Using Giddens' structuration theory to examine the contesting participation of online mass media's journalists in Katadata.co.id framing

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ABSTRACT

Accuracy is a common and serious problem in online mass media, particularly in today's fast-paced news industry. By applying the arguments in structuration theory, this study examines agents within the structure of the news industry, such that they function as both the medium and outcome of agency formation, and how they intertwine with issues of public trust in online mass media. Using *Katadata.co.id* as an instrumental case study from April to July 2019, this study suggests that the emergence of data journalism potentially offers a solution to overcome the issue of accuracy within the new structure of online news media. Using Giddens' structuration theory, this study critically analyses data journalism's efficacy to enhance the accuracy of online news. The study concludes that although data journalism provides financial benefits for *Katadata.co.id*, the website did not demonstrate an ability to overcome the problem of inaccuracy, which is attributed to a lack of adequate data analysis training, support and equipment among its journalists. Rather, *Katadata.co.id* remains trapped in the typical structure of online mass media that sacrifices quality and prioritises news quantity and speed to increase advertising revenues. On that basis, the researchers recommend that *Katadata.co.id* improves its editorial structure to enhance the accuracy of its news. Further research is suggested to examine the application of data journalism by other news websites in Indonesia.

Keywords: ***data journalism, news accuracy, structuration, commercialism***

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INTRODUCTION

This study examines the interplay between journalism, market orientation, and big data in the era of technology expansion, which locates journalism as a system of principles and norms in a reciprocal relationship with the socio-economic environment; which in turn affects journalism practices, especially in news accuracy. It explores the duality of structure within *Katadata.co.id* as a media system and argues that knowledgeability is the core factor in the relationship between rules and resources within the media system. Without knowledgeability as the base for the practical consciousness, agents may become alienated from new emergent rules and thus likely to recreate the social structure.

Amidst the global expansion of information and communications technology (ICT), diverse communication platforms have changed the flow of information and enhanced participation in journalism especially how news are produced, consumed, and distributed, which to a great extent has the opposite effect on the role of news as a credible source of information. Additionally, the news industry cannot avoid but support a market orientation which expects immediate, 24/7 access to information, which in turn can negatively affect its accuracy (Wilding, Fray, Molitorisz & McKewon, 2018; Juntunen, 2010).

As a consequence, the news industry no longer emphasises factuality but is rather focused more on the logic of market orientation (Nge, Yin, Ooi & Hong, 2012). On the other hand, the pressures of real-time online news production have reduced the time spent on fact-checking (Hargreaves, as cited in Le Masurier, 2015). Issues of factuality and accuracy leads to a decrease of public trust which demand accurate information from journalism, which is then followed by declines in advertising revenue, as is evident in Indonesia (Edelman, 2018). Correspondingly, in 2008, Simon Rogers introduced the notion of data journalism in the Guardian newspaper. It emerged as a scientific strategy to process vast amounts of materials in the era of big data in order to produce news accuracy (Sundar, 2014). Employing this strategy, data journalism provides concise and updated information in an increasingly fluid and fast-paced news culture (Howard, as cited in Gray, Bounegru & Chambers, 2012). Data journalism is often defined as journalism based on massive datasets, or what is generally known as big data. Data journalism is an in-depth process that aims to enhance news accuracy by using data exploration, analysis and filtering, followed by interactive visualisation to tell stories (Weber & Rall, 2012). Data journalism facilitates the mass democratisation of resources, tools, techniques and methodology throughout the journalism workflow. Despite the utopian function of data journalism in providing accuracy to the audience (Sundar, 2014), the new approach continues to be challenged by the existing fast-paced news industry.

In what follows, this paper examines data journalism as a strategy to systematically create more accuracy in the news industry. Specifically, this study assesses applications of data journalism in enhancing news accuracy by the online media website *Katadata.co.id*, which presents news in a narrative form along with data, infographics and analysis and is among several online mass media websites that uses data journalism in Indonesia. This research applies the theoretical perspective of structuration, which views online mass media as an agent of social structures (Giddens, 1984) and the findings look at the foundation, implementation and accuracy of data journalism products of *Katadata.co.id*. By using structuration, the researcher will also look at the existing structures within which *Katadata.co.id* conducts data journalism.

In the context of Indonesia's political economy, article 3 paragraph 2 of Indonesian Law No. 40 of 1999 on the Press defines mass media as an economic institution (1999), which is expected to be profitable. This paper argues that as one of the high-profile websites in Indonesia's online news industry, *Katadata.co.id* has a vital role in maintaining news accuracy in the digital era. The study also highlights the intertwined factors in the news industry within

the digital era that can reduce news accuracy, paying attention to the structure of mainstream online mass media that relies on fast-paced production to obtain financial gain.

The results of the study are of both theoretical and practical significance. The findings are expected to contribute positively to the process and implementation of data-driven journalism in mass media and to provide suggestions for players in the mass media industry to implement data-driven journalism without compromising accuracy.

LITERATURE REVIEW

Data Journalism

The term data journalism was introduced by Simon Rogers in *The Guardian* in December 2008 (Knight, 2015). *The Guardian* began to regularly implement data journalism in 2010, when it processed thousands of classified documents on the Afghanistan war that it retrieved from Wikileaks. The UK-based media company subsequently developed a databank on the Internet which can be accessed by its users for research.

The *Guardian* says that practising data journalism is now inevitable because conventional methods, such as describing data through text or tables, are no longer adequate for categorising and determining the content of massive amounts of complex data. Data journalism offers the possibility to analyse and publish such expansive materials (Stampfl, 2016).

Although the term has become popular over the last decade, data journalism is actually the successor of three pre-existing journalism practices, namely, infographics and computer-assisted reporting (CAR) (Knight, 2015), as well as precision journalism, which emerged in 1973 (Meyer, 2002). The function of data journalism extends beyond CAR in that it does not merely deliver data to the public as supporting information to supplement narrative stories but rather uses data as the core of the news (Gray et al, 2012).

Interdisciplinary competence is required in the implementation of data-driven journalism, and journalists collaborate with data analysts, graphic designers and programmers to produce and deliver online news reports (Badri, 2017). Data-driven journalism can thus utilise characteristics of hypertext, multimedia, mobility and interactive technology. Technological advances have enabled raw data to be accessed independently which is then utilised for storytelling and presenting attractive and interactive reports. However, the workflow of data journalism is not much different from that of CAR or precision journalism.

Constantaras (2016) described the data-driven journalism workflow as beginning with two steps (Figure 1): first, there is a question that requires data, and second, there is a dataset that needs a question. Following these initial analyses, journalists gather the datasets by collecting data from organisations, such as state institutions, downloading data which have been officially released to the public, requesting specific data or sorting data from a specific website (Aitamurto, Sirkkunen & Lehtonen, 2011). The datasets are compiled and cleaned to eliminate human error or to change the format; after which, the data is provided with context to assess its validity and reliability. It is necessary to determine who created the data, when it was created, what was the purpose of the data and how the data had been gathered (Constantaras, 2016).

The next step is to analyse the data in accordance with the reporting needs. The datasets must be analysed with the correct tools, and combining various data is necessary to achieve a more comprehensive analysis. Following the analysis, the news report is produced. In data-driven journalism, news reports not only take text-based forms; rather, the data are supported with various visualised narratives, such as maps, charts, graphics, infographics or animations.
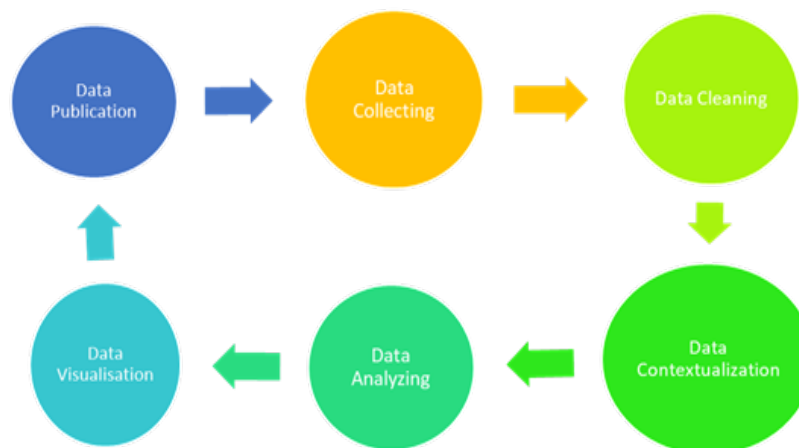
Figure 1. Data journalism workflow

Following the report production process, the publication of the raw dataset is an integral part of the data-driven journalism workflow. First, the publication of raw data adheres to the principle of transparency, such that any person can conduct similar analyses and compare their results with those published by the mass media outlet. Second, news organisations attract more readers by publishing their data, which readers can then access to create their own reports. As such, media can bring wider benefits to the public beyond only producing news. Additionally, others may identify relevant information that the journalists may have missed or omitted in their news reports.

The practice of data journalism varies according to context. Studies on data journalism in Indonesian contexts are still limited. However, there are a number of unpublished studies from Indonesia that mention some Indonesian mass media outlets such as *Katadata.co.id, Tirto.id,* and *Lokadata.id* (formerly *Beritagar.id)* implementing data journalism in their daily journalistic processes (Badri, 2017; Ma'rufa & Aziz, 2018; Putri & Gani, 2018). Other media outlets, such as *Tempo*, merely apply data journalism for certain kind of reporting, mainly for investigative purposes (Asprilla & Maharani, 2019).

According to Badri, data journalism conducted by *Katadata.co.id, Tirto.id,* and *Lokadata.id* is diverse, which can be seen from the way they utilise open source big data tools and independent research. He concludes that *Katadata.co.id*'s best features are its analytical and statistical data development, while for *Tirto.id*, it is its data storytelling and *Lokadata.id*, its data visualization.

Accuracy

Kovach and Rosenstiel (2001) identified accuracy as the foundation of messages in all their forms, providing the basis for context and interpretation to inform debates, news and other public discourses. If the foundation is damaged, then other parts surely can be distorted. Accuracy has been a core journalistic norm since the beginning of the 20th century (Schudson, 2001). Journalists perceive accuracy as a critical aspect of their role in disseminating information to the public that is closely related to other central concepts, such as truth, factuality and credibility. Accuracy raises epistemological questions regarding what and how journalism is able to describe reality accurately, honestly and based on facts. Additionally, accuracy forces journalists not only to base their reports on facts but also to verify whether or not the 'facts' are true (Porlezza, 2019).

Producing accurate news content has long been a challenge for journalists. Despite efforts to be accurate, journalism products often contain errors (Maier, 2005). While various academic studies have reported proportions of news containing errors ranging from 41% to 60%, mass media's own accuracy studies tend to produce more positive reviews, with some sources reporting errors in fewer than 10% of news stories (Edelman, 2018). Within the Indonesian context, for example, Juditha (2013) expounded that most Indonesian media outlets seeking speed in terms of publishing reports, sometimes neglect the importance of assuring news-objectivity, mainly in terms of accuracy, fairness, comprehensive, and impartiality. Nonetheless, the potential for errors has never stopped journalists from endeavouring to report the truth in their stories. The absence of accuracy lessens the credibility of mass media, which could cause public trust to decline and result in the loss of ratings or subscribers.

Juditha (2013) explained that news accuracy depends on the verification of facts, relevance of news sources and accuracy of presentation. In other words, producing a carefully written story requires that a journalist verify or confirm all information and sources, be they numbers, names or statements, as well as ensure appropriate delivery. Charnley (1936) classified three errors that could potentially reduce accuracy in news writing: 1) mechanical or typographical errors; 2) reporter's errors, such as misspelling names, attribution, age, location, time, quotes, grammar, and spelling; and 3) misinterpretation, wherein journalists over- or underemphasise information, thus obstructing the detailed communication needed to give readers a fair understanding of the subject. The first two types of errors are similar to what Maier (2005) called "objective" or basic factual errors in news writing; however, the latter is a subjective error, whereby journalists overemphasise, downplay, eliminate or mislead readers through the use, abuse or lack of use of available information.
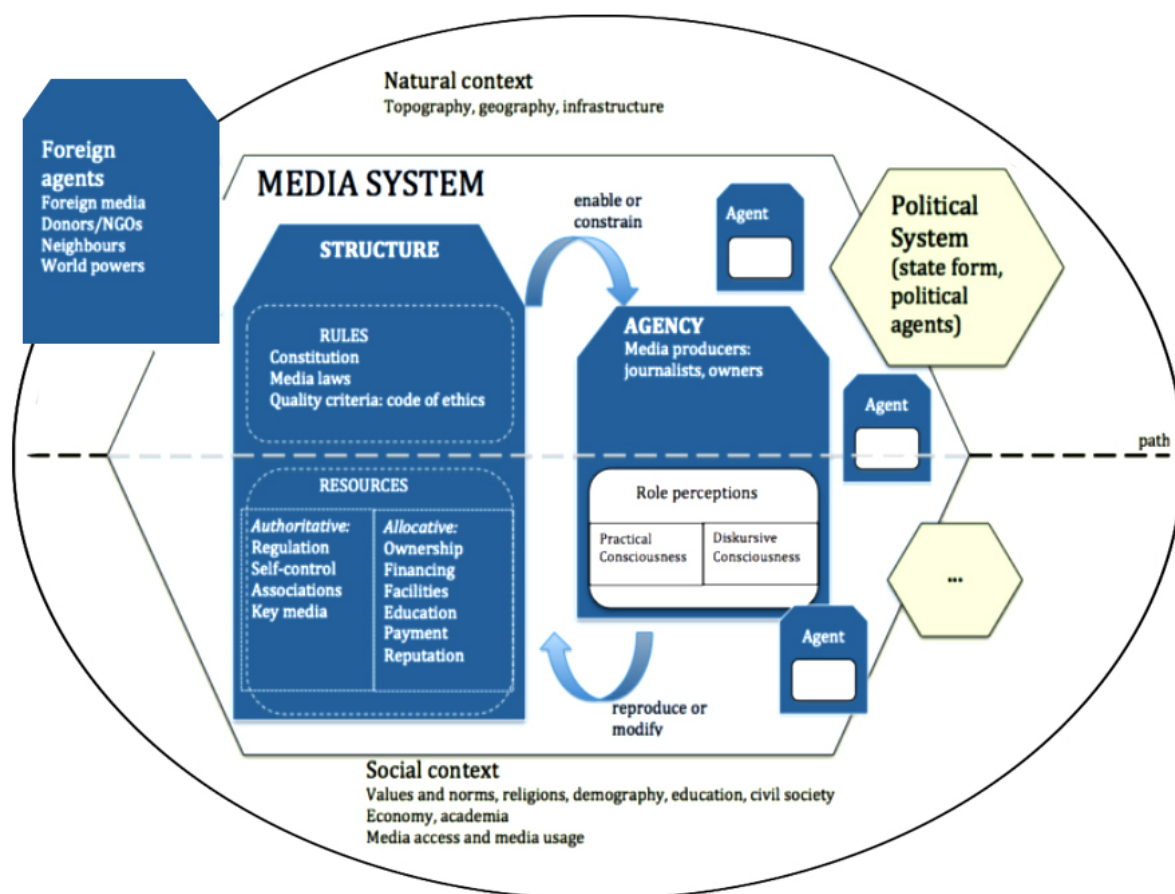
Structuration

Structuration is a process in which social structures are enforced by social agents, such that they function as both the medium and outcome of agency formation (Mosco, 2009). Thus, structuration is characterised by duality, whereby the individual (agent) influences the structure; however, the structure also forms the agents within it. According to Giddens (1984), a structure is a set of rules and resources that are recursively organised. Social agents are aware of the rules that limit their actions in the structure; nevertheless, they continue to apply it to the production and reproduction of their daily actions and social interactions. The agents' awareness of these rules is expressed in practical awareness. Rules limit the social actions of agents within the structure, whereas resources facilitate them to carry out social actions. Resources are defined as the medium of agents demonstrating their power and comprise of both allocative resources with the ability to produce command over material phenomena, objects and goods and authoritative resources, which refer to the ability of producing command over other agents (Giddens, 1984).

Structures are binding to the social system and allow similar practices to occur in various spaces and times (Giddens, 1984). The agents reproduce their social actions in a social system through memories formed by the structure. Their social actions can then also form a structure (rules and resources) in various spaces and times. The process of duality in the structure occurs dynamically and simultaneously.

In this regard, structuration also occurs in media systems (Schädlich & Gordeeva, 2017), and the media structure can also be divided into rules and resources. Media system rules can be written and unwritten, and they can be understood as an official guide that frames the actions of media professionals. Take for example, Indonesian Law No. 40 of 1999 on Press. Despite its responsibility to develop public opinion based upon factual, accurate and valid information (article 6), the national press also plays a role as an economic institution (article 3) (1999). Indonesian Law no. 40 of 1999 on Press describes that presenting both factual, accurate, and

valid information as well as news of economic value is the formula for action in the media system of Indonesia. As for formula, rules in Indonesian Law no. 40 of 1999 describes a general procedure that is tacitly known: informal, widely sanctioned, and frequently invoked and used in conversations, interaction rituals, and daily routines (Turner, 1986).

The media system consists of two forms of resources, namely authoritative and allocative forms. The authoritative form arises from the various coordinative actions of agents in the system as it is embodied in the various regulations and controls in the media system. Media principles are also authoritative resources because they provide the guidance, orientation and standards for operation. Allocative resources are derived from the control of production materials and other aspects in the material world (Giddens, as cited in Schädlich & Gordeeva, 2017). Ownership structures, finances and employment conditions fall into this category, as well as education and access to the journalism profession (Figure 2).

(Source: Schädlich & Gordeeva, 2017)

Figure 2. Structure in the media system

The structure of the media system has close relations with its agents. Agents in the media system in Indonesia include journalists, editors, producers and media owners. All of these agents have their own perceptions of their roles, which depend on their discursive actions and awareness. Awareness refers to the agents' implicit understanding of their actions in various social life situations, formed through reflection. Indonesian journalists maintain that "educating the audience", "reporting things as they are" and "promoting tolerance and cultural diversity" as being the most important aspects of their work (Natalie, 2017). However, not all perceptions

of roles and rules for agents' actions can appear discursively. Thus, media professionals' awareness or perception of their roles can be limited.

In addition, duality can occur in the media system. The structure can curb and facilitate the journalistic work of media agents; however, journalists can also influence the structure by reproducing or modifying it. The media system is present in the social and natural contexts. The latter includes geography, topography and existing infrastructure, whereas the former encompasses various elements of the community's environment, such as religion, values and norms, education and economics, among others. Furthermore, the media system can also be influenced by foreign media agents *via* foreign media principles, foreign donors or non-profit professional institutions.

METHODOLOGY

This study applied the instrumental case study method that enhances knowledge of an issue or gather generalisations through the examination of certain cases (Stakes, 1995). This means that the case studied is not the main focus of the investigation but rather plays a supporting role in facilitating the researcher's understanding of a larger issue. In instrumental case studies, each case is considered to have similarities with other cases and is carefully scrutinised to help the researcher address deeper and broader questions.

In doing so, this study entailed observations and interviews. Observations involved making direct visits and active participation in the journalistic process of *Katadata.co.id* from April to June 2019, so that the researcher could gather the journalists' patterns of working in applying the concepts of data-based journalism. Additionally, interviews were conducted with the CEO of *Katadata.co.id*, Metta Dharmasaputra; Editor-in-Chief, Yura Syahrul; Editor Pingit Aria; and journalists Ameidyo Daud and Michael Reily. Interviews were necessary because case studies must be interpreted through the lens of the interviewees and participants who have important information in related situations (Stake, 2010). The interviews with the participants were conducted from June to July 2019. The participants gave their consent for writer to publish their identities in this paper.

Data from interviews and observations were systematically analysed by organising and integrating them into themes for testing. These themes were derived from theories and concepts assembled from the literature review. The researchers created themes in accordance to the processes followed in data journalism, structure properties, and Charnley's error categorisation (1936). Data were organised using open, axial and selective coding techniques, and then the researchers looked for patterns and relationships between specific details (Neuman, 2014). The data were tested for factuality or validity through verification, whereby the researcher used triangulation by comparing observational data and interview results in *Katadata.co.id*.

FINDINGS

Foundations of Data Journalism Application at Katadata.co.id

Katadata.co.id was established in 2012 during the online mass media growth and development period in Indonesia. At the time, Indonesian mainstream online mass media were dominated by outlets such as *Detik.com*, *Viva.co.id*, *Kompas.com*, *Merdeka.com* and *Tribunnews.com*, which tend to rely on fast journalism to produce instant, brief and easily accessible news. Their aim is to increase clicks and traffic flows on their news portals in order to earn more income from advertising.

Running on a bootstrapping system with limited funds and managed by a small crew of 12 people, *Katadata.co.id* is aware that it cannot compete with mainstream online mass media and understands the need to position itself in order to distinguish itself from the rest of the outlets. Such positioning is required in order for *Katadata.co.id* to have a definitive income and to reduce its dependency on investors.

Based on the above factors, *Katadata.co.id*'s founder chose the genre of data journalism. As CEO Metta Dharmasaputra explained, this genre was chosen for its potential to attract readers from the upper social classes. At the time of the website's establishment, there was a lack of data- and research-supported, economy-based online mass media in Indonesia, and there were not many online mass media focusing on thorough news presented in the narrative form:

> *"Back then, the big data era or such, wasn't heard of yet, but then I thought it would be nice if there's an economy media with qualitative articles supported by data and research."* (Metta Dharmasaputra)

The capabilities of data journalism increased greatly with the emergence of big data usage. Big data refers to the chain of data on the Internet that are too big for standard computer storage and software (Lewis & Westlund, 2015). Big data are generally larger than a terabyte in size, and they can only be stored on 'cloud' or other massive storage systems. The 'universe' of digital data in 2005 was estimated to be in the petabyte range; however, according to IDC, this digital 'universe' increased by 50% from 2012 to 2013 and continues to grow at an estimated 40% per year (2014). *Katadata.co.id* predicted that the big data usage trend would have a significant impact on online mass media journalism in Indonesia. Yura Syahrul, the Editor-in-Chief, estimated that data journalism could generate income by exploiting the differences between its business model and those of other mainstream online mass media.

Whereas most mainstream online mass media focus on advertisement placement as their main income, the data journalism business model prioritises news content subscriptions, which is managed through D-inside content. In addition, *Katadata.co.id* also conducts data selling, research, publication, sponsored creative content (native ads), business consultation, stakeholder mapping and event organising. *Katadata.co.id*'s subscription- and data-oriented business model is similar to those of *Bloomberg, Thomson Reuters* and the *Economist*; all of which provide various data services to their clients, ranging from research and data publication to global economics-related consultation services (Gray et al., 2012).

Yura did not deny that *Katadata.co.id* is still trying to generate income from advertising; however, it is not yet possible for advertising to be the main source of income because advertisers want to keep pace with a high traffic volume of visits, and *Katadata.co.id* has yet to optimise this aspect of its operations.

> *"There is an income for Katadata.co.id from advertisement display, but only in a small amount."* (Yura Syahrul)

Katadata.co.id is currently trying to double its 2018 target to reach 10 million sessions for 2019.

The Application of Data Journalism in Katadata.co.id

The application of data journalism at *Katadata.co.id* begins with coverage planning, which is usually conducted a day before coverage by editorial and data teams. During planning, journalists will offer proposals to each editor. The proposals must fulfil the requirements of an

eligible news story, including the importance, size and proximity. As journalist Michael Reily highlighted, coverage proposals are usually derived from actual issues rather than from data.

The proposals are discussed by the website's journalists and editors before being presented at an editorial meeting the next morning. At the editorial meetings, the Editor-in-Chief, Managing Editor and data team provide input for the coverage proposals, and the data team also provides the editors with relevant data, which mostly comprise a collection of the journalists' daily coverage results. The data are obtained from a range of sources, including government institutions, non-profit organisations, research and university institutions, industry associations and/ or corporations. Some data are also obtained directly from direct search, independent research and/ or the Internet. *Katadata.co.id* may also purchase certain datasets needed for the reporting.

To support the application of data journalism in news production, *Katadata.co.id* uses a specialisation channel called *Databoks* that contains aggregation of data from various sources, as well as a research team whose task is to collect and help process various existing data to be presented in the news. The research team also conducts independent research, which is later processed as in-depth reports by the editorial team. An example of *Katadata.co.id*'s independent research can be seen in its in-depth report entitled *Warisan Kemiskinan Proyek Bank Dunia di Kedung Ombo* released in June 2018 (Tamara, 2018).

All the data gathered by *Katadata* are then sorted and filtered according to need. Filtration is necessary because of the massive volume of big data and the need to collect data with proven validity and reliability. The filtered data are either stored in a data bank called the data management system or published through the *Databoks* channel. As a result, the editorial team can instantly use the data as a base for newswriting or as a complement for existing news.

Journalists conduct coverage after their proposals are approved at editorial meetings. Each journalist covers at least two issues or agenda items each day, and their results are then analysed and written as news by the journalists themselves. Reily reported that the analysing process is done manually. This is because Reily does not have the specialised skills to properly analyse the data, as well as the necessary statistical, computational, and graphic design tools. Yet, the company does not provide them with any data analysis training. Reily also reported that he analyses the data without any help from the data team, and the journalists are not provided with special devices for conducting data analysis. A similar claim was also made by another journalist, Ameidyo Daud:

> *"I usually do the analysing myself, but the topic that I discussed is usually already on the (editor) group. I do all that (data analysis) manually."*(Ameidyo Daud)

The lack of specialised skills and equipment for data journalism shows that there is a digital divide in *Katadata.co.id* editorial agencies. Dijk (2017) defined digital divide as a gap between people who have access to ICT, and those who do not. Steyn and Johnson (2011) contended that the gap is not only related to physical accessibility and ICT infrastructure, but also to people's capability in accessing the technology. This gap can be attributed to economic, political, social, cultural, gender, ethnic, geographical and demographic gaps.

Journalists are also required to produce news items in a short amount of time ranging from around 30 minutes to 2 hours, and each journalist is expected to produce at least six news items daily. Yura contended that such targets are set to increase the website's traffic flow. Thus, despite having a different business model, Yura admitted that *Katadata.co.id* cannot afford to separate itself from its identity as an online mass media outlet.

The news items written by the journalists are stored inside the content management system owned by *Katadata.co.id*. The editors will then edit the news to detect mechanical or typographical errors, reporter errors and errors in meaning. Editing is also done to ensure that

news published on the web page can be easily found on search engines (search engine
optimisation/SEO). In keeping with the website's aim for higher traffic flows, each editor has
an editing target of eight news items daily; however, Editor Pingit Aria stated that the target is
adjusted according to each journalist:

> *"The company has set a target ... there is an annual target. 10 million sessions."*
> (Pingit Aria)

Katadata.co.id then conducts visualisation for the data that have been presented in the
news in order to further attract readers' interest. Visualisation is done by creating graphics that
are published inside the *Databoks* channel. The website also produces a special infographic
called *Ekonografik* ("econographic"); however, while it aims to produce five regular graphic
creations each day, only one to two *Ekonografiks* are created instead.

In addition to being published in the *Databoks* channel, graphics and *Ekonografik* are
inserted into the news items by the editors. Not all news items are accompanied by graphics
and *Ekonografik*; according to the Editor-in-Chief, this is attributed to an insufficient number
of editors as well as occasional incompatibilities between the news and available data:

> *"Until today the articles from Katadata.co.id are not yet 100 percent provided by
> data."* (Yura Syahrul)

Figure 3 summarises the whole delivery process of data journalism in *Katadata.co.id*. It
describes how the news production in *Katadata.co.id* is heavily anchored in data, which are
mined from various sources, both online and offline. Although the process does not indicate
the adoption of scientific and objective methods to employ data as the core of the news (Knight
& Cook, 2013), Figure 3 however shows data-driven journalism, which is part of data
journalism (Constantaras, 2016).
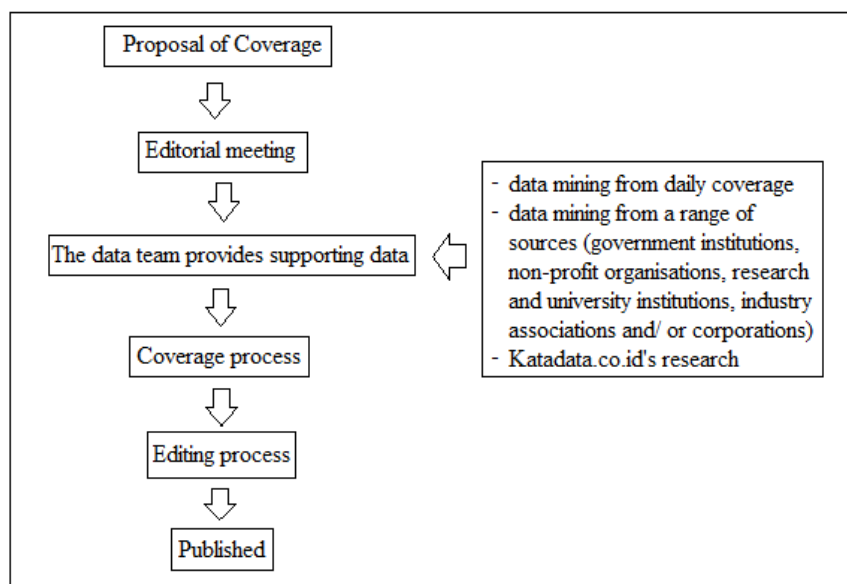
Figure 3. Process of data journalism

Accuracy of News Reporting by Katadata.co.id

Despite the application of data journalism for the news produced by *Katadata.co.id*, this study found three types of errors, which potentially reduce news accuracy, namely mechanical errors, reporter errors and errors in meaning. Reily acknowledged that many of his writing errors were typographical in nature which is a form of mechanical error (Charnley, 1936).

In another instance, Ameidyo admitted that in his reporting on a bilateral meeting between Indonesian President Joko Widodo and Australian Prime Minister Malcolm Turnbull in 2017, he had incorrectly inputted the data for Malcolm Turnbull's name as 'Ross Turnbull,' a former football club goalkeeper from United Kingdom's Chelsea FC. Ameidyo's mistake is called a reporter's error. Charnley posited that reporter's errors are due to the reporter's lack of knowledge, be it name, position, age, location, time, quotation, as well as grammar and spelling (1936).

Ameidyo also confessed having misinterpreted a news context, which occurred while covering an opinion issued by the Audit Board of Indonesia regarding a financial report of the Special Task Force for Upstream Oil and Gas Business Activities (SKK Migas). Initially, Ameidyo wrote that the Audit Board had issued a Qualified Opinion. He then issued a correction by stating that the Audit Board had issued a Disclaimer Opinion; however, after reviewing the audit results, *Katadata.co.id*'s editors corrected the story to state the Audit Board had issued an Adverse Opinion and apologised for the error:

> "The error took place one to two days. I was so embarrassed. I apologised. It was my most fatal error." (Ameidyo Daud)

In addition, Ameidyo admitted to having once committed a data analysis error. Pingit had also committed this type of error when comparing the research results of the Demographic Institute of the Faculty of Economics and Business, University of Indonesia (LD FEB UI), regarding the average income of partners at the Gojek corporation who had exceeded the district/city minimum wage. The research results should have been compared with the results of other similar studies; however, Pingit and several other journalists had only compared the results with the results of their interviews with Gojek partners.

The error drew criticism from several parties, especially Gojek. As a result, the news titled *"Not All Gojek Partners Receive an Earning Equal to Minimum Wage"* which aired on March 22, 2019 underwent correction in the title section. Apart from that, *Katadata.co.id* added Gojek's explanation in the last paragraph.

> "So, we had started from planning. On the planning, Yura and all that had greenlighted the plan. It was approved in the meeting. But when [the news] was published, there was another input. So it underwent a correction."
> (Pingit Aria)

Misinterpretation of the news context and data analysis errors as described by Ameidyo and Pingit are a form of error of meaning (Charnley, 1936). Maier calls these errors as subjective errors, whereby journalists overemphasise, downplay, eliminate or mislead readers through the use, abuse or lack of use of available information (2005).

Structuration of Data Journalism at Katadata.co.id

Findings in the application of data journalism and lack of accuracy in *Katadata.co.id* explain the relationship between journalists as the human agency and *Katadata.co.id* as the media system. The pressure from media management to achieve website traffic through real-time online news production can be identified as the external force that confines journalists from

practising maximum accuracy in news production. Editor-in-Chief Yura Syahrul admitted that accuracy is important in data journalism. However, *Katadata.co.id* cannot avoid the fast-paced journalism practices of typical online mainstream media. This is evidenced in its news-making pattern, which is still aimed at enhancing website traffic. The sooner a news item is produced, the sooner readers can access it; and more clicks mean a larger number of page views, which in turn translates to increased potential for advertising revenue (Margianto & Syaefullah, 2012).

Thus, although journalists in Indonesia are bound by and agree with the Indonesian Law No. 40 of 1999 on the Press (1999), they are constrained in practising accuracy in news production by the structure. Not only does fast-paced journalism leads to financial profit, readers too prefer to get their news and information as quickly as possible and are less concerned about the verification process and partiality in online mass media (Margianto & Syaefullah, 2012). In other words, *Katadata.co.id* as a media system is bound by the bigger social system; thus portray a system of interactions, through which fast-paced journalism continuously replicates and facilitates the same system (Giddens, 1984).
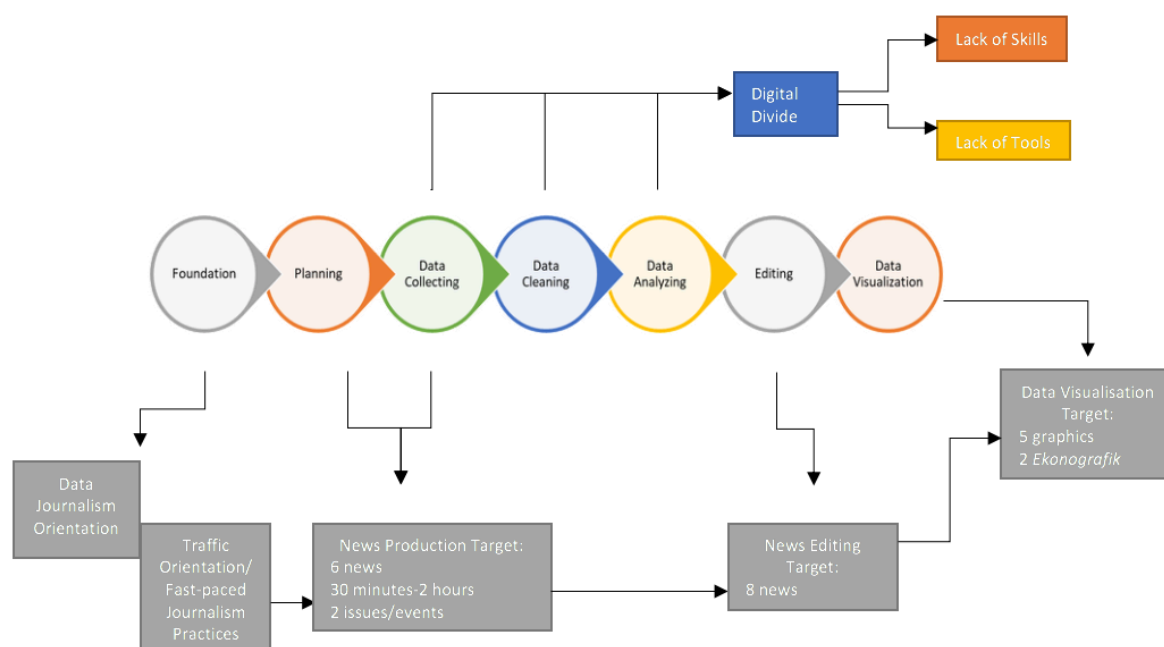
Figure 4. Structuration in Katadata.co.id

The editor-in-chief as the authoritative resource expects fast-paced journalism practices from his/her journalists. He/She sets a minimum quantity of news items and work period to augment the number of viewers and advertising revenue. Although they work within the same media system, journalists do not have complete power as they are constrained by the regular modality— the news industry in Indonesia mostly still works on the basis of speed and profit. It is evident in this study that resources in *Katadata.co.id* are not distributed evenly. Editorial meetings where journalists are involved does not guarantee them to have autonomy in their work. Instead, journalists are required to produce at least six news items per day within an extremely limited time period.

Producing fast news, in turn, is a recursive activity within the media system. The agents—in this context, *Katadata.co.id's* journalists—confirmed that to expedite the news production process, they must send the items immediately after the reporting, and they usually use their mobile phones to write. To meet their quotas, *Katadata.co.id* journalists also often break down an issue or an event-based report by separating it into several items with different angles or sources. According to Daud, the more sources that talks about the issue, the more

news items they can produce. Yet, only in and through these activities do journalists in *Katadata.co.id* make news production possible. In other words, activities in data journalism integrate social action with the larger system of which journalists are a part.

Further, it is also evident in this study that journalists in *Katadata.co.id* recognise the demand for speed and quantity as the main factor influencing inaccuracies. This references to Giddens' argument that every human agent is knowledgeable in the practical consciousness (1979, 1982). However, it cannot be denied that there are also significant unacknowledged circumstances which can lead to inaccuracies such as lack of resources in applying data journalism practices. As *Katadata.co.id* does not train its staff with data journalism skills, its journalists lack the specialised skills to properly analyse data, as well as the necessary statistical, computational and graphic design tools. Furthermore, its data team also do not provide any assistance to the journalists leaving them to analyse the data manually on their own. In the end, so far as technology is concerned, agents may become alienated from new emergent rules and thus are likely recreate the same social structure.

CONCLUSION

Katadata.co.id claims to apply data journalism as it believes that data journalism can provide potential revenue through news subscriptions, data sales, research, publication, sponsored creative content, business consulting, stakeholder mapping and event creation. However, news production in *Katadata.co.id* still panders to website traffic. This manifests in the form of target quantities and speed of news writing, which in turn has led to reduced news accuracy. Further, inaccuracies also occur because *Katadata.co.id* journalists lack data analytical competency, data journalism training as well as special tools and technical support to facilitate data analysis.

This study argues that as a media system, *Katadata.co.id* portrays the duality of structure. Through their activities within the structure, and additionally through their lack of technology know-how, journalists become the elements that enable the reproduction of the same structure. The lack of capability is a key component of agency that reduces the degree of autonomy amongst *Katadata.co.id*'s journalists. As such, agency and structure mutually interact to recreate the same system.

Katadata.co.id must immediately address these structural problems. As a media outlet that applies data journalism, *Katadata.co.id* should no longer apply the fast-paced journalism practices that are so common among other mainstream online mass media outlets but rather focus on its data journalism content, which can be improved if accurate. The organisation needs to change its journalistic orientation from one that is focused on speed and quantity to one that is focused on the quality of its content to make it more comprehensive and accurate. In addition, it is equally important that *Katadata.co.id* provides its journalists with training and specialised tools to facilitate data analysis.

As this study is limited to data journalism conducted by only one online media, *Katadata.co.id*, future research should be focused on determining the broader patterns of data journalism in Indonesia. It is also necessary to conduct a quantitative content analysis of news from online mass media that apply data journalism so that the issue of news accuracy can be understood in more detail.

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