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Towards a Just City in Information Era: Understanding the Inclusiveness of Community Network Induced by Telecommunication Technology at the Local Level (Case Study: Cihapit and Cipaganti Neighborhoods, Bandung City, Indonesia)

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Abstract

With the growth and development of ICT, the concept of sustainability is facing opportunities to be enriched and developed. Focusing on the communication network improvement towards the Campbell's concept of 'just city' (1996), this study explores inclusiveness of community network induced by telecommunication technology. Taking a case at local level in Bandung City, Indonesia, this study investigates current communication network in the local level, as the ICT currently contributes greatly in communication network. The area of this study is narrowed into two neighborhoods—Cihapit and Cipaganti Neighborhoods—so the communication can be analyzed in detail. The findings suggest that some aspects of inclusive communication network are not met in Cihapit Neighborhood. On the other hand, the communication network in Cipaganti Neighborhood met several aspects of inclusive communication network, therefore Cipaganti Neighborhood promotes itself to create a just city.

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1. Introduction

Current sustainability models can be broken down into three main aspects, such as ecology, economy, and equity. On behalf the models, Campbell (1996) introduced the concept of “just city”—a city developing its economy yet maintaining the environment, so the results can be fairly distributed to every citizen. Furthermore, Fainstein (2010) also explored the concept and concluded that in addition to equity, democracy and diversity should be also considered. Campbell (1996) then translated these aspects into the roles in which planners can contribute. Technically, planners can manage emerging conflicts in a city by redefining the language of the conflict, negotiation and consensus building; generating opportunities for political pluralism; and developing market mechanism. This technical roles will complement the substantive roles planners already had, such as land use planning and design; land use envisioning to achieve ecological balance—or bioregionalism; and utilizing those developing technologies to improve urban innovation. From those roles, Sutriadi (2015) concluded that during developing a city with this model, space where citizen’s activities take place and communication system in planning are important to consider.

Since the growth of information and communication technology (ICT) nowadays encourages faster and more efficient communication, concepts of sustainability model regarding to ICT are also developed. Berke et al. (2006) proposed concept of smart growth and new urbanism, in which emphasize the compact and mixed physical development to induce social among citizens. Ishida (2002), Schuler (2002), and Couclelis (2004) introduced the concept of ‘digital city’, a city which is empowered by ICT and Internet to create a ‘place’ in network therefore people can interact. Angelidou (2014), Dameri (2014), Walravens (2014) and others proposed their own definition of smart city, a developed concept of digital city which aims to ensure sustainable development by enabling the effective yet efficient usage of city resources and smart decision making.

Communication system in planning itself were studied by Brooks (1980), whose result is that the consensus can be built by providing a communication system which transmits true, sincere, clear, and legitimate information from communicator to communicant—which in a city, the system components that interact with each other are government, public sectors, private sectors, and so forth. To operationalize the concept of communicative action in planning, Jeffres (2008) developed a toolset for planners to audit the urban communication system. Later in 2010, Jeffres proposed the concept of ‘communicative city’, a community whose environment facilitates development of a communication system that integrates its residents into a dynamic whole, that enables its citizens to get involved in civic activities and participate in a variety of roles, and makes possible a balance between mobility and stability (Jeffres, 2010).

From communicative planning perspective, the roles of ICT itself should be analyzed to develop Jeffres’ concept of communicative city (2010). To operationalize the concept of communicative action in planning, Jeffres (2008) developed a toolset for planners to audit the urban communication system. Later in 2010, Jeffres proposed the concept of ‘communicative city’, a community whose environment facilitates development of a communication system that integrates its residents into a dynamic whole, that enables its citizens to get involved in civic activities and participate in a variety of roles, and makes possible a balance between mobility and stability (Jeffres, 2010).

Jeffres’ sustainability concept—which is based on communication system—is able to enrich Campbell’s (1996) concept of “just city”. This study investigates the inclusiveness of community network induced by ICT at the local level towards just city. Taking a case at local level in Bandung City, Indonesia, this study aims to analyze current communication network in the local level, as the ICT currently contributes greatly in communication network. The goal is derived into two objectives, which is to analyze the current community network in local level and to analyze the usage of ICT in community network.

2. Conceptualizing Just City and Inclusiveness of Community Network

Campbell (1996) proposed a concept named just city, a city which does not only focus on growing economic activities and preserving the environment but also distributing the results fairly to the citizens. To meet the equity aspect in sustainable development, social capital plays a significant role in concocting sustainable communication network (Jeffres, 2010). Towards just city, this social capital also contributes in conveying inclusiveness of citizen, which is also included in equity aspect. Communication network is a subset of inclusiveness of citizen, but analyzing it is beneficial since successful communication is needed in building consensus between stakeholders, including citizens of the city (Brooks, 1980). Jeffres (2010) agrees that communication is actually able to operate to sustain

social systems. Communication network itself is actually based on the simple communication channels—interaction between human beings, as both receivers and transmitters, to exchange information—yet this communication is interlinked with other communications; creating lots of communication channels interlinked with each other (Chadwick, 1978). Later, Chadwick proposed that this channel can be physical—therefore having spatial attributes—or not. This proposition is proved as world witnessed how the development of ICT facilitates communication channels with no spatial attributes, such as exchange of information via telephone, emails, messages, and in latest decade social media is utilized to communicate.

In creating a sustainable communication network, the definition of communication network varies from conventional communication (which is face-to-face communication with no boundaries on the number of people involved) to technology-driven communication which is not spatially limited. Jeffres (2010) said that the sustainable communication network is based on technology-driven communication due to findings in several cases. However, we should also overlook the conventional communication which has spatial definitions. From their studies, Baker and Ward (2002) concluded that geography is still an important factor to sustain interest-based virtual communities, since Jeffres (2010) said, “interest not based on geography are less important and more transitory and are less likely to be sustained unless the interest affects people in their daily lives, in their physical or geographically-defined communities”. From the definitions of communication network mentioned above, two questions which should be put on the table are that first, what parts of communication networks to support its own sustainability and the second question is that how adaptive communication network in every condition to ensure its own sustainability.

Since communication network include civic engagement and community ties, communication network should induce collaboration, cooperation and social problem solving when the problems actually arise. These characteristics are actually called by Jeffres (2010) as “communication capital”, which is defined as the communication pattern facilitating social problem solving. Since this capital is not individual-oriented but community-oriented, first step to build communication capital is analyzing what people interact and communicate for and how people do the communication. The second step is that to measure communication capital and how important its role to solve problem in a community. However, to maintain the sustainability of communication network which is supported by communication capital, Jeffres (2010) identified the relating factors and formulated the other factors from previous studies done by Buley (1977), Dervin (1977), and Meier (1962), which are:

- Climate of communication, including speedy and efficient diffusion pattern of news and information and the redundancy in the channels connecting people;
- Commitment to community;
- Need for social problem solving;
- Lack of diversity—which represents both conflicts diminishing a community’s ability to respond external threats, however diversity can be beneficial since diversity can be a tool to attach pluralism of ideas and enhance the understanding to external threats. Lack of diversity can be conveyed by the climate for the expression of differences in values and opinions and a level of pluralism in the variety of ideas circulating around public issue;
- Level of public activity or the use of neighborhood’s resources;
- Level of public engagement,
- Organizational involvement, including established channels connecting leaders and constituents
- Interpersonal trust, including access to pertinent expertise through public communication channels

In information era, the concept of just city faces opportunities to be developed along with the current ICT growth. Relating to the equity which is a core in just city and the component of sustainable development, several issues arise and are needed to consider. One of the issues is digital divide. Hargittai (2003) defined the phenomenon as the gap between ICT users and non-users. The digital divide can directly binary distinction between those who 'have' technology ('the haves') and those who 'do not have' technology ('the have-nots'). Mori (2011) gave meaning of digital divide which is inequality for people in accessing telephone services, computers, and the Internet network. Sciadas (2005) also gives the same definition of the digital divide, only it is expanded to a global scale and an aggregate of digital divide in the country. Comparison of the digital divide between countries have shown the overlap between economic aspects with social aspects on a global scale.

Studies conducted by DiMaggio and Hargittai (2001) showed that the number of Internet users to communicate and receive information from day to day has been increasing greatly. Thus, the term digital divide is becoming less representative when discussing inequality in the use of ICT, especially Internet-based ICT. The term digital divide is going to be representative if the difference is based on how Internet users access and use ICT. DiMaggio and Hargittai (2001) called this 'digital inequality' assuming that access to the Internet media is easy and universal. Digital inequality conveys the inequality in society groups in some aspects and dimensions when accessing and using ICT. In measuring the digital inequality, Hargittai (2003) considered factors in addition to connectivity to the Internet, which are as following.

- The technical components, such as the quality of equipment and physical infrastructure of ICT, including the quality of the hardware, software, and speed of the internet connection.
- The level autonomy of use, consisting of the location when people access the Internet and freedom in choosing the media used regarding to the activities they do.
- Relationships and social support, such as the availability of immediate assistance in case of difficulty in accessing and using the Internet.
- Experience, which consists of the duration of the technology usage and the type of technology usage patterns.

These factors of digital inequality and digital divide are complementary to the previous factors supporting the sustainability of communication network, since current communication pattern is highly influenced by ICT. Overcoming digital inequalities and bridging digital divide should also be an agenda in implementing just city in this information era.

3. Methods

3.1. Scope of study

The inclusiveness of community network is analyzed by identifying what builds community network, how is the community network, and in what extent ICT plays role in community network at local level. Community network consists of by the actors involved, their roles, and how they interact with each other; the same as Jeffres (2008) proposed the same methods for the purpose to analyze communication pattern in a community.

This study's area is two neighborhoods (*kelurahan*) in Bandung City, named Cihapit Neighborhood and Cipaganti Neighborhood. Both neighborhoods are administrative units, therefore they have official staffs which is in hierarchical order. The neighborhood official usually consists of *Lurah* as the head of neighborhood—who also lead the internal staffs in office; *Ketua Rukun Warga (RW)* as the head and representative of some smaller communities called *Rukun Tetangga (RT)*; and *Ketua RT* as the head and representative of smaller communities, which is sometimes consisted of a number of houses. There are also some supporting bodies in *kelurahan*, such as *Musyawarah Pimpinan Kelurahan (Muspika)*, *Lembaga Pemberdayaan Masyarakat (LPM)*, *Dewan Kesejahteraan Masjid (DKM)*, *Karang Taruna*, and others. The uniqueness of the neighborhood officials in mostly all parts of Indonesia is that there are a key person who has a role as an advisor not only to neighborhood officials, but also to the residents in the neighborhood.

3.2. Data Required

Based on the hierarchy in neighborhood officials, interviews were conducted with *Lurah*, *Ketua RW*, and *Ketua RT* as informants. These informants were selected by purposive sampling until adequate information had been attained. The data required in this study include the communication network in the local level and the usage of ICT in community network. The communication network was checked by identifying the actors included in communication network and analyzing the interaction between these actors. The usage of ICT in local communication network is checked by identifying the methods which these actors used to communicate.

4. Result and Discussions

4.1. The Communication Network in Cihapit and Cipaganti Neighborhoods

The communication network in Cihapit and Cipaganti Neighborhoods will be examined by firstly identifying actors who have major roles in communication network. After that, how each actor communicates will be analyzed; is there any type of communications? What is something unique from these communications?

It is found that the actors who have major roles in communication network in both Cihapit and Cipaganti Neighborhoods are *Lurah*, *Ketua RW*, and *Ketua RT*. These actors have a roles in communication network since there is hierarchical and organizational order in those neighborhoods. *Lurah* usually coordinates with *Ketua RW* from several RW; each *Ketua RW* coordinates with several *Ketua RT*; and *Ketua RT* is a hub of communication network which does direct communication with the citizens. This hierarchical path of communication will be reversed once the citizens will submit any question, complaints, opinion, and other information. The other actors which was identified during the research, their role in the neighborhood, and their role in communication network will be described below.

Table 1. The Actors, Their Role in Neighborhood, and Their Role in Communication Network

Actors	Roles in Neighborhood	Having Role in Communication Network?	
		Cihapit Neighborhood	Cipaganti Neighborhood
<i>Lurah</i>	<ul style="list-style-type: none"> • Leader in the neighborhood, most likely organizational • Representative of neighborhood in higher level • Under supervision of <i>Kecamatan</i>—whose <i>Camat</i> is the Head of organizational staffs 	Yes	Yes
<i>Ketua Rukun Warga (RW)</i>	<ul style="list-style-type: none"> • Leader in the smaller neighborhood called <i>Rukun Warga</i>, most likely organizational • Representative of <i>Rukun Warga</i> in higher level • Under supervision of <i>Kelurahan</i>—whose <i>Lurah</i> is the Head of organizational staffs 	Yes	Yes
<i>Ketua Rukun Tetangga (RT)</i>	<ul style="list-style-type: none"> • Leader in the smallest neighborhood called <i>Rukun Tetangga</i>, most likely organizational • Representative of <i>Rukun Tetangga</i> in higher level • Under supervision of <i>Rukun Warga</i>—whose <i>Ketua RW</i> is the Head of organizational staffs 	Yes	Yes
<i>Lembaga Pemberdayaan Masyarakat (LPM)</i>	<ul style="list-style-type: none"> • Consultant of <i>Kelurahan</i> official staffs in social issues 	Yes	Yes
<i>Dewan Kesejahteraan Masjid (DKM)</i>	<ul style="list-style-type: none"> • Board of Moslem citizen who take care of mosque and its activities • A representative of citizen from cultural perspective, since Islam is most likely believed by citizens in Indonesia 	Yes	Yes
<i>Karang Taruna</i>	<ul style="list-style-type: none"> • Organizations for teenagers and young adults which does social cause activities • Under supervision of <i>Kelurahan</i> 	Yes	Yes
<i>Tokoh Masyarakat</i>	<ul style="list-style-type: none"> • Several people who is considered as The Elders of neighborhood—to whom the citizens seek for advices 	Yes	Yes
<i>Bintara Pembina Keamanan dan Ketertiban Masyarakat (Babinkamtibmas)</i>	<ul style="list-style-type: none"> • A police assigned in a <i>kelurahan/desa</i> to prevent criminal action • Deliver frequent report of <i>kelurahan/desa</i> condition to police station they belong to. 	Yes	Yes

The table displayed the actors involved in local communication network and what roles every actors will have from any part of Indonesia, including Cihapit and Cipaganti Neighborhood. However these type of actors and their own roles differs from one place to another, since these actors involved are influenced by social—both tradition and culture—and demographic background (Jeffres, 2008). From social background, it is found that there are several examples of communication which are influenced by tradition and culture. These kinds of communication is believed by the key informants (including *Lurah*, *Ketua RW*, and *Ketua RT*)—especially in Cipaganti Neighborhood—to be

effective since the attendance and interests of the citizens are still high. From these indicators, the key informants in Cipaganti Neighborhood were sure that citizens were involved and therefore had social capital. The findings in one RW in Cihapit Neighborhood showed that *Ketua RW* plays important role as a hub of information—from *Kelurahan* to citizens in his RW or vice versa—due to almost all of citizens are 50 years or older and the retirees from their previous job.

From the interview, it is found that this interaction is not bounded by this organizational relationship, but also based on several conditions. On Cihapit Neighborhoods, *Lurah* and the official staffs made a procedure for citizens so if they want to submit any complaints related to their house and surrounding area, they will have to submit their complaints hierarchically. The information will be reviewed by *Ketua RT* first, and if *Ketua RT* is not able to solve the problems, then it will be brought to *Ketua RW*. If *Ketua RW* is also not able to solve the problem, *Lurah* will approach to solve the problems. This whole procedure will need any signature from any person in charge at any level. This procedure forces any person in charge in lower level than *Lurah* to actually review problems in their area. However, the same procedure is not found in Cipaganti Neighborhoods. *Lurah* of Cipaganti Neighborhood didn't establish a procedure to gather aspirations from citizens. *Lurah* will coordinate with *Ketua RW*, and *Ketua RT* will coordinate with *Ketua RW*, and since there is no procedure for gathering aspirations, these actors sometimes collect aspirations directly from their citizens. The citizens sometimes also give aspirations directly to these actors.

How the aspiration got collected from citizens also depends on the form of communication. In both neighborhoods, it is found that the form of communication include face-to-face meeting between two parties of others, indirect communication via printed media (such as posters and information board), and indirect communication using telecommunication technology (such as telephone, emails, social media, and government's channel of communication). One of important findings in this research that there are several direct communication that are influenced by culture and tradition, and these types of communication will be displayed in table below.

Table 2. Types of Communication in Cihapit and Cipaganti Neighborhood

Type of Communication	Influence	Description	Condition	
			Cihapit Neighborhood	Cipaganti Neighborhood
Meeting in RW/RT level	Organization; Tradition and culture	Frequent meeting to discuss several social issues happening in the neighborhood. Citizens in RT/RW level are invited to attend. It is also used to disseminate information from government in sub-district (<i>kecamatan</i>) or city level	<ul style="list-style-type: none"> • <i>Lurah</i> orders <i>Ketua RW</i> and <i>Ketua RT</i> in his jurisdiction to hold this meeting in every 2 weeks and discuss the recent issues in their neighborhood • Informant told that this meeting is not held regularly in his RW due to demographic condition; almost all of his citizens are over 60 or above. Therefore, informant—which is both <i>Ketua RW</i> and <i>Ketua RT</i>—disseminate information by door-to-door. 	<ul style="list-style-type: none"> • <i>Lurah</i> orders <i>Ketua RW</i> and <i>Ketua RT</i> in his jurisdiction to hold this meeting in every 2-3 weeks and discuss the recent issues in their neighborhood. • Informant told that this meeting is held regularly. They discuss about social issues and government's programs. It is found when urgent situation happens (like disaster), usually the meeting becomes more frequent.
<i>Arisan</i>	Tradition and culture.	This event is regular meeting in monthly basis, with the participants is usually women. The event sometimes includes discussing current social issues. Participants are required to save some money, and each month one of the participants collect the money of all participants in a month. In the following month, different participants will get the same amount of money.	It is not mentioned by informants.	This event is used not only to gather women to meet and saving money, but also to disseminate information related to social issues.
<i>Pengajian</i>	Tradition and culture.	It is a regular meeting in weekly basis, with the participants are Moslems. The main activities include reading Al Quran, having sermons, and others.	It is not mentioned by informants.	<ul style="list-style-type: none"> • Since most of residents in this neighborhood are Moslems, the participation in this event is high. • Besides the main activities, this event is also useful to disseminate information related recent news in their neighborhood.

From the type of communication, it is found that culturally and traditionally-influenced communication plays role in disseminating information, especially information related to social issues in their neighborhood and government’s program to be applied. However this culturally and traditionally-influenced communications is described by informants in Cipaganti Neighborhood.

4.2. *The Usage of Telecommunication Technology in Communication Network in Cihapit and Cipaganti Neighborhoods*

In communication network, telecommunication technology plays a significant role since the growth of ICT in latest decade. The nature of ICT is actually making the transmission of information goes faster and more effective. This study looks for how ICT affects communication network in Cihapit and Cipaganti Neighborhood. Based on interviews, most citizens of both neighborhood have used telecommunication technology. Several technologies used will be displayed in Table 3.

Table 3. Types of Telecommunication Technology Used by Informants in Cihapit and Cipaganti Neighborhood

Informants	Telecommunication Technology Used in Communication Network	
	Cihapit Neighborhood	Cipaganti Neighborhood
<i>Lurah</i>	<ul style="list-style-type: none"> • Telephone call • SMS 	<ul style="list-style-type: none"> • Telephone call • SMS • Blackberry Messenger
<i>Ketua Rukun Warga (RW)</i>	<ul style="list-style-type: none"> • Telephone call • SMS • Email • Chatting Messenger <ul style="list-style-type: none"> a. Blackberry Messenger • Social Media <ul style="list-style-type: none"> a. Facebook b. Twitter 	<ul style="list-style-type: none"> • Telephone call • SMS • Email • Chatting Messenger <ul style="list-style-type: none"> a. Blackberry Messenger • Social Media <ul style="list-style-type: none"> a. Facebook
<i>Ketua Rukun Tetangga (RT)</i>	<ul style="list-style-type: none"> • Telephone call • SMS • Email • Chatting Messenger <ul style="list-style-type: none"> a. Blackberry Messenger • Social Media <ul style="list-style-type: none"> a. Facebook b. Twitter 	<ul style="list-style-type: none"> • Telephone call • SMS • Blackberry Messenger

It is found that the usage of telecommunication technology in both neighborhoods are relatively high, since the Neighborhood officials are the main actors who frequently uses technologies to communicate. It is also found that almost 90% residents of both neighborhoods also use technologies such as fixed-line phone and cellphone. However, some respondents told that there are several factors contributing on digital divide in their neighborhoods. Two main factors are that the age of technology user and economies reason. In Cihapit Neighborhoods, most of residents are senior citizens—who struggle hard to participate in regular meetings—and they have been using fixed-line phone to communicate with Neighborhood officials and other residents. This behaviors have implications on daily life, since residents’ participations on gathering or regular meeting is relatively low. Also, the age become the reason on why most residents use fixed-line phone since fixed-line phone is more easily operated than cellphone. The Neighborhood officials then use this mean of communications to disseminate useful information or to engage residents in public events, such as the election of *Ketua RT*, *Ketua RW*, and *Lurah*. In Cipaganti Neighborhood, most of residents mainly use cellphone since the demography is more heterogeneous and also cellphone is more reasonable. However, the past history of Cipaganti Neighborhood as low density residential zone also convey the past history of middle-to-high class of residents, who able to regularly pay the telephone bills.

Residents in both neighborhoods also has used Internet as a tool to communicate. It is found that residents in both neighborhoods communicate through emails, chatting messenger—such as Blackberry Messenger, and social media—such as Facebook and Twitter. Neighborhood officials also use these means of communication to disseminate useful information and also to engage residents to public participation. However, there are still residents who do not utilize Internet to communicate. As Hargittai (2003) put it before, the reasons of digital divide in accessing Internet in both neighborhoods are mostly age-related and paying-ability-related. The senior citizens tend to not use Internet because their little experience of using Internet. Since their level autonomy of use is fairly low, they need assistance in using Internet. The ability to pay also become an issue since some residents are not able to pay the regular bills, hence they do not use Internet to communicate.

4.3. *Reviewing The Aspects Related to Just City and Communication Network*

The aspects of just city can not only be derived from its definition, but also from the concept of communication network, developed from theories from Jeffres (2010), Hargittai (2003), Buley (1977), Dervin (1977), and Meier (1962). The comparison of current community network with these aspects of inclusive communication network as a step towards just city will be shown in Table 4.

Table 4. The Comparison of Current Communication Network in Cihapit and Cipaganti Neighborhood with Aspects of Inclusive Communication Network As A Step Towards Just City

Aspects of Inclusive Communication Network Towards Just City	Current Condition	
	Cihapit Neighborhood	Cipaganti Neighborhood
Actors involved in communication network	All of the neighbourhood officials are involved, with residents plays little part	All of the neighbourhood officials are involved, with residents plays important part
Frequently used type of communication	Indirect and phone-based communication is frequently used	Traditionally and culturally-influenced events are frequently used and highly participated
The usage of technology in communication network	Fixed-line phone is more preferable	Cellphone is more preferable. Internet is also widely used
Climate of communication	Diffusion pattern of news and information are not speedy. The channels connecting people tend to be singular.	Diffusion pattern of news and information are relatively speedy. The channels connecting people tend to be redundant
Attachment to community	Attachment to community is relatively low	Residents are attached to community by traditional and cultural events
Need for social problem solving	Social problem solving tends to be hierarchical	Social problem solving depends on the cases
Lack of diversity	The opinions tend to be conform	The pluralism is high
Level of public activity	Public activities are seldom held	Public activities are frequently held
Level of public engagement	Public engagement is relatively low	Public engagement is relatively high
Organizational involvement	Established channels connecting leaders and constituents are mostly hierarchical	Established channels connecting leaders and constituents are many, ranging from regular gathering to technology-based communication
Interpersonal trust	Access to pertinent expertise is easy since hierarchical communication is used	Access to pertinent expertise is easy since the diffusion pattern of news is fast and the use of direct communication is high
Level of digital divide	There is still digital divide, mostly caused by age factor	There is still digital divide, mostly caused by the factor of ability to pay

From the table above, it is shown that some aspects of inclusive communication network are not met in Cihapit Neighborhood due to the communication which tends to be hierarchical and the level of digital divide. This condition actually discourage Cihapit Neighborhood to provide inclusive communication network; hence hindering the neighborhood to become a part of just city. On the other hand, the communication network in Cipaganti Neighborhood

met several aspects of inclusive communication network, therefore Cipaganti Neighborhood promotes itself to create a just city.

5. Conclusions

It is found that communication network in both neighborhoods is constructed by several important actors, which are mostly neighborhood officials. Each actor communicates by direct and indirect methods; which telecommunication technology is also used. However, the findings shows that traditionally and culturally influenced events play an important role in communication network since the participation of residents in these events is fairly high. It is indicated that their roles will not be replaced by technology-based communication soon.

Other findings suggest that telecommunication technology has potential to engage residents in public activities as well as raise awareness of residents to use technology to submit opinions and critics. Actually, the technology itself empowers media of communications to be more effective and instant. Hence, the usage of technology in communication can generate beneficial utilizations in the future.

However, there are issues in improving inclusiveness of communication network towards just city. One of those is digital divide and actually this issue leads us into greater issue: Are these residents also not able to pay for daily needs? Does digital divide actually reflect social inequalities? In the end, these questions follow a big question mark: how far are we from living in a just city?

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