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EMPLOYING ONLINE AND OFFLINE INTERPRETIVE: CASE STUDY IN UNDERSTANDING E-PROCUREMENT EFFECTIVENESS FROM USERS AND IMPLEMENTERS PERSPECTIVES

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ABSTRACT: *This paper aims to shine a light on how an interpretive case study qualitative is being used in understanding the effectiveness of government e-procurement implementation and use contexts. Our study is based on a case of social media discussion and posting on government e-procurement implementation and use in Indonesian regency. We collected data from e-procurement users' social media exchange, postings, and conversations posted by local businessmen and companies and from offline in-depth interviews with implementers. The findings show that social media observation can be used as research setting to enhance understanding of a topic being studied and as a medium for triangulation in an interpretive study. Our study also proves that using social media in interpretive study can reduce challenge in participants' recruitment, access to study sites, and bias in interviews. More importantly, data from social media can enrich and verify offline interview data. While this study contributes to online interpretive research, the data was collected from online participants whose identities are difficult to verify. The data neither was validated with face to face interview. The use of social media for an interpretive study also raises an ethical dilemma because we observe and draw content from posted material in an online setting without users' consent. This needs to consider new ethical issue by exploring ethic discourse in social media study.*

KEY WORDS: social media, interpretive research, e-procurement, case study, research approach

INTRODUCTION

The emergence of online space has encouraged researchers to extend their data gathering approaches (Cantrell & Lupinacci, 2007; Lefever, Dal, & Matthíasdóttir, 2007; Wood, Griffiths, & Eatough, 2004). Positivist researchers have taken more advantages through the use this online setting in their research practices. For example, they gather data through web surveys (Lefever et al., 2007; Wright, 2005) and emails (Campbell, Maglio, Cozzi, & Dom, 2003; McCoyd & Kerson, 2006; Sproull, 1986; Wattal, Telang, Mukhopadhyay, & Boatwright, 2012). Interpretive researchers, on the other hands, have yet to utilize this online setting for research arena. Interpretive researchers mainly focused on gathering data through conventional methods such as interviews (DiCicco-Bloom, 2006; Frey & Fontana, 1991; M. D. Myers & Newman, 2007)), focus groups (Morgan, 1997; Parent, Gallupe, Salisbury, & Handelman, 2000), and ethnographic studies (Crabtree, Nichols, O'Brien, Rouncefield, & Twidale, 2000; LeCompte & Schensul, 1999).

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Online settings allow interpretive researchers to have a greater ability to access a larger population in their study(Sade-Beck & Beer-Sheva, 2004). The population can include participants who are challenging to study (Cantrell & Lupinacci, 2007) such as small numbers of participants or a geographically dispersed sample.Social media has emerged as the latest online space that provides opportunity for users to produce online content, such as by posting texts, photos, and videos, and at the same time the users consume the content by viewing others' post (Guo, Tan, Chen, Zhang, & Zhao, 2009; Zeng & Wei, 2013). The social media sphere can be functioned as an intersection of activities for the producers and users and these activities create settings for researchers to investigate a phenomena (Aral, Dellarocas, & Godes, 2013; Pousti, Urquhart, Burstein, & Linger, 2013). This implies researchers will be able to extend their research setting to a broader environment where they are not limited by space and time. Kane &Fichman(2009) even strongly urge researchers to reconsider core research practices that were developed for paper based exchanges in response to new technologies.

Even though interpretive studies point out that interpretive research focus on understanding action and interaction of human and technology within organization settings (e.g. Doolin, 1998), such studies have caused significant limitation and challenges when it performed in conventional context(Pousti et al., 2013)such as participant recruitment (Eide & Allen, 2005; Patel, Doku, & Tennakoon, 2003) and limited access to observe all material transparently and what is going on in the research settings (Vaast & Walsham, 2013), and bias in data collection such as interviews which may take place in a very artificial situation due to time pressures(M. D. Myers & Newman, 2007, p. 3) in the interview sessions.

Instead the use of social media in interpretive research can enrich our data source (Urquhart & Fernandez, 2013) and enable triangulation(Urquhart & Vaast, 2012) to enhance our understanding on a topic being studied, the use of social media as a setting in interpretive research is limited explored and researchers lack of familiarity with this new setting (Vaast & Walsham, 2013). Motivated by this phenomenon, we intent to explore how social media observation can be used as a research setting in interpretive study to enhance our understanding of a topic being studied.

Using our experience from a case study of social media discussion on government e-procurement implementation and use within a regency in Indonesia, we illustrate how social media observation (Vaast & Walsham, 2013) users' posting, comments, and conversation can be used to complement conventional data collection (interviews) to strengthen our understanding of a topic being studied. We believe that incorporating social media in our interpretive study can deepen our understanding and allow triangulation in a topic being studied. This study provides insights on how social media (Facebook and Blogs) observation can be used in an interpretive study to support insights gained in a more conventional manner.

The structure of this paper is as follows; the next section presents theoretical constructs of social media in an interpretive research study and is followed by an overview of government e-procurement. The research methodology is presented in the next section along with the case context description. Findings of this research are then presented, followed by the discussion and conclusions. Limitations and future research are discussed in the final section.

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METHODOLOGY

RATIONAL

We observed social media discussion, postings, and material exchange to enhance our understanding of e-procurement implementation and use. We understand the social media observation as the data gathering from social media use through observation and analyses of the digital text (Urquhart & Vaast, 2012) to harness our qualitative data. We argue that using social media as research setting allow us to obtain a rich source of data to analyse an otherwise elusive research subject (Greene, Choudhry, Kilabuk, & Shrank, 2010; Koch, Leidner, & Gonzalez, 2013) compared when it is carried out in an offline context. We position ourselves with Hookway's (2008) view who suggests researchers should adjust their research approach with the emergence of social media technology. Majchrzak(2009) even suggest all web.20 technologies research should utilized new approach to establish a theory in IS research.

We mimic previous studies which have also gathered qualitative data from social media use. For example, Germonprez & Hovorka (2013) use digitally enabled social networks (DESN) generated various digital contents to understand enablers and constraints underlie trajectories of member engagement, which the data was used to develop new methodological consideration for net-ethnography approach.Cunha &Orlikowski (2008) use online forum to study how employees deal with changes in organizations, whilePalen, & Shklovski (2008) gather data from Craigslist, Facebook and Flickr users to understand how citizens respond to information and cope with stress during and after wildfire disaster. Hookway (2008) used a Blog in his qualitative study to understand the discussion about the nature of the "good life" between young people. Hookway studied more than 200 posts and comments on the Blog.

Within public sectors, a number studies have utilized social media as instrument to understand government policies implementation and citizens opinion. For example, Sobkowicz, Kaschesky, & Bouchard (2012) mined public opinion on social media to study impact of government policies implementations. The opinion includes public arguments and sentiment toward variety government policies. Meanwhile, Bertot, Keager, Munson, &Glaisyer(2010) studied how social media improve government transparency through involvement of public in government policies implementation.

APPROACH

This study selected a case of local government e-procurement users' discussion, exchange, and material distribution on social media sphere. The output of social media discussion, exchange, and material distribution is "digital text" (Urquhart & Vaast, 2012) which become our level of analysis. The digital text includes conversation, images, photos, videos, and other online material. We argue that this digital text produces thick description of the phenomenon being sought (Cresswell & Miller, 2000; Geertz, 1973; Pousti et al., 2013; Urquhart & Vaast, 2012). In our study context, the digital texts focus on the social media threads as a whole (Urquhart & Vaast, 2012) which were obtained from Facebook discussions, exchange, and post, and a company blog. The social media discussions involve local businesses and citizens. We use

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social observation to harness the stakeholders' views on e-procurement implementation and use to enhance our understanding of our offline study.

DATA COLLECTION

Offline data were gathered through semi-structured interviews, which lasted between 45 minutes to one hour. All transcriptions were sent back to the participants for final confirmation of content and meaning. There were 9 participants from management level and from technical employees' level. Data collection from different levels of an organization hierarchy will contribute to drawing more informed conclusions from this study (Scheepers & Scheepers, 2003). The physical field visit was carried twice and several follow-up contacts were also made to gain more insights. These include emails, phone calls, and online chats. Field notes and memos were made during field visits.

Following Pousti et al., (2013) and Vaast & Walsham (2013) we gathered online data by observing and capturing Facebook and Blog postings, material exchange, and discussions during three months period. We captured 149 Facebook conversation threads related to e-government procurement implementation and use discussion posted by individual and groups during the study period. We also analysed a company Blog that posted a number material related to that issues. The monitoring of companies and staff posting, exchange, and distribution of material and conversation among them was intended to increase our understanding, as suggested by Kietzmann et al., (2011) on the local businesses perception on the e-government procurement implementation and use. Some studies have used blog as data sources(e.g. Aggarwal, Gopal, Sankaranarayanan, & Singh, 2012). Table 1 shows detail of online data collection.

Table 1. Online data sources and characteristics

Data sources		Data characteristics	Period of study
Online	Facebook observation	149 Facebook threads	We observed and captured postings, material exchange, and discussions during three months period
	Blog	A company Blog contents	
Offline	Semi-structures Interviews	Semi-structures interviews involved 9 participant form different level of local government hierarchies	The field visit was carried out three times and then followed by several phone calls and email to gain more insights.
	Written materials	Annual report, regulation, e-procurement use strategy, and other written material	Written materials were gathered during field visits
	E-procurement website	Contents of LPSE website	Online access when it is required

Some materials posted by users were downloaded and conversation threads were also copied for data analyses. A thread is a conversation between a single or group of individuals. Since there was a large number of threads, we extracted the threads according certain topics as practiced by Zimbra, Fu, & Li,(2009). The threads came from different distinct discussion during period monitoring. Codes were generated from the distinct discussion threads as practiced by Kane &Fichman(2009) which we considered relevant with our topic being sought.

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DATA ANALYSES

Data analyses broadly followed the method outlined by Strauss and Corbin (1998) in that the data analysis was carried out through iterations; open coding, axial coding and selective coding. In the coding process we followed Urqurhart & Vaast (2012) bottom up coding approach where the codes suggested by social media data. Through coding, we were able to identify concepts and relationships among data to establish a theorization that fits our empirical subject and questions(Vaast & Walsham, 2013).

We also took into consideration Urquhart, et al.,(2010) data conceptualization strategy in gaining in-depth insight and understanding. The conceptualization process is started from a simple process (description) where the researcher begins initial understanding of the concepts at the level categories and properties through open coding. Conceptual saturation was reached when no new categories were generated from the open codes and the gap in emerging concepts were filled (Kendall, 1999)

Online data transcripts were in Indonesian during analysis process to maintain original meaning and sense. However, the quotes were translated into English when they were used in the paper. We used the parallel translation format (Nikander, 2002, p. 142) in which the data is presented in a side-by-side column (Nikander, 2008) when the quotes were translated. The quotes were transferred into a table and then the codes were translated into English and then placed in another column of the table. The translation was verified with the Indonesian quotes and with the context where the codes came from (full transcription texts). This was intended to prevent mistranslation of the quotes as well as preserve meaning and sense.

CASE DESCRIPTION

According to the Economist (2011) corruption and collusion in Indonesia is rampant since Indonesia former president Suharto. The corruption involved not only government official but also political and private companies. Since Indonesia current president Sosilo Bambang Yudhoyono leadership, Indonesia government is trying to combat corruption within all government institutions at all government levels through variety of mechanism such as low enforcement, building an *adhoc* committee (Commission for Corruption Eradication = KPK), and technology implementation.

Technology implementation and use to combat the corruption and collusion was initiated when Indonesian government implement e-procurement system. E-government procurement was initiated when Indonesian central government enacted Presidential Decree No. 80 year 2003. The presidential decree allows government institution such as central government departments and local government to tender government projects, goods, and services through technology means. However, e-procurement become mandatory when Indonesian president issued Presidential Instruction No. 54 Year 2010 to impose all government institutions at central and local level to establish an electronic procurement service work unit (LPSE).

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Luwu Utara regency started to implement and use e-government procurement in 2009 to improve transparency and efficiency in the procurement of goods and services in the regency. The regency experienced uncertainty in goods and services auctions, which was carried out with manual systems. Collusion and corruption was a major problem during offline/manual tendering processes. The collusion and corruption involved private companies' employees, non-government organizations (NGO) members, regency project leaders, high government leaders and families, employees, and family members of politicians.

Manual tendering was plagued by a lack of competitiveness and transparency in the auction process. This caused high dissatisfaction among local businesses, in particular amongst small contractors that experienced difficulties in winning government contracts. Most of the project auctions were obtained by certain big companies or companies that have a relationship with higher leaders' families or local parliament members. Companies that did not win a project often confronted local department leaders and project leaders. As a result, in early 2009, the local leader and local parliament members committed to the implementation and use of an e-procurement system to solve the problem.

The regency LPSE unit is responsible for the e-procurement system implementation, training, and maintenance, as well as providing services to the Procurement Services Unit (ULP) and other stakeholders such as businesses. Since the implementation of e-government procurement systems, the regency has been able to significantly reduce collusion, corruption, and improve transparency (KREDIBEL, 2012). As a result, the regency received the Indonesian Government Award (IGA) in 2011 as the most successful regency in the implementation and use of e-government systems to improve transparency in government procurement. Since then, the regency has become a model of a transparent and accountable local government in eastern Indonesia.

The implementation and use of e-procurement within the regency's goods and service procurement has attracted stakeholders, businesses and citizens, attention to monitor the accountability and transparency of the e-procurement process. They use social media to discuss, exchange, distribute contents relate to projects procurement process and government employees behaviour. Local businesses managers and staff are connected each other through Facebook site and Blog. Local companies established Blog to discuss and post digital contents. Their postings included confidential documents obtained from auction process such as their own documents. The postings were intended to obtain other businesses comments or to respond to auction committee members.

FINDINGS

Our data analyses of e-procurement users' discussions, material exchange, and distribution observation on Facebook and a company Blog highlighted mix results compared with offline study. Three themes were generated from the social media observation and each theme is discussed together with offline findings. Theme 1 highlighted that there is a difference in perception on what constitutes professional actions. Theme 2 highlighted a variation in the perception of the practise of collusion by the regency's employees. Evidence from Theme 3

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showed that regency employees provide advice to businesses. Each one of these themes is discussed in more detail.

Theme 1 - Differing Perceptions on what constitutes professional employees

During offline formal interviews, a number of interviewees said that Auction Committee Services Unit (ULP) and E-procurement System Unit (LPSE) members are professional staff because they were universities graduates and accredited. Employees were recruited from a number of universities and were accredited by National Agency for Government Goods and Service Procurement (LKPP). During an offline interview, a participant said:

> *The staffs in ULP are the collection of all committee from all departments who have been accredited in goods and services procurement. Meanwhile, staff who operate the system in LPSE have a bachelor's degree in computer science. We assigned ULP staff to four divisions; construction procurement, civil construction, goods procurement, and services procurement according their specialised skills* (L1).

The availability of well-educated staff would lead to professional conduct and was intended to eliminate misconduct in all activities to reduce complaint from local contractors. However, our observation on business staff's Facebook postings shows that their perception of professionalism differs from those stated by employees. Social media users expressed their opinion about the lack of professionalism of both LPSE and ULP staff as shown in the following conversations. The users and company name are abbreviated.

WDPK: (a company director) posted as follows:

WDPK : *Project document evaluation was not clear, there was no explanation from the auction committee, do you think committee members are accredited?????*

Conversations:

WDPK : *our question is what was our mistake? Why they disqualified us????*
YH (a user) : *Sent your complaints……slap the committee….*
WDPK : *all not clear…started from auction document submission, evaluation process, and announcement…..all careless*
YH : *all like that…my experience in regency of* Rokan Hilir *was like that too..*
WDPK : *this is very odds Mr YH..as far as we know the leader of the auction committee and members were accredited by LKPP..*

Our observation on a company blog also found similar posting. According to the business employees, the auction committee acted unprofessionally in a project auction. Another company staff posted in their blog as follows:

> ***"FABRICATION" ANNOUNCEMENT OF PROJECT WINNERS AND EVALUATION RESULTS BY LUWU UTARA AUCTION COMMITTEE"***
>
> *Things that we consider all funny and lies are included:*

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1. *There was an error: "They changed project budget of Budget estimation section. Pipe installation pvc aw 3/4" from 708,02 billion rupiah to 708,20 billion rupiah"*
2. *There was an error: "The price of a pipe pvc aw 3/4" more than 110% from regulated price which is 25.000,-rupiah/meter become 100.000 rupiah,-" per meter.*
3. *Our bids and another company in one group (CV. T E) were disqualified without sufficient explanation. They only said our design resemble building development design rather pipes installations design. Why????*

The posting generated 57 responses. It is clear from the offline interviews that the regency management perceive that they have addressed the issue of professionalism by employing university graduates and LKPP accredited staff. However, businesses evaluate the way in which regency staffs conduct the auction to evaluate the professionalism of staff. The evaluation of the concept of professionalism from both perspectives leads to a better understanding of what the real issue with professionalism is.

THEME 2 - COLLUSION AND CORRUPTION MAY BE STILL PRACTICED

The use of e-procurement systems has become the means by which the regency ensures transparency, combats corruption, and gains their citizen's trust. The implementation and use of e-procurement is considered to have been successful in building local citizens' and companies' trust in the procurement of goods and service by the regency. A participant from the regency in an offline interview indicated this success as follows:

> *Combating corruption is more than arresting corruptors but we need to use systems that prevent government employees from violating the rules. Other than that, our citizens' trust to this government was at lowest point. Through implementation and use of our e-procurement systems, this government regained our image which was almost lost.* (L1)

Each regency department has a budget which is spent on a variety of local government projects every year. The realization of those projects requires involvement of local contractors. The main responsibility for the budget expenditure is the head of departments who, then, forms an auction committee to tender their projects. Previous manual tendering systems were not transparent and the project's auction committee often failed to reveal the auction process. After the implementation and use of e-procurement system, the procurement processes become more transparent and employees are no longer in pressures as indicated in the following comment:

> *In the past there were many companies unsatisfied with the auction process and then they sent a huge number of complaints and protests to the auction committee because the process was not transparent. Some even came directly to the office and try to attack government staff. This caused high psychological pressures in the committee which influenced their job performance. Then we think, we have to find a solution for this problem…after the implementation and use of the e-government procurement system, the auction committee receive very few complaints from the companies and we can work easier* (L3)

Our observation on Facebook posting shows that local companies and citizens are still not satisfied with the online auction system. They still suspect the employees practice collusion

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and corruption in particular when the auction process lacks transparency and has a number of inconsistencies as shown in the following conversation:

A Facebook user (WS) postes as follows:

WS: *The project tendering announcement is on 15 June at 15.40pm s/d 23.59pm (There was no announcement until 17 June up to 21.54 pm.*
Complaint should be made by 18 June between 08:00 am to 22 June 16:00pm
Who want to complain___??? No winners have been decided yet my friends___????

Conversations between Facebook users:

HP: *I cannot imagine …haaa*
FS: *magic tendering…….*
WS: *Online tendering with manual style……..*
AM: *new regulation…. Online tendering with manual style……*
GZ : *artificial online tendering…. It just a camouflage to conform to regulation…..*
AD: *There is no guarantee …there is always a room to negotiate (collusion)…electronic system should be faster and transparent…but the system malfunction always become a reason..(to make collusion)*
KB: *ghost tendering…..change the head of department…..sent him back to his hometown..*
DC: *this all games…I suggest to print on screen so we can use as evident and make a report..*

The above conversation was supported with contract document images on the Facebook page. The conversations show that online tendering announcement for a specific project should be released on 15 June and bidders can submit their complaints on 18 June. However, until 17 June at 21.45 pm, the results were not yet released. This means bidders did not have enough time to respond to the announcement. This inconsistency has caused companies to suspect auction members are colluding. This indicates that the regency still does not have the trust of businesses and that they have to be very careful in their actions as the first reaction from businesses would be that something untoward has taken place.

THEME 3 – BUSINESSES ENGAGEMENT TO IMPROVE KNOWLEDGE

At the beginning of e-government implementation and use, the regency started educating local businesses to use the e-procurement system. The regency's business knowledge and skills were improved through engagement with LPSE staff. The regency provided a computer room that was utilized by companies to obtain skills related to e-procurement. The regency LPSE assigned staffs to provide assistance to companies when interacting with the system. A participant said in an offline interview as follows:

> *When we launched the system we knew that most companies and its employees did not understand about online auction system and they did not know how to use it. As a result, we provide a computer room next to this office. There are also two instructors who can help them any time they need. Some companies from other regencies that want to bid on a project in this regency do not know how to use the system such as how to register their*

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companies online. They can come here and the instructors help them to register their companies on the system (L.3)

The regency employees' engagement with business to provide knowledge and skills are continuously practiced. The following conversation show how government employees still engage with companies and staff to inform them on how a company can obtain user name to log in to the system.

Another business man (RA) posted on a social media site as follows:

Is that possible a company put bid in different projects that require different qualifications (goods procurement project and construction project)? The project worth 966 million and 3.7 billion…please opinion and suggestion….

DY : *you can check the company businesses licence to get detail..*
RA : *Mr DY, in my opinion .. a small company is only allowed to bid a project with budget lower than 3 billion rupiah and a big company can only put a bid on a higher budget project*
IS : *I don't think like that… I think there is regulation number 20 in 2008 that regulates which company can do certain projects. Companies should have certain human resources criteria to do a project….if they are qualified to do construction projects they are eligible for that type projects only..so check the company licence …do they have construction licence or goods procurement licence…*
AI : (Employee) *if you look at article 6 verse 2 in the regulation..it clearly states that what make a company can bid a project depend on their technical competency, human resources, capital, and equipment ..not the size of the project. If a company has the requirement, the committee can not disqualify the company..*

One of a government employees (AI) respond to the posting above to clarify that different project can be bid by a company that has a specific qualification. This interaction was part of business education toward online auctions in the regency. The government employee educated the companies' staff regarding regulation applied in auction and which company can bid for a certain project. The conversation is consistent with our offline interview findings that employees are committed to educating local businesses in using e-procurement system.

DISCUSSION

The purpose of this paper was to show how an interpretive case study can be used to enhance our understanding of a topic being studied in an online and offline context. This purpose was achieved through observation of social media discussions, postings, and exchanges by e-procurement users within a local government and offline in-depth interviews with local government staff. Between offline and online findings show mix results regarding themes generated within both contexts. The findings show that there is a discrepancy in perceiving what constitutes professional employees by offline and online participants. Our offline study found that collusion and corruption were no longer practiced after e-procurement was used, while our social media observation shows otherwise. Regarding employees – businesses

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engagement to improve knowledge on e-procurement use we found consistency between offline and social media study.

The results from the offline interviews show that the regency employees in procurement service and e-procurement system management units are highly professional and accredited. The regency interviewees asserted that the professional staffs are able to eliminate errors in system use and malpractice in auction processes. This led us to believe that e-procurement auction and the system were managed by professional staff, who are able to manage the system without error and that auctions are practiced transparently. However, the social media postings and conversations indicate that regency employees are not considered professional. Many mistakes were made in managing the system and auction process. The local businesses were not satisfied with the government employees' professionalism as they evaluate the actions of the employees and not just their qualifications.

Similarly, claims were made in offline interviews that the regency has gained business and citizens' trust and that collusions no longer take place in regency auction processes. Instead social media conversation showed that local businesses suspect that collusion is still practiced by auction committee. The companies' suspicions were based on inconsistency of auction announcements and lack of transparency of auction processes. Companies did not get a clear explanation regarding how the auction committee make a decision in the system.

On the other hand, our findings also show consistency between offline interview and social media observation. For example, a participant in offline interview said that staffs who manage the e-procurement system consistently educated company staff to provide skills and knowledge in e-procurement system. The finding is consistent with our social media monitor where government employees responded to company staff enquiries. The government employees provided companies staff with knowledge and skills.

Regardless the evidences consistence or not between offline study and social media observation, our findings on social media observation can significantly contribute to our understanding of the use social media in interpretive study. Our findings prove that social media observation can be used as setting to extend of data gathering and as medium for triangulation as argued by Urqurhart & Vaast (2012) to enhance the topic being studied. Therefore, we addressed our research question through discussion of our findings base on two aspects; social media as a new setting to enhance data gathering and social media as medium for triangulation in an interpretive study.

INTERPRETIVE APPROACH TO ENHANCE DATA GATHERING SPACE

The first two themes show different findings between offline and social media observation. If we take for granted that the social media conversation exchanges are accurate and true, then we can conclude that differences in perception exist between the regency employees and users of the e-procurement systems. However, the participants interviewed may not have said the wrong thing about the enquired phenomenon but they might be under time pressures in the interview sessions which reflect that the "interviews [take place in] a very artificial situation" (M. D. Myers & Newman, 2007, p. 3). This may lead to a lack of descriptive validity or factual

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accuracy of a topic being explored (Johnson, 1997) which means what participants say may not take place in the actual context.

This supports the view that that conventional interview in interpretive studies can be problematic and participants might "*create' their own phenomena to satisfy or to frustrate researchers or control researchers*(Bauer & Jovchelovitch, 2000), such as by saying what they want to say to meet researchers expectation (Kleinknecht, 2007). In offline interviews, informants might also be influenced by cognitive and emotional due to interactions with researchers which then causes data reported by the informants may lack correspond with objective reality (Dean & Whyte, 1958).

The challenges could be reduced when an interpretive study took place in social media sphere. We argue participants in social media space express their opinion freely through the production and consumption of content in online space(e.g. Aral et al., 2013; Guo et al., 2009; Kaplan & Haenlein, 2010; Zeng & Wei, 2013). As the users are not confronted by face to face interaction with researchers and time limitation,(for example, in offline context a researcher usually exerts significant power in their engagement with a participant (Karnieli-Miller, Strier, & Pessach, 2009) which left participants little room to express idea), the production and consumption of the digital texts are expressed freely. This allows researchers to observe the phenomenon in a more natural setting which become a foundation to the integrity of the observation (Cresswell, 1998) in an interpretive study.

Moreover, unlike observation in traditional research settings where researchers experience lack of transparency in observing all ongoing phenomena, social media sphere provides continue access to previous and ongoing online data (Vaast & Walsham, 2013). For example, our experience prove that we were able to access data from the social media in multiple time as practiced by Susarla et al., (2012). During period of our observation, we visit and revisit previous and ongoing Facebook threads and a company Blog content as argued by Vaast & Walsham (2013) to conceptualize our understanding.

Our social media observation included various discussion texts, images, and online document posted by users were used as a basis to enhance our understanding on the topics we were seeking for. Our themes were developed based on analysis all types of the data such as text contents, photos, and images generated from different social media sites users (e.g. Aral et al., 2013; Guo et al., 2009; Kaplan & Haenlein, 2010; Zeng & Wei, 2013). At the same time we were also able to develop online coding which means our initial coding was developed when we started observing the social media contents (e.g. Mossberger, Wu, & Crawford, 2013).The online contents were produced by different social media sites (e.g. Xia, 2013) allow researchers compare and re-compare the data. For example, in our case a participant uses Facebook and also a Blog to express their ideas. This implies that social media can be also a source of rich data (Greene et al., 2010) that can be used to strengthen our understanding of the phenomenon through the utilization data across different sources.

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A MEDIUM FOR TRIANGULATION

Triangulation is a strategy to "*validate data and results by combining a range of data sources, methods, or observers*" (Minger, 2001, p. 244). Many studies (e.g. Angen, 2000; Cresswell, 1998; Pyett, 2003; Whittemore, Chase, & Mandle, 2001) argue that triangulation can be used to achieve validity through building consistency across data source and approaches. Lack consistency across the data and approached is considered weaken the evidences. However, Patton (1990) suggests to view this inconsistency as an opportunity to deepen understanding of a phenomenon.

Our findings support both arguments where it can be used for validation and deepening insight on the topic being studied. Our social media data can be used to validate the findings from offline study such as how far the phenomenon we found on the social media observation correspond with our findings from the offline interviews and field visits. This type of validation can be considered as environment triangulation which "*involves the use of different locations, settings, and other key factors related to the environment in which the study took place*(Guion, Diehl, & McDonald, 2011, p. 2). For example, Sarker & Sahay(2004) observed participants (communicate face-to-face) physically and virtually to understand collaboration in information system development an in their interpretive study. Sarker & Sahay (2004) argue that even though the research process become complex due to data overlapping between both environments but this overlapping "*provided opportunities for triangulation of the 'virtual' and the 'real' understanding*" (p.7).

Our social media observations also enable triangulation based on data sources. As we obtained data from different social media sites (Facebook and Blog), we were able to triangulate the data similarities and differences across Facebook and Blog sites (e.g. Aggarwal et al., 2012; Meijer & Thaens, 2013; Williams, Trammell, Postelnicu, Landreville, & Martin, 2005). The data from Facebook, for example, was use to validate data from the Blog and otherwise. This provides opportunity for us to build consistency among the findings.

In case of our social media findings contradict with offline findings such as in the first and second theme, this can be functioned as medium to deepen our understanding as argued by Patton (1990) and Olsen (Olsen, 2004) that inconsistency can deepen researchers' understanding on the topic being studied. This could lead to new insight that require further investigation to understand how such different could occur and what is the implication. Therefore, we argue that social media observation in an interpretive study is not only enable triangulation but also deepening understandings of a topic being studied.

CONCLUSION

Regardless of whether our findings did or did not match between the offline interviews and online monitoring, our findings provide new insight on how social media observation can be used in an interpretive study. We have shown how social media can be used in an interpretive study as a research setting to strengthen our understanding of a topic being studied. The social media observation can be used as a stetting to extend of data gathering and as medium for triangulation (Urquhart & Vaast, 2012). This also implies that our findings of social

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media observation can be used as an alternative approach in an interpretive study or as complement to offline interviews to gather rich qualitative data.

Our findings also prove that the use of social media observation in an interpretive study can be used to address limitation and challenges when it performed in conventional context (Pousti et al., 2013) such as participant recruitment (Eide & Allen, 2005; Patel et al., 2003) and limited access to observe all material transparently and what is going on in the research settings (Vaast & Walsham, 2013), and bias in data collection such as interviews which may take place in a very artificial situation due to time pressures (M. D. Myers & Newman, 2007). In most offline interview cases, even though the participants were given freedom to express their ideas and feelings regarding issues raised by the interviewer to "*allow respondents to tell their own story in their own terms*" (McCracken, 1988, p. 34), the informants might still express subjective views which lack correspond with objective reality (Dean & Whyte, 1958). We suspect that participantswill express their ideas more freely in an online arena. This may result in more validity and trustworthy data. As a result, this online observations may become a foundation of an interpretive research to improve integrity because more data from different sources and environment is available.

LIMITATION AND FUTURE RESEARCH

This study has some limitations and issues that will need to be addressed in further research. We use online data which was collected from participants whose identities are difficult to verify. The data neither was validated with face to face interview. Use of social media for an interpretive study also raises an ethical dilemma because we observe and draw content from posted material in an online setting without users' consent. This strategy needs to consider new ethical issue by exploring ethic discourse in social media study (e.g. Mingers & Walsham, 2010). The users were anonymous as some of them did not use real names. This may make research lack validity and reliability of data collected, and sampling may not represent the characteristics required for the study (Walther, 2002).

The limitations warrant caution in generalizing our results to broader populations. We suggest future research need to conduct study which involves face to face interviews with the participants from social media sphere. Future research also needs to be carried out or replicated within more social media contexts to increase generalizability as suggested by Schofield (2002) and Aggarwal et al., (2012). Such a strategy will contribute to extending the findings of this study by providing more evidence to support generalisation of our key findings.

We also acknowledge the challenges of using social media in interpretive study because communication in a social media context involves a variety of data such as visual, verbal, and text-based. This requires researchers to decide which data should be used and how to analyse them. This also may breach copyright of the author or the users who post the material. Future research should address issues such as how to deal with consent and copyright.

However, our in-depth study of the case study and the results can potentially contribute valuable theoretical and practical knowledge to the community (M. Myers, 2000). We expect our study as a product of our experience that can usefully inform similar study perspectivein

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social media sphere but with more cases and various social media contexts. As a result, key findings may be used to enhance academic perspectives and help researches incorporating social media in their interpretive study.

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