie Chan and Bob Martens. ISBN 978-3-85437-292-9, pp. 349–360 June. http://elpub.scix.net/cgi-bin/works/Show?138_elpub2007. Accessed 22 January 2011.

public relations firm. The white paper is the result of an effort to quantify the influence of social media on public discourse. Though social media and online news media hare a breadth of reach and influence potential, they differ in both mechanism and function. This difference is evident in the methodology described in the white paper, in that blog linkages and other variables such as page ranking were analyzed to produce an influence metric called a social media index. This methodology would not have the same utility when applied to interactions among online news media, policymakers, and the public, because the links do not exist solely in online connections, and are thus more difficult to quantify. In fact, one of the goals of this project is to identify the links themselves.[3]

Anup Shah's *Media and Natural Disasters* [4] examines news media influence on natural disaster response. This research seeks to understand differences in coverage among media outlets as well as sentiment. Shah examines why the news media prioritizes disaster coverage, and how the variation in coverage affects variables such as humanitarian aid. However, the author does not attempt to develop a metric quantify these behaviors.

Analytical Technique

This project entailed both quantitative and qualitative assessments. Since informative results from quantitative analyses can only be obtained if the data gathering is comprehensive, the Indonesian event was selected because the media coverage is limited in scope and duration (unlike January 2010 Haiti disaster, which continues to garner enormous worldwide coverage). Online news articles from domestic and foreign outlets were gathered from October 26 (the date of the initial catastrophe) through November 30. A larger time span would have been unmanageable—at some time the data must be formatted for analysis with the software, evaluated, processed by the software, and finally analyzed.

Due to the uncharted nature of the project, in that the size of the dataset was unknown, initial data gathering was limited to four large, syndicated outlets: Associated Press (AP), British Broadcasting Corporation (BBC), Cable News Network (CNN), and Thompson-Reuters (Reuters). This was done in an effort to assess the broadest coverage. The dataset was expanded to include other large-circulation outlets, such as Agence France Presse (AFP), IRIN News, Mail & Guardian Online, New York Times, National Public Radio (NPR), and Voice of America. Finally, articles from Asia-based outlets were examined for more localized perspectives. These include Antara News, Bali Times, Bernama, Jakarta Globe, Jakarta Post, Peoples Daily Online, and Tempo Interactive. A total of 17 outlets with English language editions were surveyed.

The quantitative portion of the study was conducted to gain insights into coverage patterns and cycles from both temporal and comparative perspectives. Coverage arcs were analyzed in terms of how the coverage changed with the passage of time and the life cycle of the disaster. Comparisons of coverage arcs between outlet types were examined, as well. It was initially suspected that an inter-outlet dialogue was present, though to what extent, among whom, and its nature were unknown. This avenue of research was pursued by dividing the

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[3] Brentwood, Jonny and Edelman. 2008. *Distributed Influence: Quantifying the Impact of Social Media*, Edelman white paper. http://technobabble2dot0.files.wordpress.com/2008/01/edelman-white-paper-distributed-influence-quantifying-the-impact-of-social-media.pdf accessed 15 Jan 2012

[4] Shah, Anup. 2005. "Media and Natural Disasters". Globalissues.org. 23 October. http://www.globalissues.org/article/568/media-and-natural-disasters. Accessed 15 January, 2012.

outlets into groups and running quantitative analyses based on these groups, of which several levels were examined.

The first level is termed "circulation". The "core" group consists of AP, BBC, CNN, and Reuters. The "Misc" (miscellaneous) group consists of AFP, IRIN News, Mail & Guardian Online, New York Times, NPR, and Voice of America. The "regional" group consists of Antara News, Bali Times, Bernama, Jakarta Globe, Jakarta Post, Peoples Daily Online, and Tempo Interactive.

Analyses were also generated on a further subdivision, termed "region". The "Asia" region consists of Bernama and Peoples Daily Online. The "domestic" region consists of Antara News, Bali Times, Jakarta Globe, and Jakarta Post. The "EUR" region consists of one outlet, AFP.[5] The "SA" region consists of Mail & Guardian Online. There is a separate region entitled "UN" for IRIN News, as it is produced by the United Nations. The "US" region includes United States-based outlets, such as AP, CNN, New York Times, and NPR. The "UK" region contains BBC and Reuters.[6] The "Other" region also contains only one outlet, that of Voice of America News. Voice of America is a unique category, as although it is a product of the United States, its circulation is limited to foreign audiences.

Further analyses were done without grouping the outlets. Coverage was assessed on all outlets in order to detect general coverage patterns of the disaster. News coverage per outlet was examined as well, in order to detect any potential patterns that would not be seen via the group categorizations.

The qualitative aspect of the project was by far the most labor intensive, as this entailed the selection, detection, and evaluation of keywords throughout the body of the texts. Keywords were selected to determine patterns of accountability, as this subject is the most likely context in which news media would affect all the phases of disaster management, from preparedness to recovery. The keywords were selected from a core set provided by Juan Pablo Sarmiento, director of the Paul C. Bell Disaster Risk Management Program at Florida International University and co-director of the Disaster Risk Reduction Program. The keyword set, like the project itself, is prototypical and will be refined as the project develops. A preliminary dataset was gathered, and its articles were examined in detail to ascertain which keywords should be included, and which keywords were redundant or superfluous and thus should be excluded. The keyword set follows:

> acceptable, account, accusing, accuse, acknowledge, advocate, agree, apology, argue, assess, audit, blaming, blame, cause, causing, complain, constitution, contribution, contribute, declare, defend, deserve, desperate, disagree, distort, deficient, effort, ethical, exacerbate, exceed, excuse, explanation, fail, foresee, fraud, horrible, horror, improve, investigation, irreparable, law, loot, missing, mistake, moral, outstanding, overcome, overcoming, policy, political, principle, prioritization, regain, regulation, research, responsible, responsibility, wonderful, worst, panic, refugee, work, warn, communicate, communication, promise, promising, time, aware, urgent, predict.

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[5] No other European outlets appeared in this group because AFP was the only such outlet detected in this research that covered the event with some regularity in an English language edition. Thus, much to this researcher's regret, time simply did not permit a search for more European outlets. Similar limitations affected other "groups" or "region" labels that comprised only one outlet.

[6] Thompson-Reuters is owned by a Canadian corporation, but as it is based in the UK, it is categorized in that group.

Keyword usage was evaluated in terms of frequency and quality. Frequency—keyword count—would provide insights on an article's emphasisin terms of subject matter. Quality—keyword value—would reveal if and how the article is slanted and the human subjects' assessment of the disaster response process. Following qualitative arcs might provide insight as to how quickly and to what extent news coverage impacts the response cycle, and whether or not certain aspects of the response gain in intensity as a result of focused media coverage.

Objective qualitative analyses are difficult as such examinations do not easily lend themselves to quantitative results. This problem was approached by developing a value scale in which each keyword appearance was assigned a number based on the context in which it appeared, and the results graphed. A value of 0 reflects the absence of the keyword. A word given the value of 1, or "very negative", is assigned if the keyword is found in the context of a negative statement with no qualifying language, and is often an opinion statement. An example of such a statement would be a reference to the utter failure of an official or procedure, or a statement of general blame with no mitigating sentiment. A value of "2", or "somewhat negative", is assigned if the keyword is found in the context of a negative statement that refers to the failure or inadequacy of a mechanism or individual, but includes some qualifying (mitigating) comments. The statement is generally not as emotional in quality as a value 1 statement. A value of "3", or "neutral", is assigned if the keyword appears in an informative or otherwise neutral context. Examples of such statements would be background information or informative statements, such as those describing the behavior of an earthquake. A value of "4", or "somewhat positive" is assigned if the keyword is found in the context of a positive statement that refers to the success or otherwise assesses positively the efforts of individuals, policies, or procedures, but does not indicate total success, or is accompanied by mitigating language. Examples of such statements include recognition of rescue worker dedication. Though the response personnel are not able to rescue everyone, their behavior is assessed positively. Finally, a value of "5", "extremely positive", is assigned to keywords in entirely positive statements. Such statements include the flawless operation of equipment or procedures, or statements of thanks and appreciation.

The quantification of qualitative data necessitates strict adherence to these rules, and this can occasion a misreading of the data visualizations by those who are not attentive to the implications of this grading system. The caveat lies in the context statement itself. An interview subject may make a statement consisting of a misguided assessment. This can occur as a result of error, hidden agenda, or blatantly false portrayal. Thus, an article reporting on a mechanism's failure might score highly in the graphs because the interview subject is denying a malfunction that might have occurred. The German Indonesian Tsunami Early Warning Systemshares responsibility for maintaining Indonesia's tsunami warning system. Representatives interviewed shortly after the tsunami stated that their system functioned properly, thus categorically denying failures that have been widely reported elsewhere.[7] Therefore, data spikes, be they positive or negative, indicate a closer inspection of the article context, rather than a blanket assessment that disaster response succeeded or failed on that day, or that the press was simply singling praises or slinging arrows on the date in question.

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[7] "Organization says tsunami warning system worked after Indonesia quake". *CNN*.CNN Wire Staff. October 28, 2010. http://articles.cnn.com/2010-10-28/world/indonesia.tsunami.warning.system_1_tsunami-warning-system-indonesia-quake-sumatra?_s=PM:WORLD

Software Selection

This study is the prototypical stage of a broader research project. Thus, analytical tools were chosen with the criteria that they be widely available and user-friendly. A variety of online web tools were evaluated as potential candidates for this research. HyperPo, MAXQDA, Attensity, TAPoR Tools, TAMS Analyzer, TAToo, ClearForest, TextSTAT, TagCrowd, MONK, Visual Text, Word Hoard, and Wordstat, were among those (but by no means all) examined for use in this project. Voyeur and Tableau were deemed the most appropriate choices for this project.

Voyeur was selected as the text processing tool primarily on the strength of two features. Firstly, it accepts the upload of multiple documents simultaneously. Text processing software generally processes documents individually. The project's inputwas "data heavy", in that the volume of articles under consideration was enormous. Thus, text processing by individual article would have been extremely unwieldy. Secondly, Voyeur offers a feature in which keywords and their contexts are output in tabular form. Given that there were 2,134 keyword instances, this proved quite helpful when assigning a value to each occurrence.

Tableau was chosen to perform the data visualization tasks. Like Voyeur, it could process copious amounts of data from multiple documents at once. Furthermore, the research required that media behavior be assessed from different perspectives, using different measurement qualities. Tableau offered flexible data visualization capabilities, as it enabled easy timeline visualization. It also allowed the quantification of keyword values on a y-axis without simply summing them or counting them as individual instances, as many software tools tend to do.

Formatting the Data

The data was processed by Voyeur to yield keyword frequency statistics for each article and to output 15 word context to the left and right of each located keyword in the article. The data was saved to an Excel file for extraordinarily labor-intensive data formatting.

Tables on keyword frequency statistics were supplemented with extra data columns to provide the required detail. Each keyword appearance was listed with its corresponding news article, but these appeared with file type endings that had to be removed manually for readability and consistency. Additionally, each keyword instance had to be assigned a date corresponding to the article in which it appeared. A separate column stated the outlet that released the article. Further classifications had to be done manually as well, since smaller outlets often picked up articles released by larger outlets. The same article might appear several times. This article could not simply be considered redundant and eliminated, because readers would not interpret it as such. It would be read as a product of the smaller outlet. The article would have more impact because of its repeated appearances in multiple outlets. However, the data must be formatted such that these repeated appearances would not be deemed redundant by the software, or the keyword count simply summed because the software was interpreting the data as twice the keyword appearances in the same article. Additional columns designating a different outlet group level for each keyword appearance was also entered manually. Therefore, each keyword instance had its own entry for circulation level, regional level, and individual outlet.

Separate table sets provided quantified interpretations of the qualitative data. These "context tables" consisted of a date for each instance (manually input), a column for the 15

words to the left of the keyword, a column for the keyword itself, a column for the 15 keywords to the right of the keyword, a value column, and a justification column. The values of course, were entered manually, after reading the keyword in context and sometimes the entire article if the context did not provide sufficient information from which to make a judgment. All values other than "3" (neutral) were accompanied by brief comments in the "justification" column in order to provide some insight as to why a keyword was assessed with the given value.

Finally, each table contained a separate column for an altered keyword. Columns entitled "Original_Keyword" contain the keyword as it appears in the article. Columns entitled "keyword" refer to an altered form of the original keyword. This measure is necessary to prevent output of superfluous data. For instance, the software interprets "responsible" and "responsibility" as two separate words. Though this is strictly true, they are the same word from a qualitative perspective, as both refer to the same general concept. Thus, each keyword instance had its equivalent root, or merged keyword which had to be identified and manually entered in a separate column. The merged keyword set follows:

> acceptable, accountable, accuse, acknowledge, advocate, agree, apology, argue, assess, audit, blame, cause, complain, constitution, contribute, declare, defend, deserve, desperate, disagree, distort, deficient, effort, ethical, exacerbate, exceed, excuse, explain, fail, foresee, fraud, horrible, horror, improve, investigate, irreparable, law, looters, missing, mistake, moral, outstanding, overcome, policy, political, principle, prioritization, regain, regulate, research, responsible, wonderful, worst, panic, refugee, work, warn, communicate, promise, promising, time, aware, urgent, predict.

Quantitative Trends

Figure 1 shows the coverage trend for all outlets combined. This provides a general overview of interest on the disaster coverage. There is an overall tapering, but with significant spikes throughout. This is likely attributable to the brief time window under investigation. The largest spike occurs just 2 days following the disaster, which is reasonable, considering that 48 hours allows worldwide interest to develop, yet the event is new enough to deserve widespread attention.
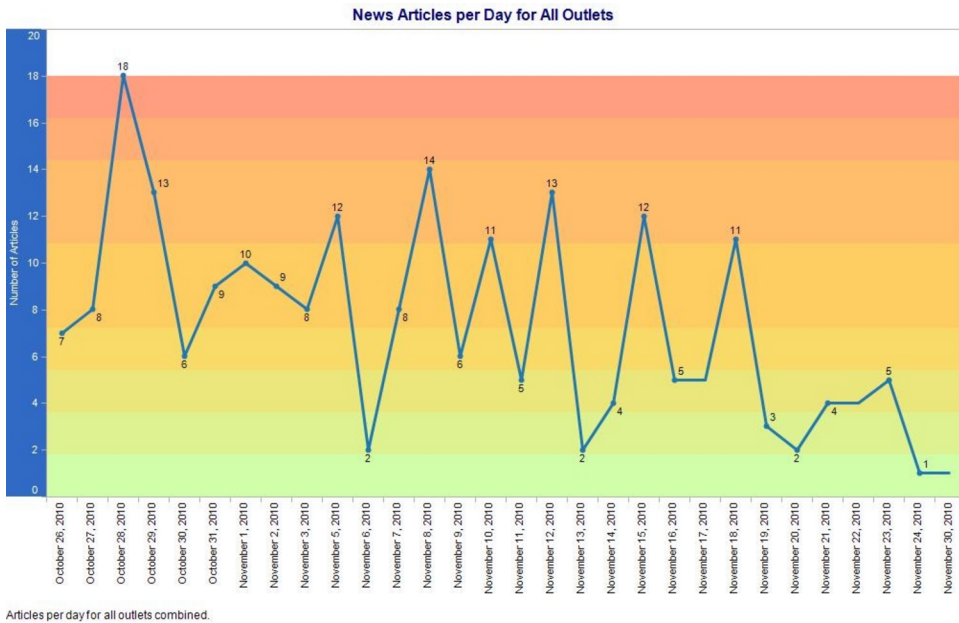
Figure 1

Figure 2 compares coverage among three circulation groups. The most dramatic difference is shown between two groups at each end of the circulation spectrum—the "core" group comprised of the four major outlets and the "regional" group comprised of the domestic outlets.[8] This graph depicts a hint of dialogue that might be transpiring between the major and local ("regional") outlets. While both groups cover the event on the first day, the initial spike appears first by the regional outlets and is echoed by the "core" groups' coverage a day later. From that point onward, the coverage is usually out of phase, with dips in local coverage coinciding with surges by the core outlets. The out-of-phase coverage pattern might be a reflection of local journalists having to grapple with obstacles created by the immediate aftermath of the disaster and are thus unable to continue their work as their offices and residences are in the disaster zone. The points wherein the domestic outlets exhibit heavier coverage than the major outlets may be a result of intense local interest continually driving these outlets to publish updates in an environment in which their ability to function is hampered. As a result, they "pick up" articles released by Reuters, AP, and CNN. This "echo" effect grows synchronized to the day as the month advances, with coverage by the major four outlets dropping off significantly after a spike in coverage on November 15th. Coverage by the regional outlets continues beyond that time but begins to wane until the 30th, where there is a sharp increase. This appears to be another spike in coverage, indicating that data gathering could have continued into December, if time permitted. Doing so might lead to more insights as to the media disaster coverage cycle. Upon inspection of November 30th's articles, it becomes clear that the nature of the coverage changes. November 30 articles are

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[8] The third group, labeled "misc" (miscellaneous), consists of the outlets not included in the first two groups.

weighted toward assessment subjects, as experts are consulted and allegations are made of sensationalism on the part of certain media outlets.

There is a similarity in behavior among the three main outlet categories, with spikes and dips generally coinciding. However, coverage by the non-regional, non-core outlets drops off approximately 2 weeks into the disaster recovery. This observation should be of particular interest to disaster management stakeholders, as it is likely a message that if one wishes to advocate change or call attention to a certain issue, it should be done within the first 2 weeks of a catastrophic event. Of course, the time window varies with the severity of the disaster and the number of people affected. For example, Haiti coverage remains heavy beyond the initial 2 week period, probably because the recovery process is so arduous and the number of participating NGOs is so large.
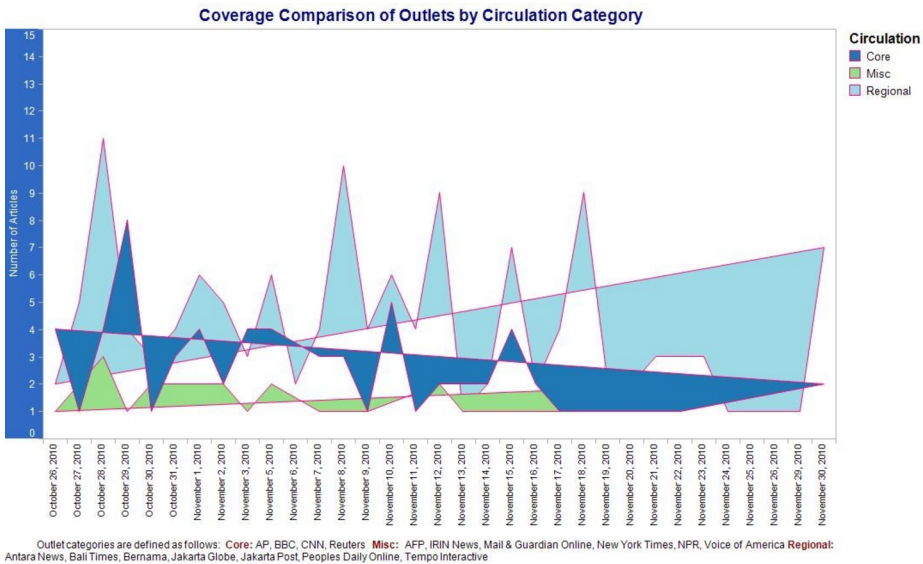
Figure 2

Figure 3 shows news coverage by individual outlet. The behavior of the Jakarta Globe closely follows that of the regional outlets in figure 2, because the Jakarta Globe has a major online presence as an English language regional news outlet. At first glance it appears as though the "big four" outlets do not begin coverage until CNN releases three items on October 29. However, upon closer examination of figure 2, it becomes clear that the major outlets produce four items on October 26, the day of the event itself. Each of the four outlets produces one "headline" article that the catastrophe has occurred. This coverage is obscured in figure 3, which the contribution of each outlet individually. Since they each produce a headline article, the coverage count drops, and they overlap (and thus disappear) on the graph.
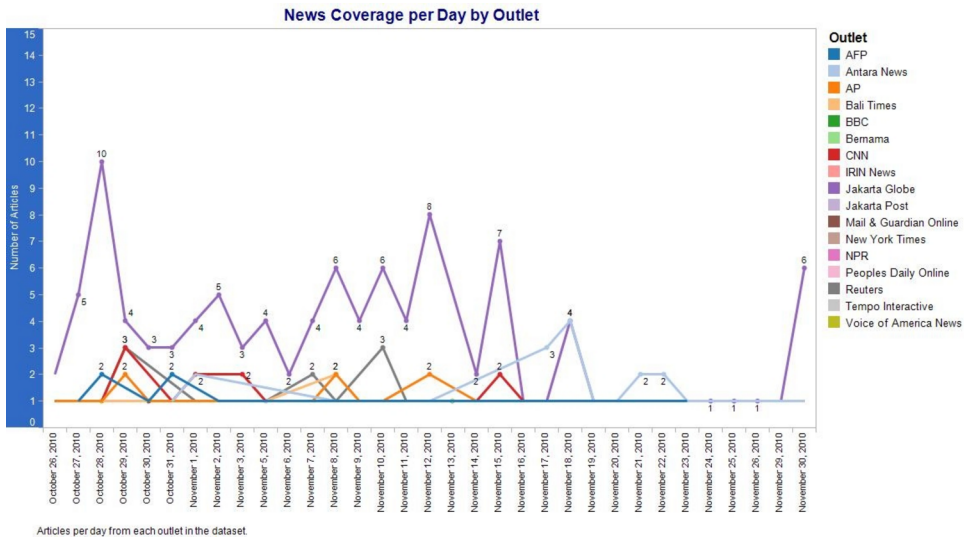
Figure 3

Another area of interest occurs on November 18, when Jakarta Globe coverage disappears from the graph and its trajectory is apparently continued by Antara News, another regional outlet. A bar chart detail (figure 4) of the last 11 days in November reveals that Jakarta Globe coverage does in fact continue, but releases an equal number of articles per day as does Antara News, and thus is obscured on the graph in figure 3. No Antara Globe coverage is detected from the 24th through the 29th. There are several possible explanations, one of which could simply be that the articles were not accessible online at the time that the data was gathered. Alternatively, Antara Globe might have more physical and human resources that are directly affected by the disaster, and the outlet was unable to operate at full strength during that period.
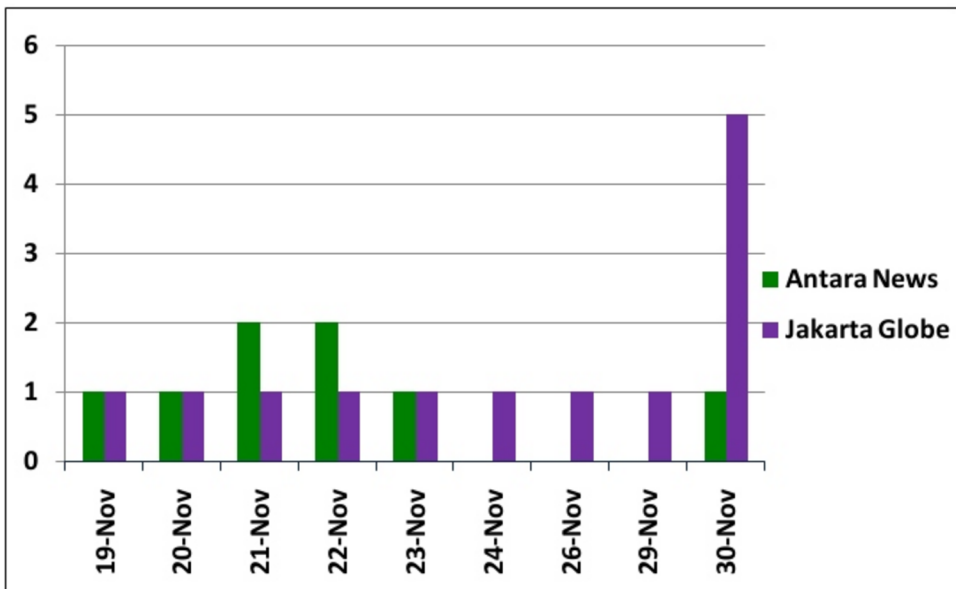
Figure 4

Accountability Keyword Usage

Figures 5 and 6 concern keywords directly related to accountability. Note that figure 5 only reflects the use of the keyword and not the context in which it is used. Thus, it only indicates media focus—not the manner in which the subject was treated. Accountability issues remain fairly constant throughout the month, with the exception of a peak on November 10. This interest is a reflection of two articles by Reuters and Jakarta Globe. The Reuters article deals exclusively with accountability issues,[9] and the Jakarta Globe piece in which volunteers make statements emphasizing their desire to assume responsibility for the recovery process. The spike is pronounced because the keywords appear so frequently in those two articles. This is one of many examples throughout the research that highlights the importance of viewing spikes in the data as occasions for closer inspection, and a caution against drawing conclusions from the graphs alone.

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[9] "Why Aren't Governments Planning for Emerging Threats?" Reuters. 10 November 2010.

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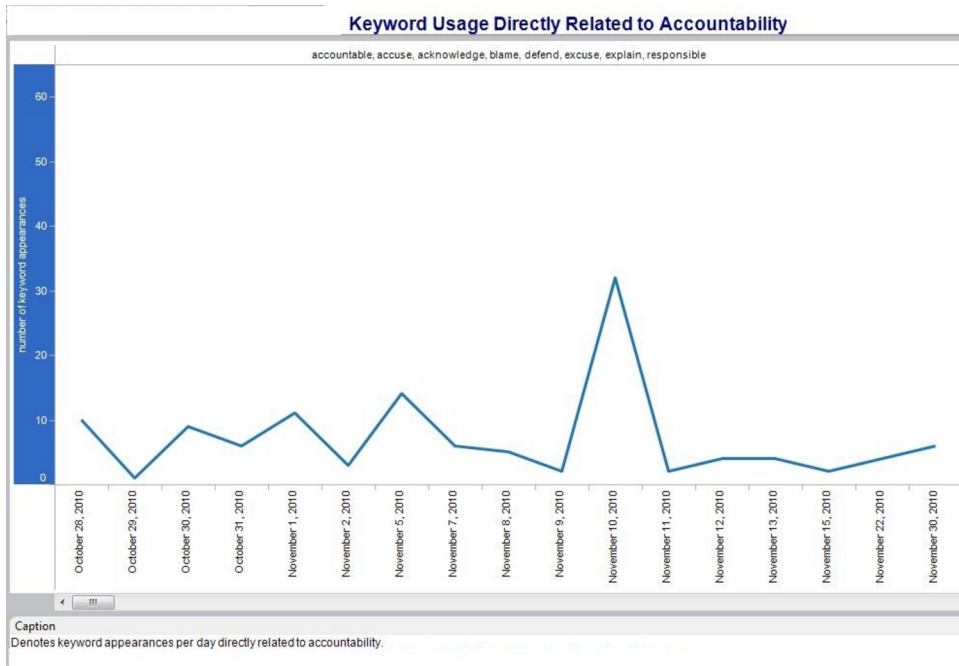
Figure 5

Figure 6 is a breakdown of the behavior of the keywords most directly related to accountability that comprises the grouping depicted in figure 5. The high spike corresponding to the keyword "accountable" cannot be dismissed as a result of coverage intensity alone. Coverage intensity graphs, such as those in figures 2 and 3, show media interest, but heavier coverage occurs on other dates. Thus, on November 10 it is evident that there was keen interest concerning the subject of accountability, though it is not yet clear whether media or public assessment is positive or negative. Such inferences require examination of the qualitative results of this project. However, this data does hint that if disaster risk reduction professionals are interested in improving the manner in which issues of accountability are addressed, their recommendations might likely be heard and given special consideration approximately 2 weeks after the event.[10]

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[10] This inference should be qualified by certain caveats. For example, the time interval might be affected by the type of the disaster (single event vs. a catastrophe that results from accumulated stresses, such as some types of floods). Another possibility is that the proportion of local to international outlets covering an event might be a factor.
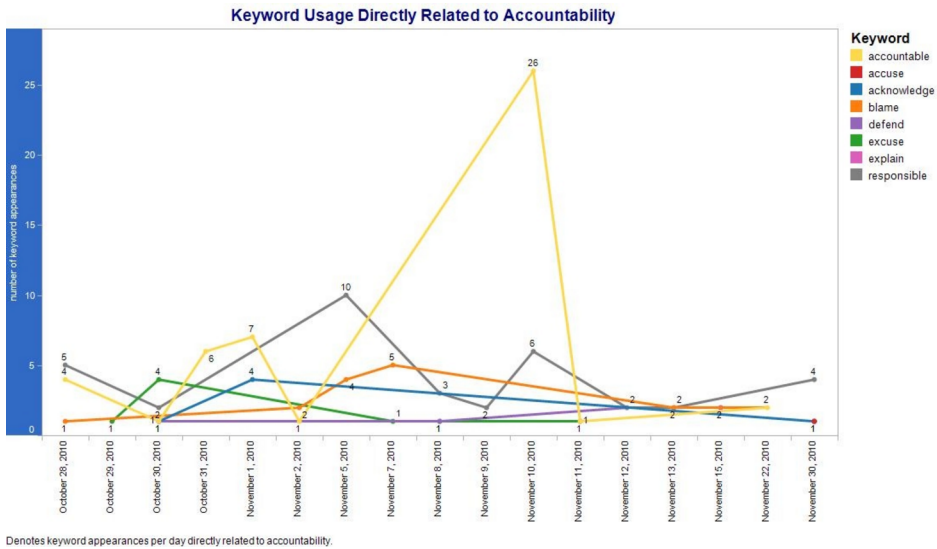
Figure 6

Policy and Law Keyword Usage

Figures 7 and 8 refer to keywords concerning policy and law and enable a more accurate visual interpretation of the data than do the previous graphs. The pronounced spike on November 23 depicts focus articles by the Jakarta Globe, the Jakarta Post, and IRIN News (The UN news outlet) that examine problems encountered during efforts to change zoning laws and improve land use.

The Jakarta Post article details the difficulties involved with the implementation of a relocation plan. Moving residents from danger zones to safe areas brought relocation efforts into conflict with other environmental concerns, as the plan would be impinging on production forests and national parks, where residential construction is illegal.

The IRIN News article described sluggish implementation of disaster mitigation laws that were enacted in 2007. The article reports that only 20 percent of Indonesia's provinces have established disaster management agencies in compliance with the law. A disaster preparedness official explains that poverty and lack of education have made disaster preparedness a low-priority issue.

The Jakarta Globe article contains a fleeting reference to laws, as it describes a regulation concerning the right of infants under the age of 6 months to receive breast milk exclusively. This law does not seem quite as odd when consideration is given to regional sanitation problems.
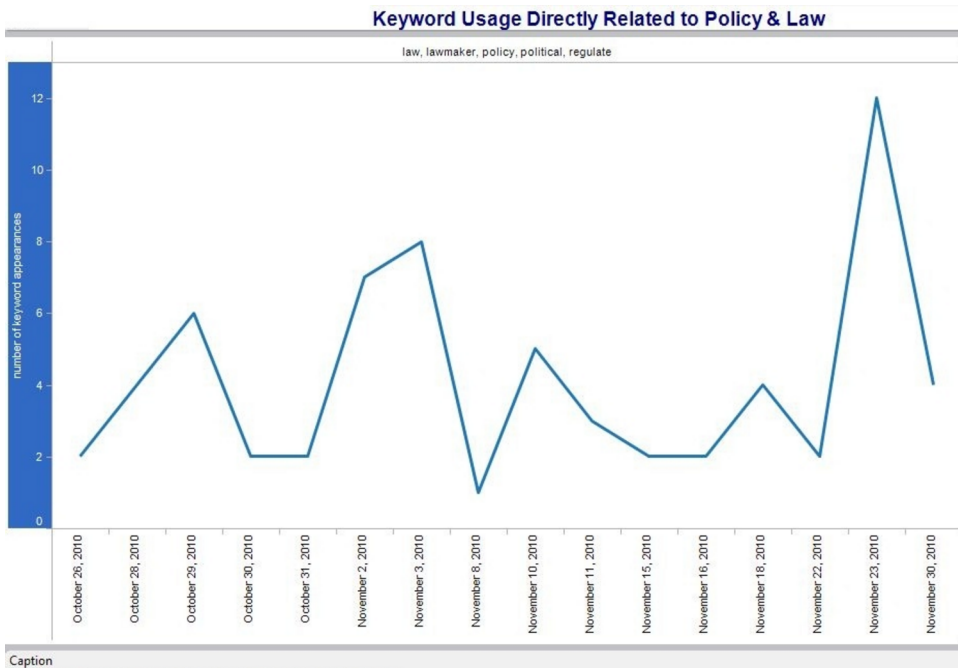
Figure 7
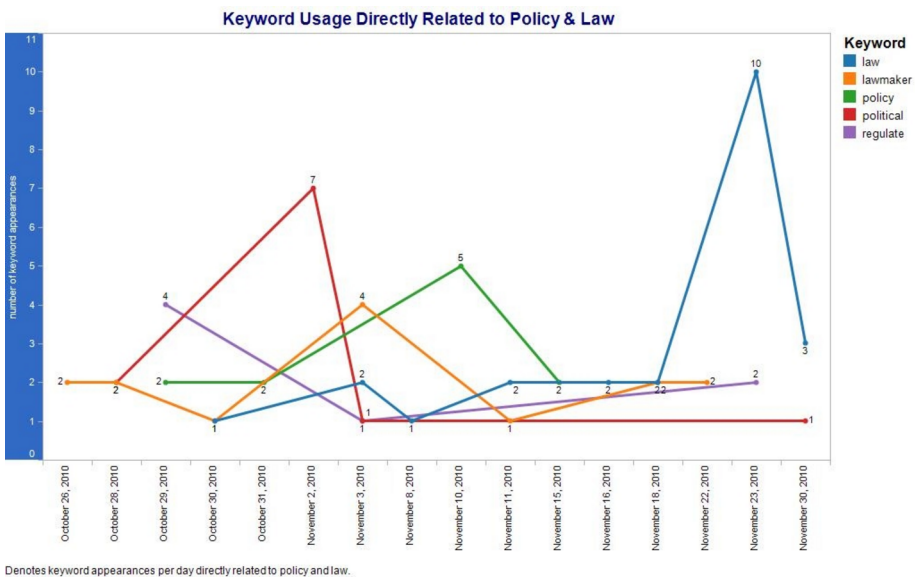
Figure 8

Qualitative Trends

Qualitative assessment entails the designation and analysis of keyword value trends. Though this is potentially the most revealing aspect of the research, keyword value attribution may also be the most contested portion of this study. To that end, numerical values are defined as clearly as possible, though some degree of subjectivity cannot be avoided. Value attribution was not simply designated with respect to the degree of negative or positive use, but was assigned in a context of accountability. However, even with the narrowing of value attribution to considerations of accountability, merely negative or positive value designations would also be problematic. At times, keywords are used to describe negative events, but their meaning reflects positively on the actors. For instance, complaints of misconduct are negative, but they may also be examples in which actors responded quickly and effectively. Keywords appearing in these contexts are therefore assigned positive values.

Furthermore, these judgments are likely not always obvious to the reader and may be controversial calls. For example, keyword contexts in which rescue workers functioned with dedication, yet whose efforts were halted due to physical conditions such as weather or difficult roads, were generally given a value of "2". The negative assessment reflects the lack of needed equipment or training that would facilitate continued operation. Therefore, it can reasonably be inferred that policy-makers might not have assumed responsibility to act with foresight and adequately prepare rescue personnel.

One final caveat to value trend results: Average values are calculated per day but do not reflect the number of articles per day. Thus, one spike might reflect only one article while another might reflect many, depending on the output on any given news day. Therefore, it would be erroneous to infer that low values for several keywords on a given day reflect multiple slamming reports by the press. It could simply be that one article happens to use several keywords in a negative context on a day with light reporting.

General Keyword Value Behavior

Figure 9 displays an overview of all keyword value behavior by all outlets combined. The graph depicts the average value attributed to all keyword used by all outlets in the dataset for that day. Keyword values relating to all aspects of accountability covered in this study are included. The sentiment hovers around the neutral line, which is to be expected from outlets whose primary mission is news delivery rather than advocacy. The tendency is to dip slightly (a mere ½ point) below the neutral line, in keeping with the critically-restrained approach common to mainstream outlets. The trend is slightly upward, but with some erratic spiking from November 24 through the 30th—the last day in which data is gathered.

The high point on the 24th should not be mistaken for global media praise on that day. Upon closer inspection (figure 10) of keyword value trends broken down by circulation category, it becomes clear that general media interest has dipped considerably by both the "core" and "misc" outlet groups. The spike is attributable to Jakarta Globe reporting of a human interest article on "conjugal shacks". The article itself is not very positive, in that the reporting focuses on the failure to inform much of the refugee population of the existence of these conjugal shelters. Thus, the misleading visual representation of the data is only partly attributable to the paucity of coverage. The other problem lies in the choice of keywords. The unusual focus of the article made it unlikely to touch on the keywords generally

used in disaster response contexts. The only keyword found in the article was "time", and the broad, unfocused quality of the keyword (unlike "blame", for instance) meant that it appeared in contexts within the article that would not necessarily capture the tone of the overall piece.

The dip on the 26th (figures 9 and 10) refers to the panicked reaction to a false tsunami text message and the frustration voiced by public officials who experienced difficulty in convincing the panicked population that the text message was a hoax.

Figure 9

Keyword Value Trends by Circulation Category
(average value per day)
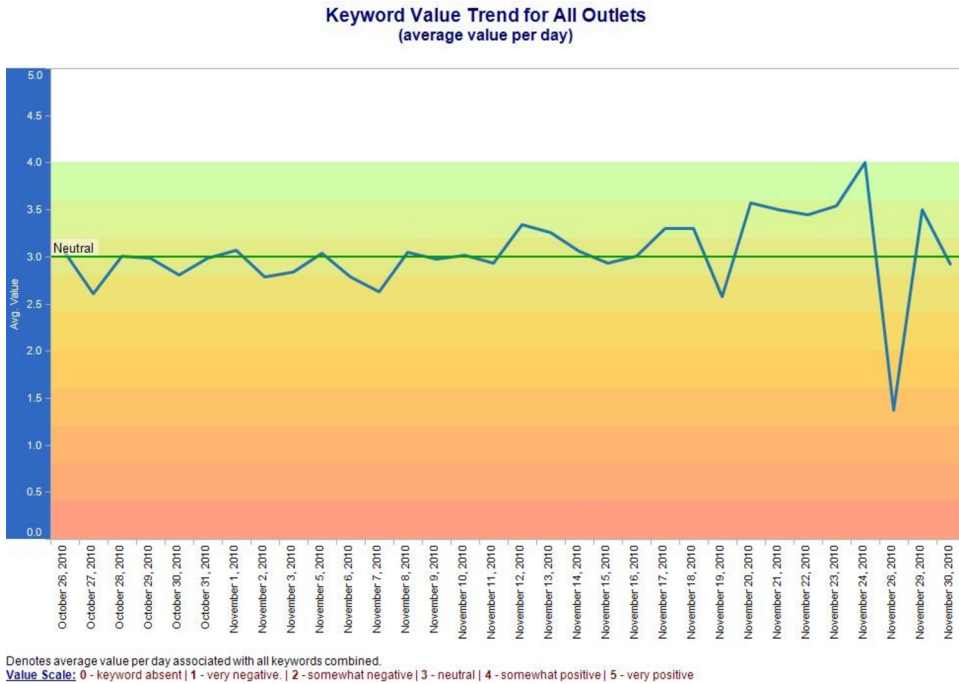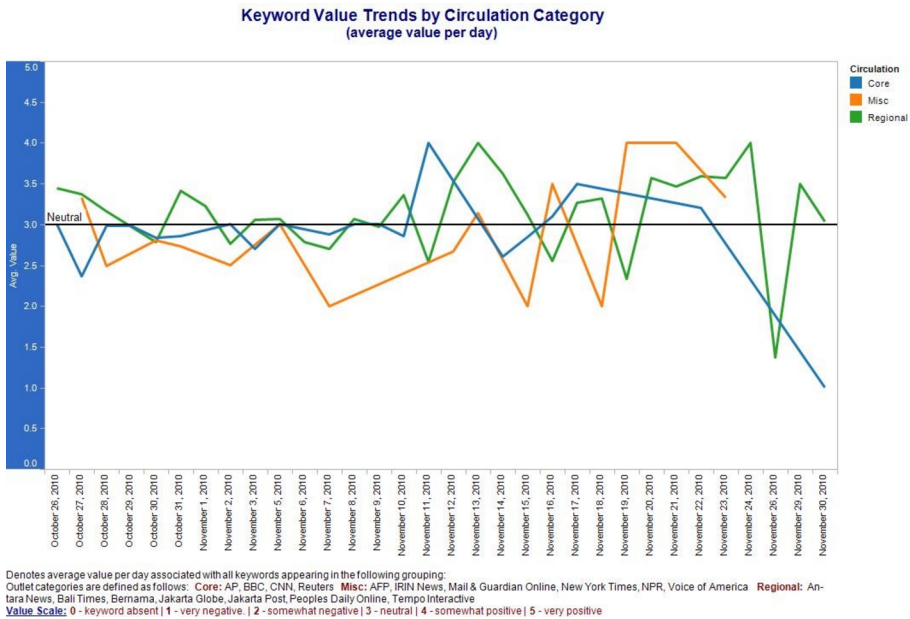
Figure 10

Accountability Keyword Value Analysis

Figure 11 depicts the manner in which accountability keywords were used. Some words, such as "defend" and "responsible", are generally used in a positive context. Others, such as "blame" and "excuse", usually appeared in critical statements where accusations are implied. Interestingly, the word "accuse" (seen as the red dot on November 30) is itself rarely used, and occurs only in positive contexts. The article in question describes a television program in which further disaster is forecast for the "doomed city" of Yogyakarta.[11] The Indonesian Broadcasting Commission reported the incident to the police as a potential legal violation. Ironically, the word itself appears in a quote that defends the inflammatory activity. The keyword is given a positive value because it relates an instance in which a potential crime is reported to the police for investigation, and as such reflects responsible action by a government agency in reporting potential legal violations to the appropriate authority. It is not intended as a judgment on the legitimacy of the law itself.

The lowest dip on the chart occurs on November 7 and is caused by the negative context in which the word "excuse" is used. The following day sees a high point on the graph where "defend" is used, implying a one-day response time to a disparaging critique. However, this is not actually the case. The negative keyword value occurs in a scathing editorial that describes the callous behavior of government officials in the face of mass suffering. Official disaster response is deemed slow not because of weather—the official explanation—but is instead due to poor inter-agency coordination.

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[11] "Indonesian Media Tycoon Reported for Broadcasting Merapi Gossip and Lies". Jakarta Globe. Farouk Arnaz. 30 November 2010.

The high of November 8 is not a direct response to the editorial, but it does speak to accusations levied by its author. A government volcanologist justifies the rate with which the designated "danger zone" was expanded. He countered criticism that the initial zone was not broad enough, explaining that the region's status as a tourism and academic hub would have crushed the economy and incited panic.
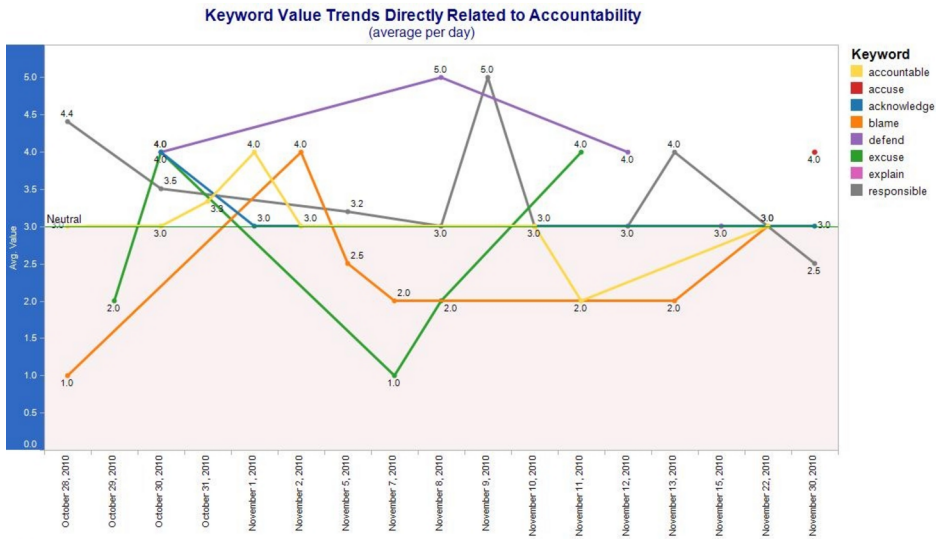
Figure 11

Policy and Law Value Analysis

Values related to policy and law are shown in figure 12. The keyword "political" never attains a value higher than "3" (neutral) and is usually used in a negative context. In this case, the graph expresses the keyword subject quite accurately. Politicians have been harshly criticized, not only by journalists and the public, but also by the politicians themselves who allude to other political actors in disparaging terms. This keyword appears repeatedly in several Jakarta Globe articles. The most accusatory article contains quotes by Yogyakarta's governor accusing political parties and some government agencies of attempting to capitalize on the disaster by exaggerating their roles in the response activities, sometimes exacerbating victims' suffering in the process.[12] Another article accuses politicians of fleeing the area by taking overseas trips for official business unrelated to the disaster.[13] Yogyakarta's governor has decried these expense-paid trips as sapping the government of funds that could better be used in the response effort.

---

[12] Antara. (2010. November 2). Political Parties Blasted for Merapi Volcano Aid. Jakarta Globe. Retrieved November 2010. http://www.thejakartaglobe.com/home/political-parties-blasted-for-merapi-volcano-aid/404492
[13] Darusman, Taufik. Our State of Disaster. Jakarta Globe. Retrieved November 2010.
http://www.thejakartaglobe.com/columns/taufik-darusman-our-state-of-disaster/405419

Given its topical similarity to "political", the keyword "lawmaker" displays a similar value arc. The keyword "political" is used in reference to politicians who are often lawmakers, and the two words are used somewhat interchangeably in press reports. A low value on October 30 results from a Jakarta Globe article that relates comments by the House Speaker that have been widely criticized as extremely insensitive.[14] Lawmakers endure further criticism on November 3 in an article that describes ill-timed overseas trips by two delegations.[15] A dip on November 22 occurs in an editorial reference to the same trips, but it includes additional criticism of which lawmakers are the indirect recipients. Indonesia's preparedness falls short when compared with that of Japan, a nation faced with similar natural hazards, and lawmakers are blamed for failing to design and implement effective disaster management plans. The editorial levels general accusations of corruption and ineptitude. It also calls for more funding of science and technology programs to modernize disaster management capabilities.[16] However, there is cause for hope. The most recent appearance of "lawmaker" is given a positive value assessment in an Antara News article in which a lawmaker calls for a country-wide disaster map.[17] Interestingly, this is the same lawmaker (the House Speaker) who was slammed earlier in the month for his insensitive comments regarding disaster victims. It would be presumptive to conclude that his later actions are solely or directly in response to critical news media reports. However, Indonesian politicians are beholden to their citizenry, and concerns of a public outcry upon reading such negative depictions might have spurred the House Speaker to take dramatic and decisive action to counter the blows to his image.

"Regulate" enjoys consistently positive value attributions. Unfortunately, this is not due to the presence of appropriate regulatory measures that are effectively implemented, but it does indicate that disaster management initiatives are evolving. Early appearances of the keyword appear in Reuters and CNN articles. The Reuters piece consists of an interview wherein a World Bank official details the benefits of improved land-use planning that would enable officials to reduce risks, minimize the negative effects of disasters, and improve response activities.[18] The CNN piece describes the president of Indonesia's directive to draft regulations for the relocation of victims to safer areas.[19] These articles appear on October 29, but by November 23 zoning obstaclesbecome clear in media reports. The Jakarta Post reports that safer land has been identified, but it is designated as national park territory, and

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[14] Rachman, Anita. (2010, October 30). After tsunami slur, party urges 'tongue control'. Jakarta Globe. Retrieved November 2010. http://www.thejakartaglobe.com/home/after-tsunami-slur-party-urges-tongue-control/404030

[15] Rachman, Anita. (2010, November 3). Indonesian Lawmakers Fly Coop Despite Trip Warnings. Jakarta Globe. Retrieved November 2010. http://www.thejakartaglobe.com/home/indonesian-lawmakers-fly-coop-despite-trip-warnings/404629

[16] Lesmana, Teddy.(2010, November 18). The Thinker: Planning for Disaster. The Jakarta Globe. Retrieved November 2010. http://www.thejakartaglobe.com/columns/the-thinker-planning-for-disaster/407283

[17] Antara News Staff. (2010, November 22). Govt needs to draw up map of disaster-prone areas. Antara News. Retrieved November 2010 from http://www.antaranews.com/en/news/1290435460/govt-needs-to-draw-up-map-of-disaster-prone-areas

[18] Thin Lei Win. (2010, October 29). Interview: Three key changes can reduce disaster risk in East Asia, expert says. Reuters. Retrieved November 2010 from http://www.trust.org/alertnet/news/interview-three-key-changes-can-reduce-disaster-risk-in-east-asia-expert-says/

[19] CNN Wire Staff. (2010, October 29). Government considers relocations after Indonesian tsunami. CNN. http://articles.cnn.com/2010-10-29/world/indonesia.quake_1_tsunami-warning-system-indonesian-islands?_s=PM:WORLD

thus cannot contain residential structures.[20] The keywords were assessed positively because they revealed that zoning laws exist and are respected. This reality is not always the case in areas of the world where populations experience high natural hazard exposure. Furthermore, officials are actively seeking to remedy the problem—an example of responsible behavior.
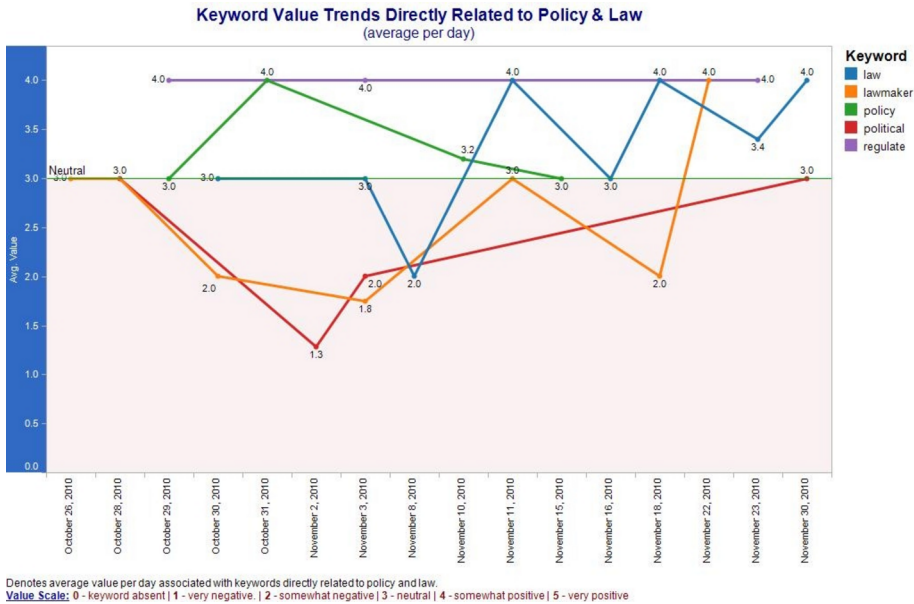
Figure 12

Conclusion

The results of this study indicate patterns of coverage that reveals the referential and complementary behavior of news outlets, much of which is common knowledge in general. However, data analysis reveals more of the shape and nature of this arc. No outlet operates in a vacuum. Intense local attention to a topic increases the probability of coverage by larger outlets. Conversely, local outlets will pick up larger outlets when manpower and logistics make direct journalism impractical, if not impossible.

The data also allows a keyhole peak into the lifecycle of disaster coverage. This insight may prove the most practical, as it indicates the time window in which improvements can most easily be introduced and most likely implemented. While coverage by regional outlets is understandably more enduring, considering that their readership is directly affected by the catastrophe, interest drops off by the major outlets. A cynical observer might interpret this as a mass attention deficit akin to donor fatigue, but it may just as likely be due to the mandate of large outlets to cover more regions, and disasters, unfortunately, occur everywhere.

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[20] Syofiardi Bachyul Jb. (2010, November 23). Relocation plans may stumble into unwelcoming forest. Jakarta Post. Retrieved November 2010 from http://www.thejakartapost.com/news/2010/11/23/relocation-plans-may-stumble-unwelcoming-forest.html

More substantive insights and conclusions require data gathering over a period beyond that of a month and for more events. Time constraints further hampered this study, in that reader responses to online articles were not considered. Journalists often have blogs on news sites as well, on which they post widely read editorials and special reports that also receive reader comments. It is much to the regret of this researcher that these could not be included in the study.

However, this study's primary contribution lies in the development and testing of a methodology to study the effects of a new technology application whose popularity is sweeping the globe. The centuries-old hard copy is ceding ground to the next generation—the online news outlet. Its growth has caught the news industry itself unawares, as even the largest outlets are working as quickly as possible to develop way to remain profitable and relevant in this new format. Fortunately, the same technology that has occasioned this development has also brought advances that enable researchers to grapple with copious amounts of data, both in terms of processing as well as visualization. This study presents a new way of viewing text to glean insights on the dissemination of knowledge and the actions which result. It is hoped that this research eases and encourages future endeavors in text analysis of online media.

Appendix A
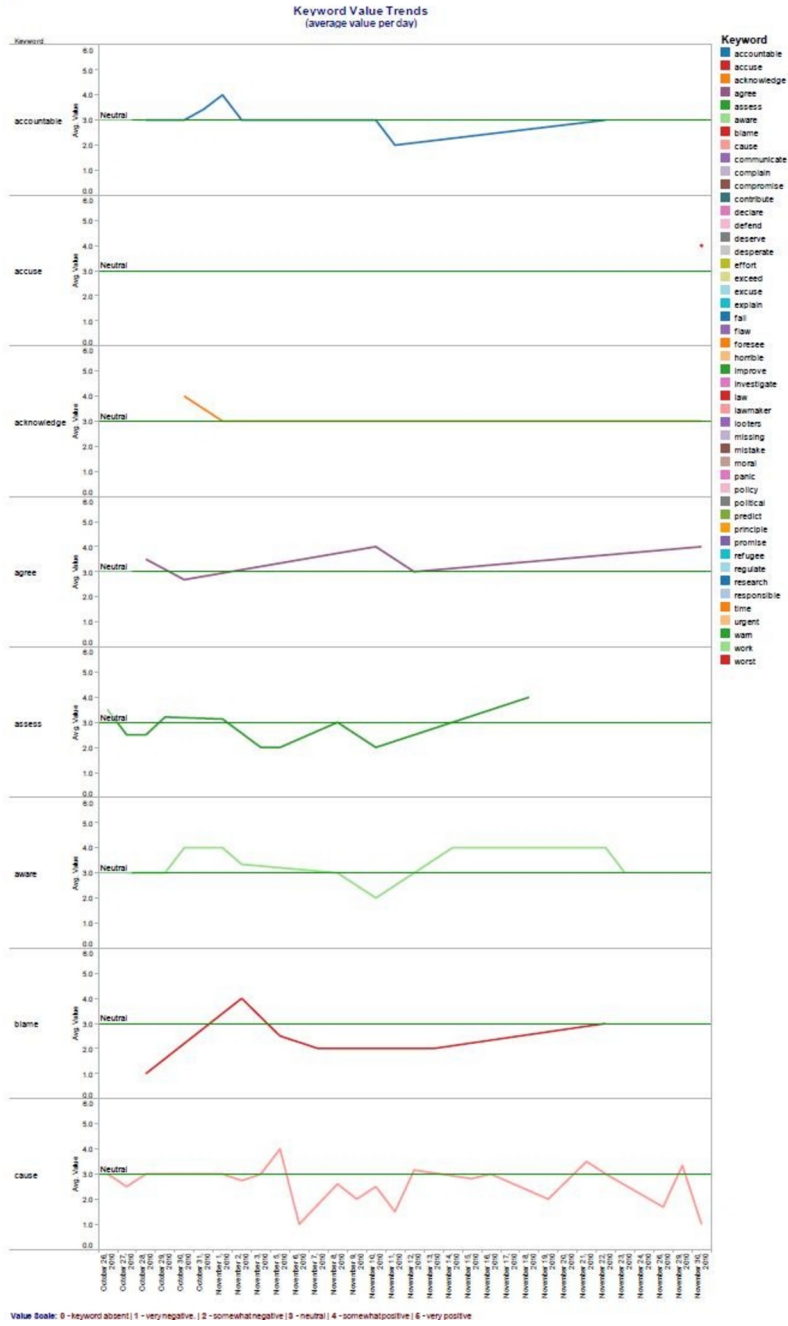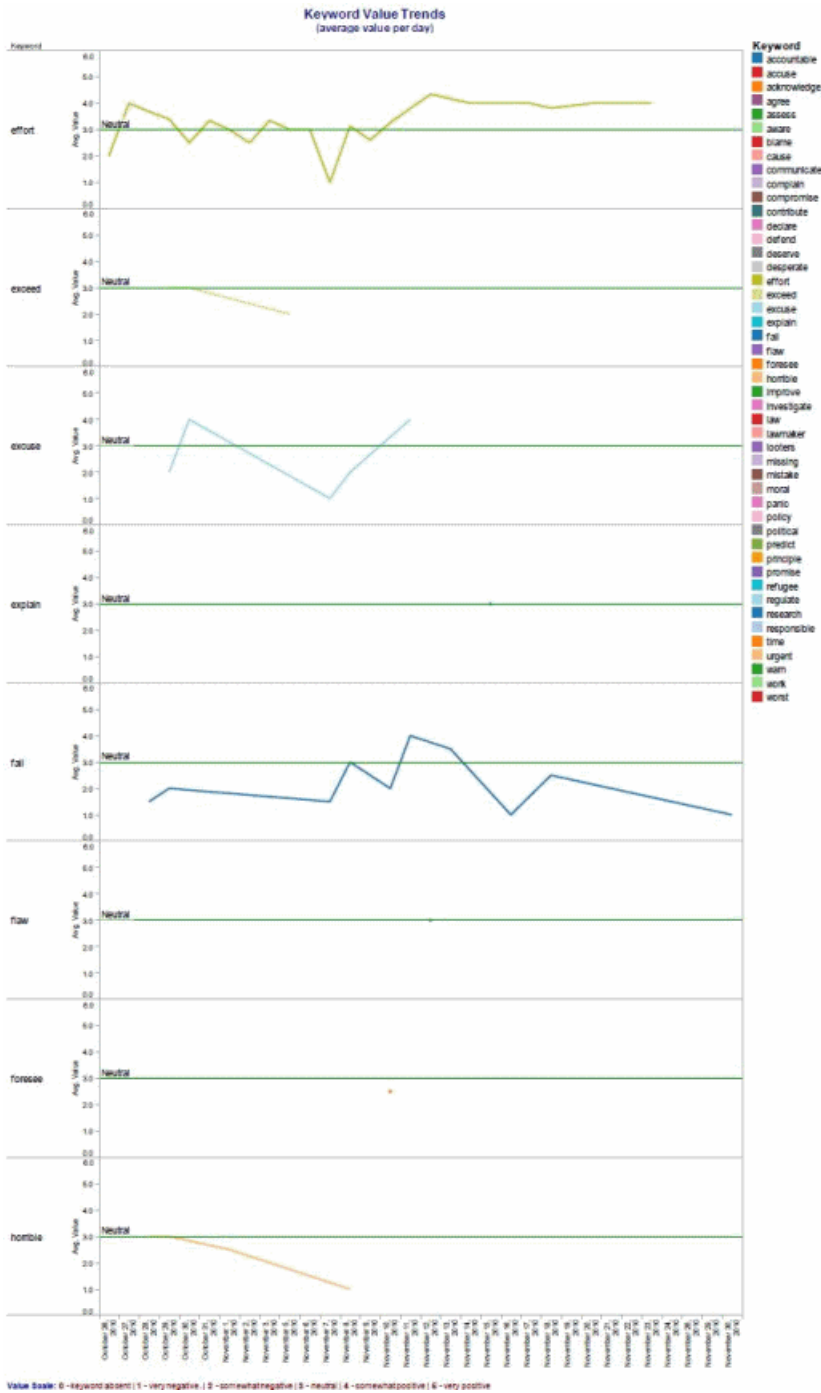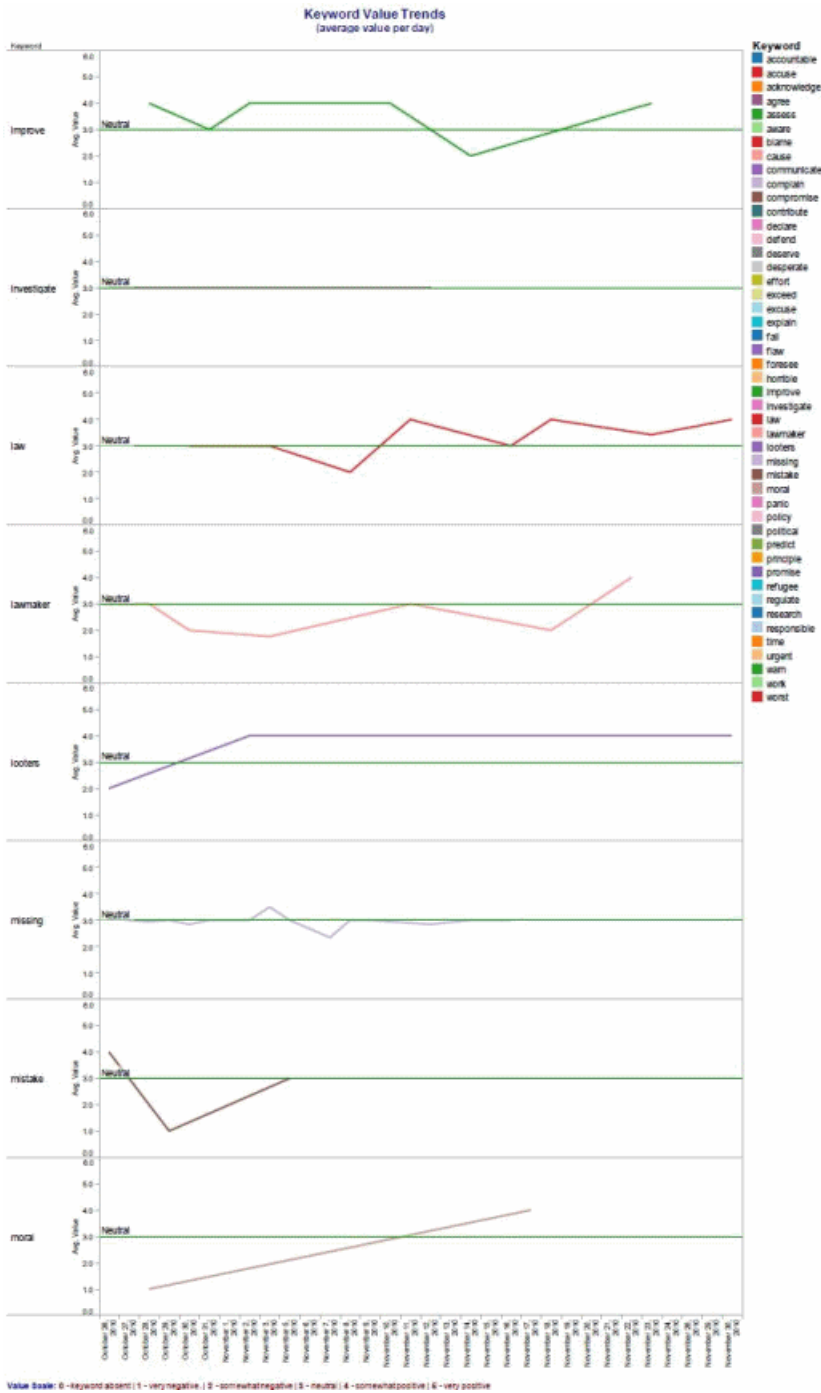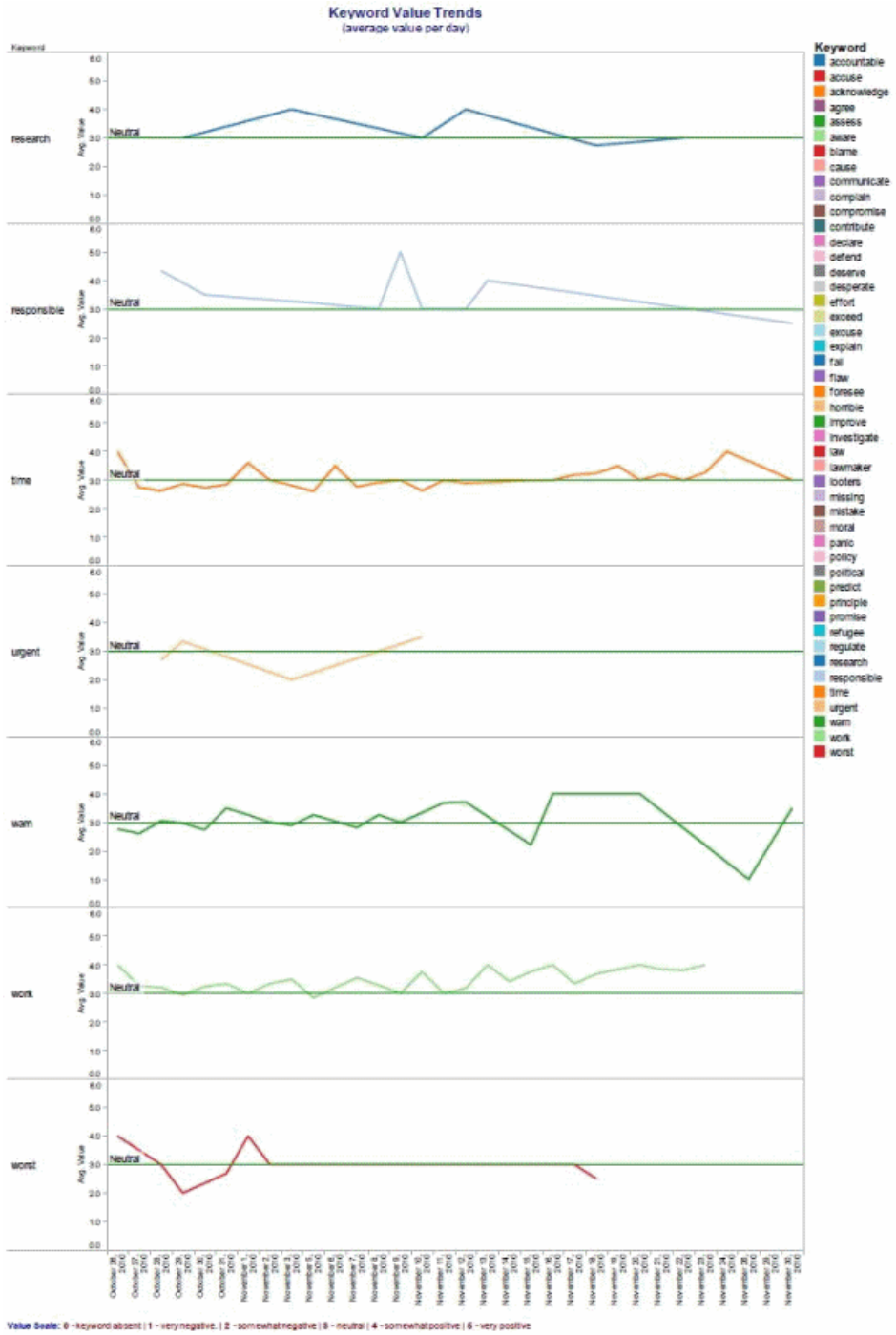
Keyword Value Trends
(average value per day)

Value Scale: 0 - keyword absent | 1 - very negative. | 2 - somewhat negative | 3 - neutral | 4 - somewhat positive | 5 - very positive

Keyword Value Trends
(average value per day)

Keyword Value Trends
(average value per day)

Keyword Value Trends
(average value per day)

Keyword Value Trends
(average value per day)

Keyword Value Trends
(average value per day)

Value Scale: 0 - keyword absent | 1 - very negative | 2 - somewhat negative | 3 - neutral | 4 - somewhat positive | 6 - very positive

Appendix B

Keyword Value Trends
(average value per day)

Avg. Value

Article	Avg. Value	Date
Queen Elizabeth II Sends Condolences	3.0	October 29, 2010
Relief Rolling but Is It Enough	2.0	
Warning systems often dont help tsuna...	2.8	
After Tsunami Slur Party Urges Tongu...	3.1	October 30, 2010
Indonesia Battles Disasters on Two Fro...	2.0 / 2.0	
Indonesian volcano unleashes biggest ...	2.7	
Over a hundred found alive in Indonesi...	3.1	
Villagers Still Cling to Mount Merapi	3.1	
Indonesia hikes tsunami relief efforts	2.9	October 31, 2010
Indonesia President Says Foreign Aid ...	3.9 / 3.9	
Indonesia tsunami Better weather aids ...	2.9	
Indonesians flee hot ash as volcano ru...	3.0	
Indonesias Borobudur Temple Reope...	3.0	
Panicked exodus as Indonesia volcano...	2.9	
Weather Clears for Indonesia Tsunami ...	2.3 / 2.3	
Indonesia volcano erupts again	2.8 / 3.0	November 1, 2010
Indonesias Environment Ministry Sen...	3.1	
Not Just People but Protected Wildlife ...	2.5 / 2.5	
Pain incomprehension for tsunami surv...	3.2	
President Yudhoyono to Visit Mount M...	3.0 / 3.0	
Shortage of boats slows aid for Indone...	2.7	
Volunteers Use Twitter to Help Victims	3.5	
Anger Grows Over Aid Effort a Week A...	2.5 / 2.5	November 2, 2010
Big country big disasters	3.5	
Governor Orders Construction of Bamb...	3.7	
Health Fears Grow as Thousands Stuc...	2.8	
Merapi eruption forces Indonesia flight ...	3.2	
More eruptions questions in Indonesia	2.7	
Political Parties Blasted for Merapi Volc...	1.5	
State to Force Evacuation As Merapi F...	2.9	
Indonesia hit by earthquake and more ...	2.5	November 3, 2010
Indonesia volcano Mount Merapi in ne...	2.5	
Indonesian Lawmakers Fly Coop Despi...	2.2	
Merapis Exclusion Zone Widened to Pr...	3.0	
More camps to house Mt Merapi IDPs	2.9	
Relief Workers Battle Waves	3.7	
Returnees flee as Indonesia volcano s...	3.3	

Articles seen in duplicate because of multiple keyword appearances. These can be either different keywords or identical keywords appearing in different contexts, and thus will be given separate values. Stacking results in average values being displayed over the maximum value of 5. This occurs because the same article was released on the same day by multiple outlets.

Value Scale: 0 - keyword absent | 1 - very negative | 2 - somewhat negative | 3 - neutral | 4 - somewhat positive | 5 - very positive

Outlet
- AFP
- Antara News
- AP
- Bali Times
- BBC
- Bernama
- CNN
- IRIN News
- Jakarta Globe
- Jakarta Post
- Mail & Guardian Online
- New York Times
- NPR
- Peoples Daily Online
- Reuters
- Tempo Interactive
- Voice of America News

Keyword Value Trends
(average value per day)

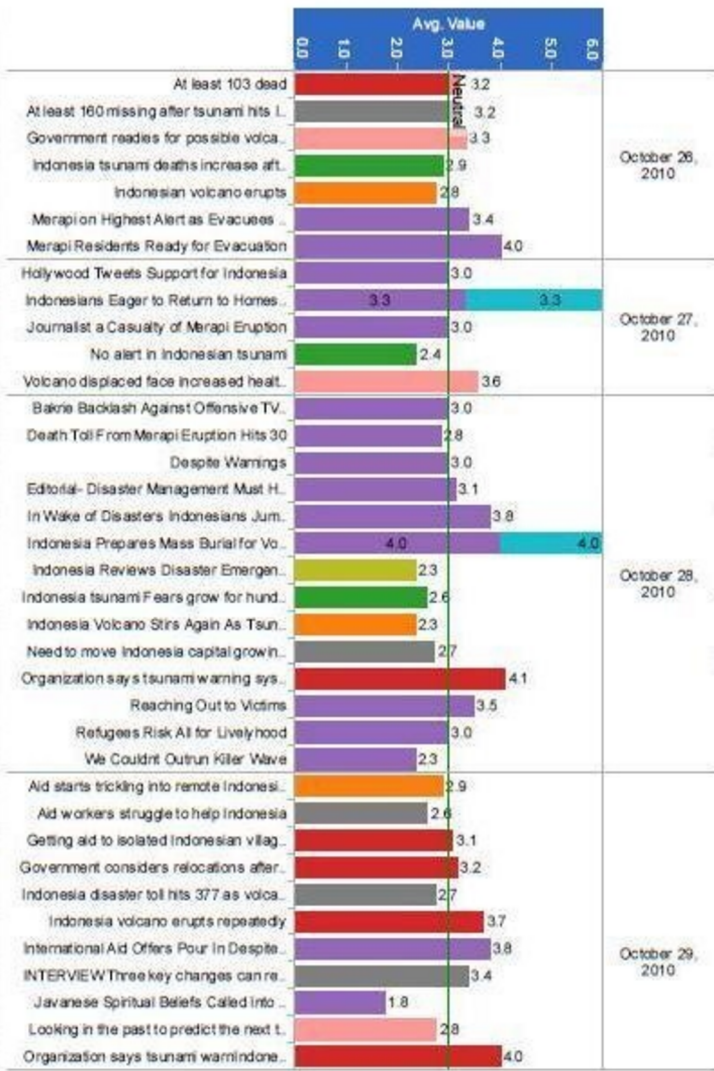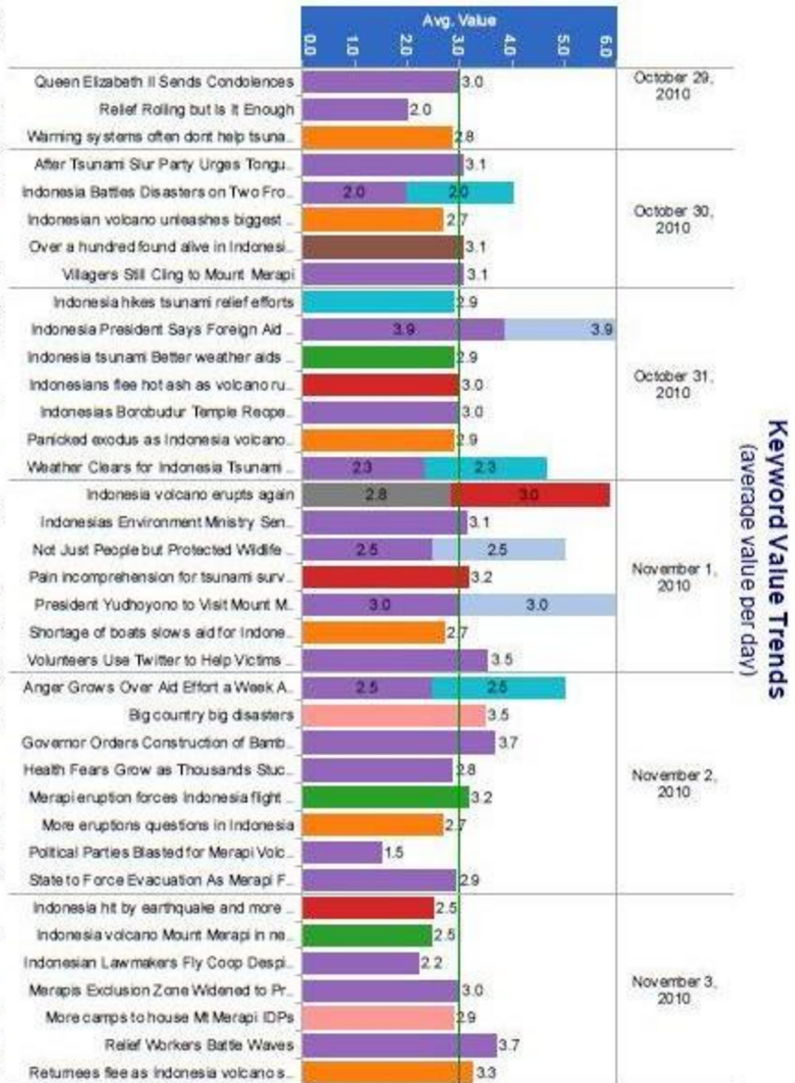| Date	Article	Avg. Value
November 10, 2010	Agency escalates response as Indones...	3.5
	Ash Forces Yogyakarta Airport to Stay ...	3.9
	Better to Stay Away	3.3
	Indonesia volcano wanes but some fig...	3.0
	Indonesian volcano erupts canceling fl...	2.8
	Move to airlift Malaysians as Merapi vol...	3.0
	Volunteers Fight Battle of Bin At Mera...	3.2
	Why arent governments planning for e...	2.7
November 11, 2010	Yogyakarta Residents Wield Shovels A...	4.0
	Indonesia Disaster Risk Mapping to G...	4.0
	Indonesia volcano cuts presidents trip t...	4.0
	Indonesia's President Jets Off to Seoul	3.0
	Is TV Coverage of the Merapi Disaster ...	1.9
	Merapi Evacuees Sign Waivers to Retu...	3.0
	Plastic to Protect Indonesia	3.5
November 12, 2010	Cows and Goats the Priority During Ind...	3.4
	Indonesia Volcano Death Toll Rises Pa...	4.0
	Merapi Evacuees Sign Waivers to Retu...	3.5
	New Tools to Help Monitoring	3.4
	Official Proposes Disaster Education in...	3.5 / 3.5
	Predicting Eruptions Not an Exact Scie...	3.5 / 3.5
	Rare Leopards Abandoning Indonesia ...	4.0 / 4.0
	Volcano Keeper Becomes a Lightning ...	2.4
	Wasior Evacuees Slowly Returning As ...	3.3
November 13, 2010	Few Blessings In Indonesias Slow Mot...	3.1
	Indonesia Military Deploys Almost 600...	4.0
November 14, 2010	Indonesia Considers Proposal to Introd...	4.0
	Indonesia Volcanos Danger Zones Shri...	3.0
	More ash buried bodies found at Indon...	2.3
	Search ends for bodies in the tsunami	3.0
November 15, 2010	30000 Indonesians Trudge Home Desp...	2.7
	Indonesia Mount Merapi volcano erupt...	3.3
	Indonesia Unveils Compensation Plan f...	4.0
	Merapi Continues to Take a Toll on Yo...	3.0
	Merapi Evacuees Ignore Volcano Thre...	2.0
	Piece of Mind	3.0
	Thousands return to slopes of Indonesi...	3.0

Articles seen in duplicate because of multiple keyword appearances. These can be either different keywords or identical keywords appearing in different contexts, and thus will be given separate values. Stacking results in average values being displayed over the maximum value of 5. This occurs because the same article was released on the same day by multiple outlets.

Value Scale: 0 - keyword absent | 1 - very negative | 2 - somewhat negative | 3 - neutral | 4 - somewhat positive | 5 - very positive
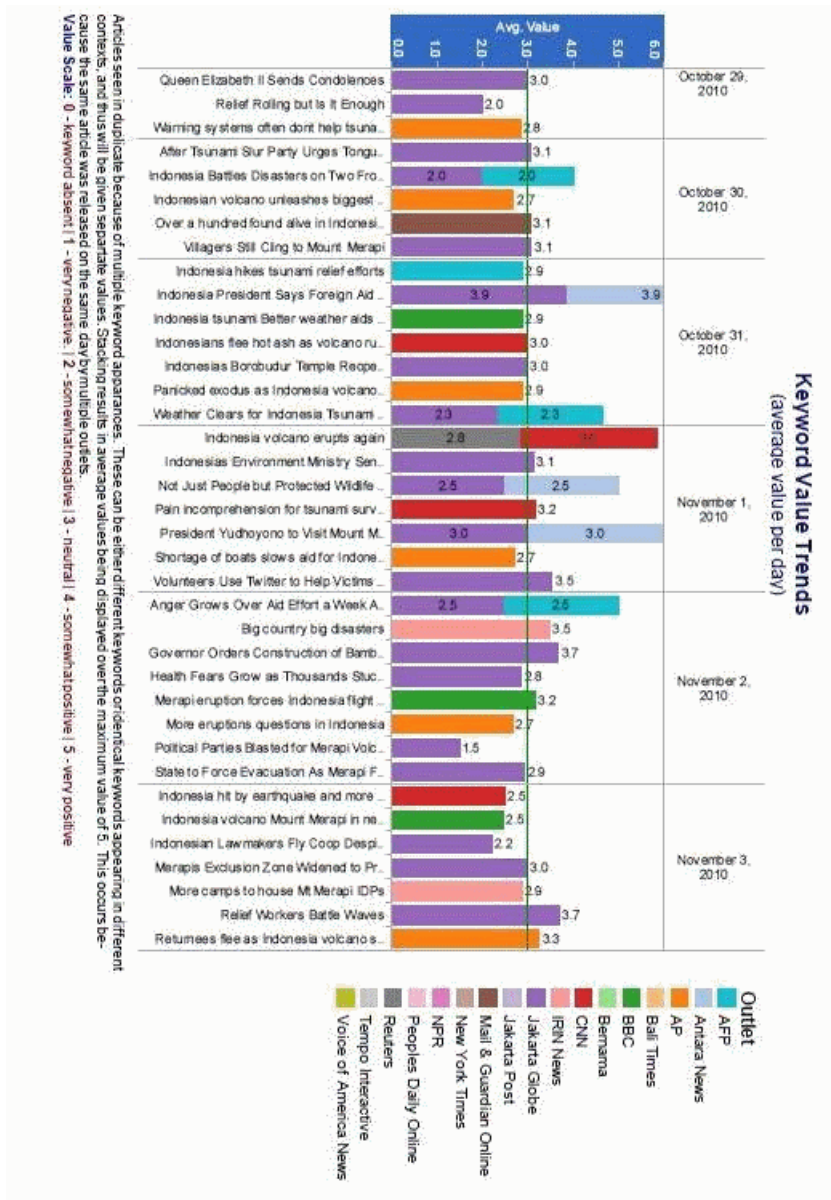
Outlet
- Voice of America News
- Tempo Interactive
- Reuters
- Peoples Daily Online
- NPR
- New York Times
- Mail & Guardian Online
- Jakarta Post
- Jakarta Globe
- IRIN News
- CNN
- Bernama
- BBC
- Bali Times
- AP
- Antara News
- AFP

Keyword Value Trends
(average value per day)

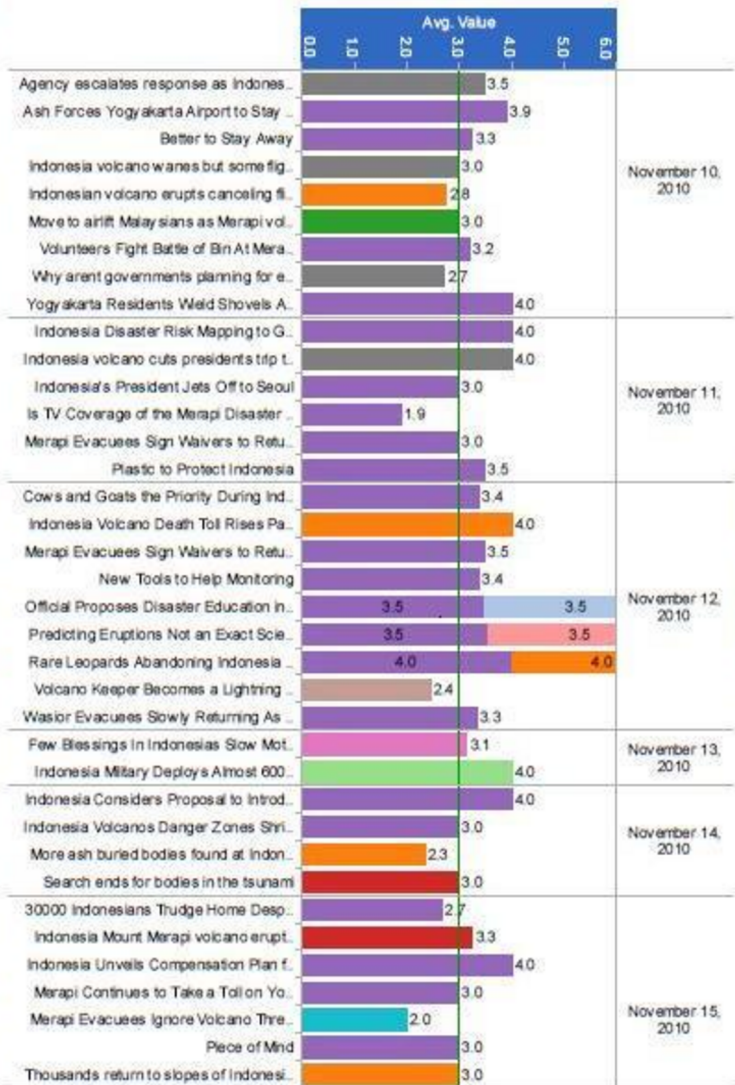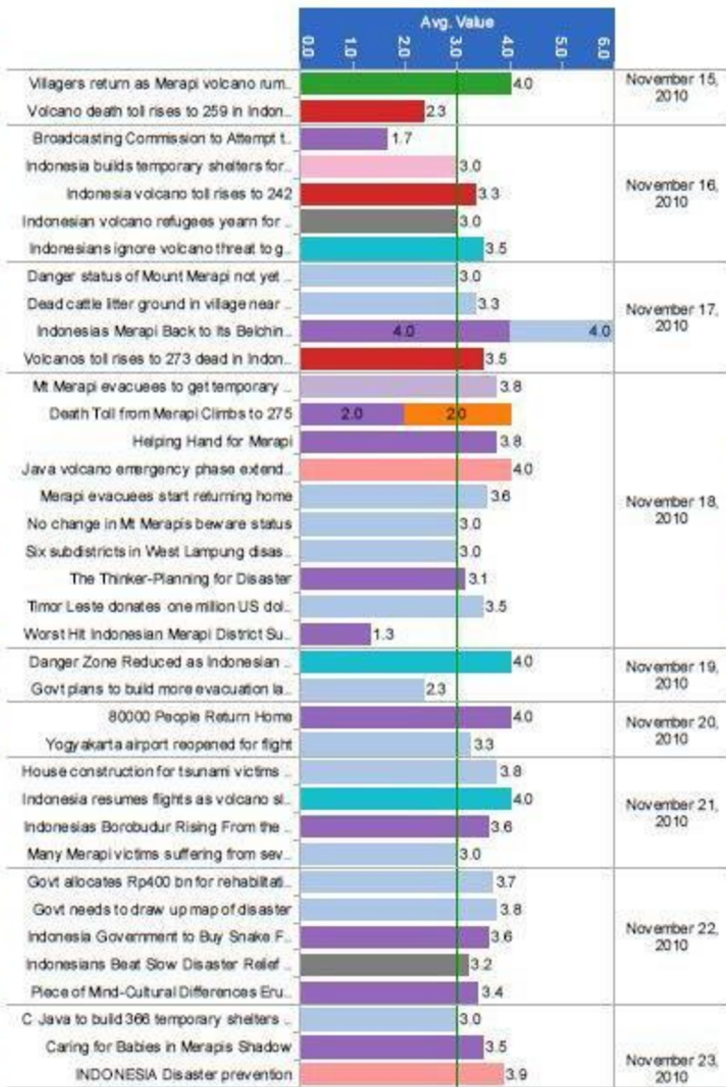| Avg. Value		Date
Villagers return as Merapi volcano rum...	4.0	November 15, 2010
Volcano death toll rises to 259 in Indon...	2.3	
Broadcasting Commission to Attempt t...	1.7	November 16, 2010
Indonesia builds temporary shelters for...	3.0	
Indonesia volcano toll rises to 242	3.3	
Indonesian volcano refugees yearn for...	3.0	
Indonesians ignore volcano threat to g...	3.5	
Danger status of Mount Merapi not yet...	3.0	November 17, 2010
Dead cattle litter ground in village near...	3.3	
Indonesias Merapi Back to its Belchin...	4.0 4.0	
Volcanos toll rises to 273 dead in Indon...	3.5	
Mt Merapi evacuees to get temporary...	3.8	November 18, 2010
Death Toll from Merapi Climbs to 275	2.0 2.0	
Helping Hand for Merapi	3.8	
Java volcano emergency phase extend...	4.0	
Merapi evacuees start returning home	3.6	
No change in Mt Merapis beware status	3.0	
Six subdistricts in West Lampung disas...	3.0	
The Thinker-Planning for Disaster	3.1	
Timor Leste donates one million US dol...	3.5	
Worst Hit Indonesian Merapi District Su...	1.3	
Danger Zone Reduced as Indonesian...	4.0	November 19, 2010
Govt plans to build more evacuation la...	2.3	
80000 People Return Home	4.0	November 20, 2010
Yogyakarta airport reopened for flight	3.3	
House construction for tsunami victims	3.8	November 21, 2010
Indonesia resumes flights as volcano sl...	4.0	
Indonesias Borobudur Rising From the...	3.6	
Many Merapi victims suffering from sev...	3.0	
Govt allocates Rp400 bn for rehabilitati...	3.7	November 22, 2010
Govt needs to draw up map of disaster	3.8	
Indonesia Government to Buy Snake F...	3.6	
Indonesians Beat Slow Disaster Relief...	3.2	
Piece of Mind-Cultural Differences Eru...	3.4	
C Java to build 366 temporary shelters...	3.0	November 23, 2010
Caring for Babies in Merapis Shadow	3.5	
INDONESIA Disaster prevention	3.9	

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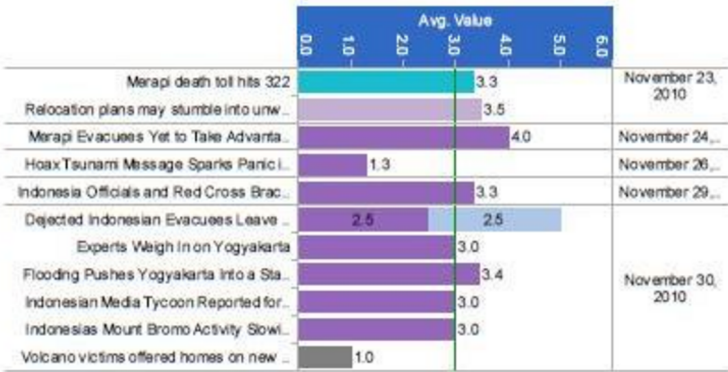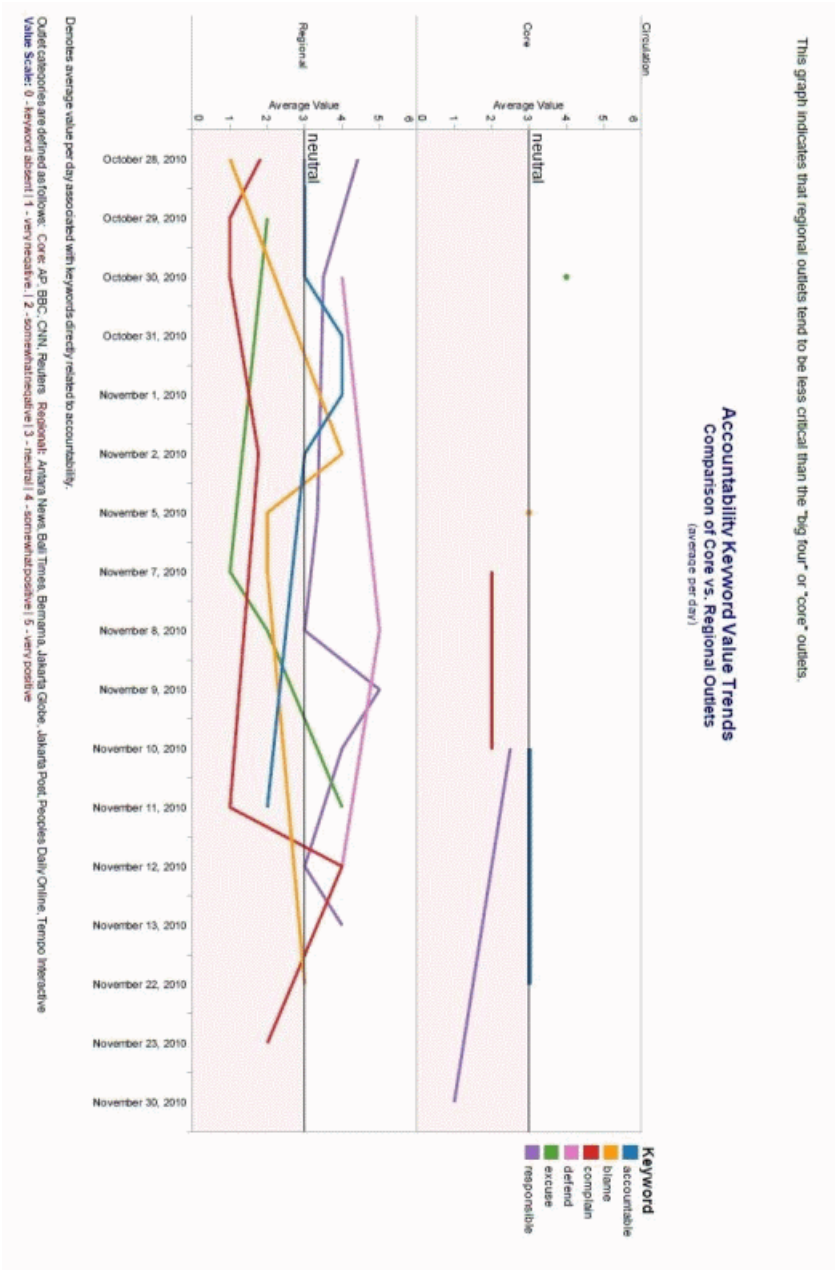
Outlet
Voice of America News
Tempo Interactive
Reuters
Peoples Daily Online
NPR
New York Times
Mail & Guardian Online
Jakarta Post
Jakarta Globe
IRIN News
CNN
Bernama
BBC
Bali Times
AP
Antara News
AFP

Keyword Value Trends
(average value per day)

Avg. Value		
Merapi death toll hits 322	3.3	November 23, 2010
Relocation plans may stumble into unw...	3.5	
Merapi Evacuees Yet to Take Advanta...	4.0	November 24,...
Hoax Tsunami Message Sparks Panic i...	1.3	November 26,...
Indonesia Officials and Red Cross Brac...	3.3	November 29,...
Dejected Indonesian Evacuees Leave ...	2.5 2.5	
Experts Weigh In on Yogyakarta	3.0	
Flooding Pushes Yogyakarta Into a Sta...	3.4	November 30, 2010
Indonesian Media Tycoon Reported for...	3.0	
Indonesias Mount Bromo Activity Slowi...	3.0	
Volcano victims offered homes on new ...	1.0	

Outlet
AFP
Antara News
AP
Bali Times
BBC
Bemama
CNN
IRIN News
Jakarta Globe
Jakarta Post
Mail & Guardian Online
New York Times
NPR
Peoples Daily Online
Reuters
Tempo Interactive
Voice of America News

Articles seen in duplicate because of multiple keyword appearances. These can be either different keywords or identical keywords appearing in different contexts, and thus will be given separate values. Stacking results in average values being displayed over the maximum value of 5. This occurs be-cause the same article was released on the same day by multiple outlets.
Value Scale: 0 - keyword absent | 1 - very negative | 2 - somewhat negative | 3 - neutral | 4 - somewhat positive | 5 - very positive

175

Appendix C

Accountability Keyword Value Trends
Comparison of Core vs. Regional Outlets
(average per day)

This graph indicates that regional outlets tend to be less critical than the "big four" or "core" outlets.

About the Author

Elyktra Eisman

Elyktra Eisman is a Ph.D. candidate in International Relations at Florida International University (FIU) and specializes in Middle Eastern and Security Studies. She has a BS in Electrical Engineering from FIU and a BA in Liberal Arts from Barry University. Her research at FIU involves GIS applications to social science issues. Ms. Eisman's doctoral research entails the application of mathematical techniques to this area and the development of predictive modeling mechanisms for their incorporation into GIS software. Her GIS experience includes remote sensing data analysis and digital image processing techniques for projects involving the analysis of land use in urban areas. She also plays two historical replica harps, a ca. 1650 Flemish harp and a Welsh Triple Harp, in addition to the modern concert harp.

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Online presentations can be viewed on YouTube.

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The Constructed Environment Community enables members to publish through three mediums. First by participating in the Constructed Environment Conference, community members can enter a world of journal publication unlike the traditional academic publishing forums—a result of the responsive, non-hierarchical and constructive nature of the peer review process. *The International Journal of the Constructed Environment* provides a framework for double-blind peer review, enabling authors to publish into an academic journal of the highest standard.

The second publication medium is through the book series The Constructed Environment, publishing cutting edge books in print and electronic formats. Publication proposal and manuscript submissions are welcome.

The third major publishing medium is our news blog, constantly publishing short news updates from the Constructed Environment Community, as well as major developments in the various disciplines of the constructed environment. You can also join this conversation at Facebook and Twitter or subscribe to our email Newsletter.

Common Ground Publishing Journals

AGING Aging and Society: An Interdisciplinary Journal Website: http://AgingAndSociety.com/journal/	**ARTS** The International Journal of the Arts in Society. Website: www.Arts-Journal.com
BOOK The International Journal of the Book Website: www.Book-Journal.com	**CLIMATE CHANGE** The International Journal of Climate Change: Impacts and Responses Website: www.Climate-Journal.com
CONSTRUCTED ENVIRONMENT The International Journal of the Constructed Environment Website: www.ConstructedEnvironment.com/journal	**DESIGN** Design Principles and Practices: An International Journal Website: www.Design-Journal.com
DIVERSITY The International Journal of Diversity in Organizations, Communities and Nations Website: www.Diversity-Journal.com	**FOOD** Food Studies: An Interdisciplinary Journal Website: http://Food-Studies.com/journal/
GLOBAL STUDIES The Global Studies Journal Website: www.GlobalStudiesJournal.com	**HEALTH** The International Journal of Health, Wellness and Society Website: www.HealthandSociety.com/journal
HUMANITIES The International Journal of the Humanities Website: www.Humanities-Journal.com	**IMAGE** The International Journal of the Image Website: www.OntheImage.com/journal
LEARNING The International Journal of Learning. Website: www.Learning-Journal.com	**MANAGEMENT** The International Journal of Knowledge, Culture and Change Management. Website: www.Management-Journal.com
MUSEUM The International Journal of the Inclusive Museum Website: www.Museum-Journal.com	**RELIGION AND SPIRITUALITY** The International Journal of Religion and Spirituality in Society Website: www.Religion-Journal.com
SCIENCE IN SOCIETY The International Journal of Science in Society Website: www.ScienceinSocietyJournal.com	**SOCIAL SCIENCES** The International Journal of Interdisciplinary Social Sciences Website: www.SocialSciences-Journal.com
SPACES AND FLOWS Spaces and Flows: An International Journal of Urban and ExtraUrban Studies Website: www.SpacesJournal.com	**SPORT AND SOCIETY** The International Journal of Sport and Society Website: www.sportandsociety.com/journal
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